2014 University of Guam Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

The College of Natural & Applied Sciences' Cooperative Extension & Outreach (UOG-C E&O) represents the University of Guam's (UOG) front door to the non-formal education program needs of the residents of our island. UOG-C E&O serves the people of Guam by providing research-based knowledge through innovative community programs to foster positive change. As UOG's primary service oriented unit, UOG-C E&O actively collaborates with other universities, colleges, schools, national/regional campuses, and distributed (distance) education delivery systems to meet the changing lifelong educational needs of our diverse population. UOG-C E&O has the unique capability of bringing the depth and breadth of UOG's cumulative knowledge to bear in identifying and solving problems. Our research projects and Extension programs link different departments and facilitates mutually-beneficial collaboration within UOG and between us and external organizations, individuals, and businesses. In so doing, UOG-C E&O makes a vital contribution to the public. Our Extension & Outreach programs educate a wide spectrum of citizens (youths, adults, families and groups), including individuals who make (or have the power to influence) decisions with public consequences. Our Extension & Outreach 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.

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 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 extension professionals to address issues faced by the community as well as other individual/community educational and informational needs. The CYFFN planned programs are focused on helping families, youth and individuals to become mentally, physically and emotionally healthy and assisting communities in becoming sustainable and resilient to the uncertainties of economic, health, climate, and security issues. 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 2013 the University of Guam President began the "Good to Great" (G2G) initiative, aimed at a university-wide examination of all programs to measure its response to internal and external trends in higher education, and to clarify and strengthen the University's role in Guam and the region. As part of this process, all programs were required to submit an evidenced-based report to show levels of achievement in four areas: relevance and fit, sustainability, quality of program/activity, and demand and relationships. A program evaluation review committee was established to review and rank submittals in five areas where investment of resources ranged from heavy investment (1) to divestment (5). The rankings, not meant to be hierarchical, served as way for the University Executive Administration to have a foothold on those programs that demonstrated closest rankings to the four criteria as noted above.

The G2G was an excellent opportunity for UOG-C E&O for several reasons. First the process allowed for

internal review of its non-formal education programs and research; second, it served as an external review of the services and programs we deliver; and third, it communicated to the University community the high levels of collaboration, relevance and responsiveness to the community stakeholders we serve. While UOG-C E&O embraced the opportunity to review, collaborate and communicate our strengths and identify areas for shoring up, UOG-C E&O was just as satisfied that it ranked number one. Those programs falling into this category are described from the committee's report as "...programs for which itself is intrinsically central to the fundamental mission of universities in general, Land-Grant universities in particular, and/or the Good-to-Great objectives of leveraging the region's geographic location and preserving and promoting its unique cultures and natural resources...". (University of Guam Program Evaluation Committee Review Report, 2014). Moreover, the committee describes it rationale for its ranking, in part, "To affect positive change in the environment and communities, extension services are responsible for bringing research-based knowledge in agriculture and natural resources, youth, families, food, and nutrition to local and regional communities, and to individuals. Through its close collaborations, annual impact assessments, step-wise gathering of community needs, and applied research, UOG-C E&O contributes directly to learning, teaching, discovery, and service that preserve and promote quality of life and sustainable use of the region's natural resources."

These often-intrinsic values of UOG-C E&O demonstrate the importance and centrality not only to the University of Guam but also, and more importantly to the people and environment we strive to serve and protect. The review now gives UOG-C E&O strategic areas where it can both strengthen and sustain our role in Guam and the region.

Program activities reporting for 2014, continue to reflect the maturing of collaborations and partnerships that are moving towards interdisciplinary and holistic ways of serving communities and conducting research. Briefly, here are highlights of each of our 6 Programs for 2014.

Community Development

This program focused on bring together historical data for decision-making through its Knowledge@Guam initiative. During this reporting period, the KGI conducted 12 Focus Group sessions that engaged a total of 92 participants (44 male, 48 female) using the "Appreciative Inquiry", hosted the Guam Data Modernization Conference and conducted a survey of survey of Government of Guam agencies. Activities for this program include:

1. Conducting community development workshops and trainings that foster more inclusive decision-making process and action (to teach policy leaders to interpret and apply economic data to local development decisions).
2. Conducting community asset mapping.
3. Providing provide technical assistance in strategic planning, conducting needs assessments, survey design to help people understand the economic impact of policy changes, and implementation capabilities.
4. Accessing, interpreting and applying objective data and conduct assessments (survey design and field data collection).
5. Establish and maintain collaborations with local and federal government.
6. Establish partnership and/or collaborative MOAs and MOUs.
7. Establish coalitions for placed based economic development (community-based entrepreneurship).
8. Conduct focus groups sessions and provide training on how to conduct community needs assessments

Food Safety

Safe food is non-negotiable. Our program is beginning to put more emphasis on teaching how to make safer food for retail and also best practices in a home environment. While our lead food safety scientist was on sabbatical most of 2014, these were our main efforts:

1. Investigating factors affecting foodborne illness and food quality in food processing and preparation.
2. Providing workshops and training in food safety and food processing in the community
3. Providing consultant services about food safety and food technology in community.
4. Exploring and determining the values of tropical and subtropical of plants, fruits, and vegetables to benefit human health.
5. Developing tropical value-added food products.
6. Disseminating scientific-based information and technologies related to food safety, food processing, and

marketing safe and wholesome food products in the community.

4H and Youth

In 2014, 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 3,406 youth. Activities include 38 workshops with community clubs, 57 workshops with school clubs, 10 workshops with 4H after school clubs with military 4H clubs. We also conducted 27 special interest/short term programs, a 3-week day camping program, 18 after-school enrichment programs, 11 individual study/mentoring/family learning program, 5 after school program using 4H curriculum on staff training, and 5 instructional TV/Video/Web programs. This year, 4H collaborate with the Department of Public Health Division of Senior Citizen focusing on interaction and relationships with senior and youth to promote healthy life style choices to elders. 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, as well as other activities that focus on workforce preparation, such as seamanship work preparation and marine related occupations.

Child Obesity

Child obesity statistics in Guam, like the nation, are high. In order to do our part in reducing those numbers and teaching best practices, these are our efforts in this area:

1. Provide basic nutrition education classes on topics that relate to nutrition and food which include: 'MyPlate'; 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. Conduct nutrition workshops to target population.
3. Develop 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. Develop recipe books that feature favorite local recipes.
5. Create a local recipe book that incorporates healthful modifications of local dishes.
6. Conduct food demonstrations on local dishes that incorporate healthful modifications.
7. Update calendar poster that identifies locally grown fruits and vegetables with high nutritive value and suggest ways to healthful ways to prepare the local produce.
8. Promote increase water consumption.
9. Promote decrease recreational screen time.
10. Promote the decrease consumption of sugar-sweetened beverages.
11. Conduct workshops promoting locally grown fruits and vegetables with healthful recipes for both farmers and experienced cooks (marketing healthful recipes with locally grown produce).
12. Maintain partnership with local food sources businesses to promote a greater variety of healthful foods and education awareness within food source facilities.
13. Develop and disseminate fact sheets of common causes of preventable chronic diseases that are prevalent on Guam and show how related to poor lifestyle choices.
14. Develop and disseminate health and nutrition education curriculum for chronic disease prevention along with educational materials.

Plant Health & Pest Management

Healthy and production edible and non-edible plants are import to the health of Guam's people and the beauty and environment of Guam. In April of 2014 the PHPM group received a $48,000 Western Sustainable Research and Education grant to study a new outbreak of a virus disease that causes severe leaf curling and stunting of tomato. The causal agent was determined to be a novel genotype of whitefly transmitted begomovirus, with 90% sequence identity to Ageratum yellow vein virus (AYVV). In August

2014, farm trials were begun to compare 17commercial tomato varieties for virus resistance and production suitability. Five varieties with grape, cherry, globe, or oval fruit types were deemed suitable for Guam, based on their strong virus resistance, high yield and low levels of cracked and unmarketable fruits.
The PHPM group continued its research and outreach education on Guam's declining (dying) ironwood (Casuarina equisetifolia) trees through a USDA Forestry Service grant. In 2014, University of Guam plant pathology students received education and training on ironwood tree decline. The students reenacted a previous experiment that determined a causal agent of decline. First, using isolates of pathogenic bacterium Ralstonia solanacearum that was previously isolated from declining ironwood trees, the students infected healthy ironwood tree seedlings. Two months later they successfully isolated the bacterium from the seedlings. Also in 2014, University of Guam Pest Management students received education and training on ironwood tree decline. The students successfully baited for subterranean termites on ironwood tree roots, which may be contributing factor in ironwood tree decline.
Members of the PHPM group continued to service Guam and other Micronesian islands by identifying insect pests and recommending methods for mitigating the damage they cause. Much of the time was spent doing project management for the Guam Coconut Rhinoceros Beetle project which is funded by multiple grants from USDA-APHIS, US Forest Service, and the Government of Guam. During 2014, it was discovered that a local fishing net called "Tekken" worked remarkably well for trapping Rhino Beetles. Current research shows that compost piles are highly attractive to the beetles, functioning as a trap in a given area. Large piles of organic matter have been covered with tekken at the UOG Agriculture Experiment Station in Yigo and on the UOG campus in Mangilao, catching 25 times as many beetles as standard pheromone traps. It should be possible to cover very large breeding sites across Guam efficiently and relatively affordably with little effort.

Global Food Security

As an island, Guam imports most of its food. This plan of work is about developing local food production for our island communities. We addressed animal and plant production issues by networking with; the agricultural industry supply, professional support (government and private), and demand sectors through collaborative needs assessments, program planning efforts, curriculum development, demonstrations and public trainings. We have taken the approach that true food security in an island context involves engaging both small subsistence and home plots as well as developing a vigorous import substitution effort in terms of our food supply with our commercial producers and distributors. So we worked to develop home and community produced food as alternatives to imported food through farm, home, farming/gardening, and animal production programs thus increasing local food diversity and self reliance. In the past year we conducted activities such as:

1. Conducted applied research and program demonstrations on campus, local farms and partner sites.
2. Conducted training workshops for local and regional animal, fruit, vegetable and aquaculture producers at campus and community facilities and on program demonstration sites. We also provided support to partner agency outreach efforts (field days and workshops) on farms and other venues.
3. Conducted field tours for animal producers, fruit and vegetable producers, youth groups, home gardeners, and visiting agricultural professionals on the program demonstration sites.
4. Strategic planning meetings were held with agriculture support agencies, farmer organizations, non government agencies/non profits, agricultural consultants and island leaders involved with food. We identified priorities for program development, grant funding and partnership building to address these priorities. Funded grants and partnership MOU's are a planned output of this POW, demonstrating capacity building through training, collaborative planning and presentation of needs.
5. To support partner agencies efforts and increase collaboration: a workshop was held on government incentive programs and funding opportunities for farmers and the community, a workshop was held on writing grants to address needs of the agriculture community, and a subregional conference was held on island agriculture infrastructure.
6. To increase the skills of island agricultural and food professionals we held shared curriculum development meetings and then train the trainer workshops on program curriculum prior to holding workshops at the demonstration sites for the general public.

Summary

These are brief overviews of our Extension & Outreach efforts in 2014. We have and will continue to have an important impact on the people and places in Guam and the Western Pacific Region.

Total Actual Amount of professional FTEs/SYs for this State

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	22.0	0.0	0.0	0.0
Actual	19.0	0.0	0.0	0.0

II. Merit Review Process

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

- Combined External and Internal University External Non-University Panel

2. Brief Explanation

Internal plans of work get reviewed by the Associate Dean for Extension & Outreach and then the Dean of our college. Project efforts often have advisory boards to help them gather input on pressing needs and that data in brought into consideration when the faculty writes their annual plan 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.

UOG CES/ANR faculty and associates sit as advisory to local agricultural boards and farmers groups at these session we are able to solicit ideas and identify needs for program planning and development. In this process we are able to get commitment from agriculture leaders to participate in the programs developed to address their concerns. We also have several advisory committees for programs like the New Farmer Program and 4H to provide review of the past years work and develop priorities and plans for future years work.

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.

Guam is a very small place. We have extensive contacts within all government agencies and with trade groups. We also use the newspaper and press releases to advertise our efforts. Our new website will include a feature where clients can sign up to receive our news briefs.

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.

Again, we are often in communication with government agencies and trade associations and they help us reach out to clients. We survey in courses, in community meetings, and other settings to get a pulse of what might be happening in a community and where we might be of assistance. Guam, being small, gives us the opportunity to see and talk to clients even when we are not at work. They talk, we listen, and then we see what is a reasonable solution to needs.

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.

The input gathered is used to plan new programs and improve existing programs. The process also serves to recruit new professionals for partnership in our programs. This is how, for example, CNAS C&O started working with Guam Community College Culinary Programs, and the Micronesian Chefs

Association. It also served to identify trainers from NRCS and FSA for New Farmer Programs. More recently these activities have brought new working relationships with Guam Public Health, Social Services, and the Non-Communicable Disease Consortium.

Brief Explanation of what you learned from your Stakeholders

That we benefit from programs such as WSARE, additional funding for EFNEP work, and that other USDA programs, such as AMS farmers market programs are important to us.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1118297	0	0	0

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	1118297	0	0	0
Actual Matching	559149	0	0	0
Actual All Other	0	0	0	0
Total Actual Expended	1677446	0	0	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	359800	0	0	0

V. Planned Program Table of Content

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%			
704	Nutrition and Hunger in the Population	10%			
801	Individual and Family Resource Management	10%			
802	Human Development and Family Well-Being	10%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	15%			
805	Community Institutions and Social Services	25%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.0	0.0
Actual Paid	4.0	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**
235430	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
117716	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

One of the initiatives to deliver the planned program activity has been carried through the Knowledge@Guam Initiative which was intended to address village-based community development and planning related to informed decision-making and obtaining community datasets. Through the use of the Community Capitals Framework (CCF) (Flora and Flora 2006) , this approach provided the integrated technique that reviews community resources and how communities can invest in one resource to create new resources. It is a model to evaluate community well-being and capacity of a community to evaluate what aspects need improvements and to gauge how other capitals are influenced if change occurs. During this reporting period, the KGI conducted 12 Focus Group sessions that engaged a total of 92 participants (44 male, 48 female) using the "Appreciative Inquiry", hosted the Guam Data Modernization Conference and conducted a survey of survey of Government of Guam agencies.
Activities for this program include:

1. Conducting community development workshops and trainings that foster more inclusive decision-making process and action (to teach policy leaders to interpret and apply economic data to local development decisions)
2. Conducting community asset mapping
3. Providing provide technical assistance in strategic planning, conducting needs assessments, survey design to help people understand the economic impact of policy changes, and implementation capabilities
4. Accessing, interpreting and applying objective data and conduct assessments (survey design and field data collection)
5. Establish and maintain collaborations with local and federal government
6. Establish partnership and/or collaborative MOAs and MOUs
7. Establish coalitions for placed based economic development (community-based entrepreneurship)
8. Conduct focus groups sessions and provide training on how to conduct community needs

2. Brief description of the target audience

Participants ranged in age from under 19 to 60+, educational attainment from some high school to Master's degrees, Government professionals, Non-government organizations, Policymakers and village mayors.

The target audiences in the program include: local government, numerous commissions and boards; non-governmental organizations, youth ages 14-17. Other target audiences also include economic development professionals, small businesses and industries, community groups and the general public, regional collaborators.

3. How was eXtension used?

eXtension was used accessing the communities of practice (COPs) for references

- Creating Healthy Communities
- Entrepreneurs and Their Communities
- Land Use Planning
- EDEN

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	124	50	0	0

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- number of extension articles

Year	Actual
2014	0

Output #2

Output Measure

- number of workshops

Year	Actual
2014	2

Output #3

Output Measure

- number of brochures

Year	Actual
2014	2

Output #4

Output Measure

- number of disseminated research results, new technology and information

Year	Actual
2014	2

Output #5

Output Measure

- number of surveys

Year	Actual
2014	1

Output #6

Output Measure

- number of focus groups conducted

Year	Actual
2014	15

Output #7

Output Measure

- number of popular articles in newsletters, magazines and newspapers

Year	Actual
2014	0

Output #8

Output Measure

- number of one to one assistance

Year	Actual
2014	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of organizations individuals increasing leadership skills.
2	Number of individuals and organizations increasing knowledge of program development skills.
3	Number of individuals and organizations increasing knowledge of effective strategies for public decision making
4	Number of individuals and organizations crafting, evaluating, and implementing alternative solutions to address public issues
5	Number of individuals and organizations building skills and identifying opportunities to enhance effective participation in public decision making processes

Outcome #1

1. Outcome Measures

Number of organizations individuals increasing leadership skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Village Mayors and citizens of 3 villages, Government organizations and community organizations desire and need timely community-based information to make informed decisions.

What has been done
Three Village Monographs developed as a template for promoting and capturing community changes.

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 and Social Services

Outcome #2

1. Outcome Measures

Number of individuals and organizations increasing knowledge of program development skills.

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	4

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Both local and federal government organizations requiring timely community information for planning and addressing public issues continue to be an ongoing concern.

What has been done
Community village monographs developed to model the types of information that address a known public issue or concern.

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 and Social Services

Outcome #3

1. Outcome Measures

Number of individuals and organizations increasing knowledge of effective strategies for public decision making

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Government agencies struggle to address their technical capacity to support data processing and generation of government reports needed for basic community planning.

What has been done
Through the community development programs, the KGI initiative establishes a Knowledge management center offering support and assistance related to addressing technical data and survey assistance and support.

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 and Social Services

Outcome #4

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Three village Mayors have access to their village monograph providing a range of information for social area analysis and to help understand public issues impacting their communities.

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
704	Nutrition and Hunger in the Population
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 and Social Services

Outcome #5

1. Outcome Measures

Number of individuals and 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 Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Government organizations and policy makers aware of the community capitals framework and ways of addressing data and information around public issues.

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
704	Nutrition and Hunger in the Population
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 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

Survey results
Lessons learned Report

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

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	20%			
503	Quality Maintenance in Storing and Marketing Food Products	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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	1.0	0.0	0.0	0.0
Actual Paid	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**
88287	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
44143	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The input activities include: (1) investigating factors affecting foodborne illness and food quality in food processing and preparation; (2) providing workshops and training in food safety and food processing in the community; (3) providing consultant services about food safety and food technology in community; (4) exploring and determining the values of tropical and subtropical of plants, fruits, and vegetables to benefit human health; (5) developing tropical value-added food products; and (6) disseminating scientific-based information and technologies related to food safety, food processing, and marketing safe and wholesome food products in the community.

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	642	991	3406	2671

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of peer reviewed publications

Year	Actual
2014	1

Output #2

Output Measure

- # of non-peer reviewed publications

Year	Actual
2014	0

Output #3

Output Measure

- # of workshops

Year	Actual
2014	6

Output #4

Output Measure

- # of dissemination of science-based information

Year	Actual
2014	250

Output #5

Output Measure

- # of work with media

Year	Actual
2014	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Changes of participants (or residents) in gaining knowledge of principles and practices in food safety and food processing
2	Changes of participants (or residents) in improving practices and applying principles in food safety and food processing
3	Changes in magnitude of foodbonre illness and marketing safe and wholesome value-added food products in the community

Outcome #1

1. Outcome Measures

Changes of participants (or residents) in gaining knowledge of principles and practices in food safety and food processing

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
People in the community of Guam are lack of knowledge in food safety and processing value-added food products. The frequency of foodborne illness in the community is high. Most of food products in markets are imported.

What has been done
Workshops in food safety and value-added food processing were provided to elementary students, senior residents, low-incoming residents, general consumers, farmers, entrepreneurs, food workers, educators, and college students.

Results
After providing workshops and disseminating outreach educational materials in the community, people improve their knowledge in food safety and processing.

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

Outcome #2

1. Outcome Measures

Changes of participants (or residents) in improving practices and applying principles in food safety and food processing

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
806	Youth Development

Outcome #3

1. Outcome Measures

Changes in magnitude of foodbonre illness and marketing safe and wholesome value-added food products in the community

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
501	New and Improved Food Processing Technologies
502	New and Improved Food Products
503	Quality Maintenance in Storing and Marketing Food Products
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
806	Youth Development

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Competing Programmatic Challenges
- Other (Professional leave)

Brief Explanation

The key personnel in this Food Safety program was in sabbatical leave, affecting the program outcomes.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Based on the workshop evaluations, the results showed that participants gained knowledge through teaching and activities. Based on our observation on hand-on practices in workshops, participants learned and mastered the skills and techniques taught in

workshops. Participants demonstrated in workshops that they improved their behavior in food safety practices and processing safe value-added food products. Participants in workshops provided positive comments about the workshop organization, activities, and success.

Key Items of Evaluation

Targeted audiences improve knowledge in food safety and using tropical crops to process safe and wholesome value-added food products.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

4-H and Youth 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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	2.0	0.0	0.0	0.0
Actual Paid	3.2	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**
188345	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
94172	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

To achieve the 4-H program ultimate goals the following activities will be conducted based research proven and curriculum adopted Experiential Learning Model promoting life skills.

5 new 4-H Clubs will be organized and supported annually,

15 4-H school enrichment programs will be established and later chartered as 4-H Clubs,

10 special interest/short-term programs/Day Camps and 5 overnight camps will be conducted,

10 School-Aged Child Care Education Programs will be offered yearly,

5 technology related workshops will be conducted and

2 planned workshops for 4-H individual study/mentoring/family learning activities will be implemented.

2. Brief description of the target audience

Primary target audience includes children and youth in the community, public/private/military schools as well as their families/teachers/educators and organizations that requested our service in a collaborative manner. Extension continues its efforts 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 students whose first 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 Affairs to initiate programs and life skills to promote career path of clients. Our 4H program is working closely with senior citizens division from our villages to promote youth and adult interaction.

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

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	642	991	3406	2671

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	4	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- (1) # of club members

Year	Actual
2014	934

Output #2

Output Measure

- (2) # of volunteer leaders

Year	Actual
2014	167

Output #3

Output Measure

- (3) # of workshops

Year	Actual
2014	101

Output #4

Output Measure

- (4) # of brochures

Year	Actual
2014	4

Output #5

Output Measure

- (5) # of surveys

Year	Actual
2014	2

Output #6

Output Measure

- (6) # of media articles and promotions

Year	Actual
2014	7

Output #7

Output Measure

- (7) # of focus group

Year	Actual
2014	2

Output #8

Output Measure

- (8) # of volunteers trained

Year	Actual
2014	71

Output #9

Output Measure

- (9) # of extension staff trained

Year	Actual
2014	21

Output #10

Output Measure

- (10)# of collaboration established

Year	Actual
2014	28

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 resouces 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
2014	3406

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. Through these workshops youth were able to experience Mastery, Belonging, Independence, and Generosity. Each youth need to involve in these elements to become better citizen.

What has been done
workshops conducted with the total of 3,406 youth participating in the life skills sessions that increased their knowledge and skills in communication and expressive arts.

Results
3,406 participated in civic engagement, 996 learned skills in community/volunteer service, 2685 increased their leadership and personal development skills, and 3,406 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 resouces 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
2014	2361

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
2361 youth participants in the 4H 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 Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	2361

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Youth who participated in school gardening (eg. 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 4H 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
2,361 youth learned new science skills and increased their knowledge with regard to plants, soil 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
2014	1045

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
An essential element in youth development is independence. A skill that motivates youth to become critical thinkers, problem solvers, and good decision makers. To achieve these, CNAS 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. CNAS promote different youth career path opportunity to middle and high school students.

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 4H project area.

Results
1045 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
2014	3406

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In partnership with our local education department and 4H military project, a demand for science, engineering and technology has been addressed. Resources identification and sharing had equipped our 4H 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. College and career path had been developed to promote entrepreneurship in STEM.

What has been done
124 SET workshops were conducted in the GDOE, local 4H Clubs, community organizations, summer and Christmas break including 8 with the Military installation 4H Clubs.

Results
3,184 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
2014	147

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

Results
4H Community 4H Clubs, Special Interest 4H Clubs, School Based 4H Clubs, Military 4H Clubs were organized and chartered. 4H office continues to service clubs implementing life skills activities as scheduled. Finally, volunteers have had a major impact in the increase enrollment of 4H 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
2014	1256

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 participants to become proactive in their future financial challenges.

What has been done
4H staff conducted 51 workshops within Guam public schools, local 4H Clubs, community organizations and during summer and Christmas break including 12 Military installations. Workshops in budgeting, understanding where money goes, value of money, and simple business plans were conducted. Guam Save youth finance was also delivered to enable youth to understand basics of needs and wants concept to promote saving money.

Results
1,240 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
2014	2822

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 the leader or 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, 4H has conducted life skills training using Targeting Life Skills Model and Experiential Learning Model.

Results
2,822 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
2014	2964

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Volunteering and community service are the 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.youth need to belong for something valuable to empower their positive decision making.

What has been done
UOG-CES conducted workshops linking volunteer and community service to sustainable environment, community, individuals, families, and organizations resiliency

Results
2964 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 sharing 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

Brief Explanation

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

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Pre- and post-evaluation results indicate that youth who participated in 4H 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 # 4

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 and Social Services	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	0.0	0.0
Actual Paid	4.0	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**
235431	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
117716	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

(1) provide basic nutrition education classes on topics that relate to nutrition and food which include: 'MyPlate'; 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) Conduct nutrition workshops to target population. (3) Develop 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) Develop recipe books that feature favorite local recipes. (5) Create a local recipe book that incorporates healthful modifications of local dishes. (6) Conduct food demonstrations on local dishes that incorporate healthful modifications. (7) Update calendar poster that identifies locally grown fruits and vegetables with high nutritive value and suggest ways to healthful ways to prepare the local produce. (8) Promote increase water consumption. (9) Promote decrease recreational screen time. (10) Promote the decrease consumption of sugar-sweetened beverages. (11) Conduct workshops promoting locally grown fruits and vegetables with healthful recipes for both farmers and experienced cooks (marketing healthful recipes with locally grown produce). (12) Maintain partnership with local food sources businesses to promote a greater variety of healthful foods and education awareness within food source facilities. (13) Develop and disseminate fact sheets of common causes of preventable chronic diseases that are prevalent on Guam and show how related to poor lifestyle choices. (14) Develop and disseminate 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) senior citizens and their support groups, (11) other groups requesting services.

3. How was eXtension used?

Used for gathering information on school/community gardens. Gathering resources to find USDA diet recommendations.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2042	15910	6553	10501

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	2	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops

Year	Actual
2014	327

Output #2

Output Measure

- # of brochures

Year	Actual
2014	7

Output #3

Output Measure

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

Year	Actual

2014	0

Output #4

Output Measure

- # of one to one intervention

Year	Actual
2014	327

Output #5

Output Measure

- # of focus group

Year	Actual
2014	2

Output #6

Output Measure

- # of work with media

Year	Actual
2014	7

Output #7

Output Measure

- # of articles in newsletter, magazines, and newspapers

Year	Actual
2014	6

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 physical activity knowledge and skills, especially as it pertains to maintaining mental and physical well-being, prevention of chronic disease, and improving overall health
3	# of participants who have been exposed to health and nutrition education for chronic disease prevention
4	# of children on Guam will practice healthy eating patterns
5	# of families, children, and youth have access to healthy food

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5101

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The data from the Guam Department of Public Health and Social Services, Office of Vital Statistics continue to indicate that high numbers of chronic and preventable diseases such as type 2 diabetes, cardiovascular disease and certain types of cancer are the primary causes of death on Guam. We continue to see the need for preventive nutrition 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; 5) Use of SPARK (sports, play, and active recreation for kids) for elementary schools, and Fun with New Foods and Mighty Moves curriculum for pre-schools; 6) Healthy Village Weight Initiative, Role Model Training, mini-grant program that supported healthy-living initiatives, and 7) 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 5,101 adults and children had been exposed to nutrition, exercise, and obesity prevention information.

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
724	Healthy Lifestyle
802	Human Development and Family Well-Being
805	Community Institutions and Social Services

Outcome #2

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 Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5690

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
Physical 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; 5) Use of SPARK (sports, play, and active recreation for kids) for elementary schools, and Fun with New Foods and Mighty Moves curriculum for pre-schools; 6) Healthy Village Weight Initiative, Role Model Training, mini-grant program that supported healthy-living initiatives.

Results
5690 individuals were exposed to physical activity knowledge and skills.

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
724	Healthy Lifestyle
802	Human Development and Family Well-Being
805	Community Institutions and Social Services

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	5690

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; 5) Use of SPARK (sports, play, and active recreation for kids) for elementary schools, and Fun with New Foods and Mighty Moves curriculum for pre-schools; 6) Healthy Village Weight Initiative, Role Model Training, mini-grant program that supported healthy-

living initiatives, and 7) 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 sampling of EFNEP youth data, for example, of 475 youth (of the total of 5690 exposures) indicates that about 93% of young participants adopted and practiced one or more food selection behaviors consistent with federal dietary guideline recommendations.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
805	Community Institutions and Social Services

Outcome #4

1. Outcome Measures

# of children on Guam will practice healthy eating patterns

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

# of families, children, and youth have access to healthy food

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 (Vacant nutrition faculty position.)

Brief Explanation

In hindsight, being able to track our last two goals: number of children on Guam will practice healthy eating patterns, and number of families, children, and youth have access to healthy food, seems to be out of our capability and purview. What we realize we can do is

inform, educate, and demonstrate healthy behaviors and food choices.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Our major nutrition education effort is EFNEP. EFNEP does not really partake in evaluative studies of behavioral change. We are, however, participating in the USDA-NIFA competitively-funded Children's Healthy Living (CHL) Program. This program is measuring the impacts of educational intervention and will be reported under that program.

Key Items of Evaluation

Extension professionals and researchers have been bringing together different disciplines in the college and the community to shine a light on the issue of childhood, and adult, obesity in Guam. Naturally, it has take a while to collect data, create educational materials, and reorient the team to focus on a larger, inter-connected issue. We will continue to move along this pathway, with our partners, as getting a handle on health issues in Guam is one of our college priorities.

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	Diseases 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: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	3.0	0.0	0.0	0.0
Actual Paid	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**
176573	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
88287	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The University of Guam Cooperative Extension Service's Plant Health and Pest Management (PHPM) group performed educational outreach to the public sector, private sector, and government agencies. Subject areas covered included 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).
In April of 2014 the PHPM group received a $48,000 Western Sustainable Research and Education grant to study a new outbreak of a virus disease that causes severe leaf curling and stunting of tomato. The causal agent was determined to be a novel genotype of whitefly transmitted begomovirus, with 90% sequence identity to Ageratum yellow vein virus (AYVV). In August 2014, farm trials were begun to compare 17commercial tomato varieties for virus resistance and production suitability. Five varieties with grape, cherry, globe, or oval fruit types were deemed suitable for Guam, based on their strong virus resistance, high yield and low levels of cracked and unmarketable fruits.
The PHPM group continued its research and outreach education on Guam's declining (dying) ironwood (Casuarina equisetifolia) trees through a USDA Forestry Service grant. In 2014, University of Guam plant pathology students received education and training on ironwood tree decline. The students reenacted a previous experiment that determined a causal agent of decline. First, using isolates of pathogenic bacterium Ralstonia solanacearum that was previously isolated from declining ironwood trees, the students infected healthy ironwood tree seedlings. Two months later they successfully isolated the bacterium from the seedlings. Also in 2014, University of Guam Pest Management students received education and training on ironwood tree decline. The students successfully baited for subterranean termites on ironwood tree roots, which may be contributing factor in ironwood tree decline.
Members of the PHPM group continued to service Guam and other Micronesian islands by identifying insect pests and recommending methods for mitigating the damage they cause. Much of the time was spent doing project management for the Guam Coconut Rhinoceros Beetle project which is funded by multiple grants from USDA-APHIS, US Forest Service, and the Government of Guam. During 2014, it was discovered that a local fishing net called "Tekken" worked remarkably well for trapping Rhino Beetles. Current research shows that compost piles are highly attractive to the beetles, functioning as a trap in a given area. Large piles of organic matter have been covered with tekken at the UOG Agriculture Experiment Station in Yigo and on the UOG campus in Mangilao, catching 25 times as many beetles as standard pheromone traps. It should be possible to cover very large breeding sites across Guam efficiently and relatively affordably with little effort.

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 not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5712	14800	1287	1900

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

Patent Applications Submitted

Year: 2014

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	1	4	5

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of research papers

Year	Actual
2014	6

Output #2

Output Measure

- # of research citations

Year	Actual
2014	94

Output #3

Output Measure

- # of extension fact sheets or articles

Year	Actual
2014	8

Output #4

Output Measure

- # of workshops/trainings/classes

Year	Actual
2014	23

Output #5

Output Measure

- # of brochures

Year	Actual
2014	8

Output #6

Output Measure

- # of research or new technology reports

Year	Actual
2014	24

Output #7

Output Measure

- # of one-on-one interventions

Year	Actual
2014	1963

Output #8

Output Measure

- # of surveys

Year	Actual
2014	2

Output #9

Output Measure

- # of focus groups

Year	Actual
2014	1

Output #10

Output Measure

- # of news media activities (TV and radio)

Year	Actual
2014	7

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
2014	100

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
Three workshops were held on insect identification, Coconut Rhinoceros Beetle identification, and invasive insect species.

Results
One hundred percent of participants showed a gain in knowledge.

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
2014	100

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 is essential to insure that proper management practices for IPM and pesticide application are employed. These practices lead to improved plant health and crop yield, and reduce negative impacts on human and wildlife health and the environment.

What has been done
Two classes and one workshop were held on the identification of plant diseases.

Results
One hundred percent of participants showed a gain in knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
212	Diseases 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
2014	0

3c. Qualitative Outcome or Impact Statement

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

What has been done
A workshop was held on weed identification.

Results
One hundred percent of participants showed a gain in knowledge.

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
2014	100

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
A class was held on pesticides and application.

Results
One hundred percent of participants showed a gain in knowledge.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

% of participants reducing indiscriminate use of chemical pesticides

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	100

3c. Qualitative Outcome or Impact Statement

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

What has been done
A class was held on the indiscriminate use of chemical pesticides.

Results
One hundred percent of participants showed a gain in knowledge.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

% of participants adopting some established IPM practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	100

3c. Qualitative Outcome or Impact Statement

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

What has been done
A Class was held on Established IPM practices.

Results
One hundred percent of participants showed a gain in knowledge.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)

Brief Explanation

Tropical storms in the region affected crop trials.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluation results were a combined grade of ninety five percent.

Key Items of Evaluation

Evaluation is based on internal review of the Plant Health and Pest Management group, stakeholder input, and pre/post testing.

V(A). Planned Program (Summary)

Program # 6

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	10%			
104	Protect Soil from Harmful Effects of Natural Elements	5%			
125	Agroforestry	5%			
205	Plant Management Systems	20%			
302	Nutrient Utilization in Animals	10%			
307	Animal Management Systems	20%			
403	Waste Disposal, Recycling, and Reuse	3%			
601	Economics of Agricultural Production and Farm Management	20%			
608	Community Resource Planning and Development	2%			
806	Youth Development	5%			
	Total	100%			

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	2.3	0.0	0.0	0.0
Actual Paid	3.3	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
194231	0	0	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
97115	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

This plan of work is about developing local food production for our island communities. We addressed animal and plant production issues by networking with; the agricultural industry supply, professional support (government and private), and demand sectors through collaborative needs assessments, program planning efforts, curriculum development, demonstrations and public trainings. We have taken the approach that true food security in an island context involves engaging both small subsistence and home plots as well as developing a vigorous import substitution effort in terms of our food supply with our commercial producers and distributors. So we worked to develop home and community produced food as alternatives to imported food through farm, home, farming/gardening, and animal production programs thus increasing local food diversity and self reliance.

In the past year we conducted activities such as:

1. Conducted applied research and program demonstrations on campus, local farms and partner sites.

2. Conducted training workshops for local and regional animal, fruit, vegetable and aquaculture producers at campus and community facilities and on program demonstration sites. We also provided support to partner agency outreach efforts (field days and workshops) on farms and other venues.

3. Conducted field tours for animal producers, fruit and vegetable producers, youth groups, home gardeners, and visiting agricultural professionals on the program demonstration sites.
4. Strategic planning meetings were held with agriculture support agencies, farmer organizations, non government agencies/non profits, agricultural consultants and island leaders involved with food. We identified priorities for program development, grant funding and partnership building to address these priorities. Funded grants and partnership MOU's are a planned output of this POW, demonstrating capacity building through training, collaborative planning and presentation of needs.
5. To support partner agencies efforts and increase collaboration: a workshop was held on government incentive programs and funding opportunities for farmers and the community, a workshop was held on writing grants to address needs of the agriculture community, and a subregional conference was held on island agriculture infrastructure.
6. To increase the skills of island agricultural and food professionals we held shared curriculum development meetings and then train the trainer workshops on program curriculum prior to holding workshops at the demonstration sites for the general public.

2. Brief description of the target audience

Primary local clients will include former, existing and potential new plant and animal producers including home, small-scale subsistence level and home, school and community gardeners. Over the past decade, the Chamorro Land Trust Commission signed 1,000+ new agriculture land leases and the DoAg identified 300+ existing full and part time commercial and subsistence agricultural producers. Many producers possess limited resources and desperately need education and technical support programs. Additionally, village based needs assessments indicate that there are hundreds if not thousands of local homeowners and community groups that want training in sustainable food production practices so this effort is being adapted to include them. Also identified, is a strong desire among many of our community leaders to start community gardens so this is now one target group.

The secondary target audience are the agricultural and food professional (both plant and animal) communities on Guam. This program is a collaborative effort to build capacity and enhance performance of Guam's Cooperative Extension Ag professionals and partner agencies and groups so they can better identify issues and mobilize resources to provide broader technical assistance. The Micronesian Chefs Association and Guam Community College Culinary program faculty are strong supporters of this program's efforts. Ag professionals with partner land grant programs throughout the American Affiliated Pacific have requested assistance. Regional workshops will address these requests.

The tertiary target group is island youth and youth program professionals. The youth target population includes students, youth interested in entrepreneurial agricultural activities, and clients of mayors' offices interested in small scale and community agricultural activities.

A fourth audience is the University of Guam agricultural student cohort. The demonstration farms are utilized as a laboratory and classroom for students enrolled in agriculture courses (Introduction to Agriculture and Introduction to Animal Science, Introduction to Aquaculture and other courses).

3. How was eXtension used?

eXtension was used to identify program materials developed in other states that can be used in our education outreach efforts. We took the approach that there is no need to reinvent the wheel, where we could use another state's publication as resource materials for our clients we did so. In other cases we utilized these materials as information in developing Guam specific outreach materials.

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	5765	17300	595	1000

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

Patent Applications Submitted

Year:	2014
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- # of workshops or conferences

Year	Actual
2014	15

Output #2

Output Measure

- # of applied research and best management practice demonstrations conducted on farms or institutional sites

Year	Actual
2014	6

Output #3

Output Measure

- # of one to one contacts

Year	Actual
2014	1310

Output #4

Output Measure

- # of popular articles in newsletters, magazines and newspapers

Year	Actual
2014	3

Output #5

Output Measure

- # of extension publications and presentations (fact sheets, white papers, web-based learning modules, etc.)

Year	Actual
2014	6

Output #6

Output Measure

- # of research and extension advisory councils and boards

Year	Actual
2014	8

Output #7

Output Measure

- # of workshop curriculum developed and piloted with agricultural professionals

Year	Actual
2014	18

Output #8

Output Measure

- # adults participating in food system knowledge and skill enhancement programs

Year	Actual
2014	465

Output #9

Output Measure

- # of either: Memorandums of Understanding, cooperative agreements, partnerships, or shared demonstrations initiated or continued

Year	Actual
2014	8

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	# of program participants indicating adoption of recommended program practices, activities, and technology
2	# of producers practicing regular replacements of broodstocks (medium term)
3	# of producers decreasing imported ag production inputs
4	# of program participants indicating improved knowledge and skills of recommended practices
5	# of community strategic plans and policies implemented as a result of this program
6	# of 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 program participants indicating adoption of recommended program practices, activities, and technology

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	280

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In many cases we provide training and information but never know if it is used as there is little site visits for follow up. We can only report on what we are told or actually have the chance to observe.

What has been done
When we conduct workshops we include questions asking if the individual now plans on changing their practices or try something new. We also not on repeat farm visits if recommendations were followed.

Results
Roughly 60% of the workshop participants indicate on the postworkshop evaluations that they will change their behavior or try something new based on our recommendations. This translates into into roughly 280 people changing their behavior or trying one of the recommendations.

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
302	Nutrient Utilization in Animals
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 #2

1. Outcome Measures

# of producers practicing regular replacements of broodstocks (medium term)

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

# of producers decreasing imported ag production inputs

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	101

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Soil ammendments like imported manure, compost, potting soil and other sources of organic are expnesive inputs to farms, gardens and container production. These imported materials are also a source of invasive species. We are working to develop local sources of organic matter for our soils.

What has been done
A "Green waste to farms and gardens, not the landfill" demonstrations program was run over the past several years.

Also promotion of using shredded paper and cardboard as mulch has been a key workshop topic.

Results
In this reporting period 4 distribution days and several delivery to community/school garden sites were conducted. Over 61 indviduals picked up at least 1.5 cubic yards of mulch (some multiple

loads), and 18 community/school garden sites received deliveries (of 1.5 to 8 cubic yards), at a average cost of $20 a cubic yard. This is less than the cost of a bag of sunshine mix or 3 bags of chicken manure that is imported. The demand for local mulch and compost was proven to be huge. Local entrepreneurs are now taking up this enterprise and running with it.

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
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development

Outcome #4

1. Outcome Measures

# of program participants indicating improved knowledge and skills of recommended practices

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	350

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is difficult to know how much actual knowledge is gained from the one on one contacts so we are not reporting on this this year. But in our workshops we we ask them about knowledge gained.

What has been done
On the evaluations we askto assess the level of their knowledge on the target subject at the beginning of the workshop. We also as them to assess their knowledge at the end of the

workshop. We get an approximate average of 75% of the participants indicating a knowledge gain.

Results
for the workshops this translates into around 450 individuals. But these numbers are actually much higher because of the thousands we provide one on one training that we didn't assess the gain in knowledge on.

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
302	Nutrient Utilization in Animals
307	Animal Management Systems
403	Waste Disposal, Recycling, and Reuse
601	Economics of Agricultural Production and Farm Management
806	Youth Development

Outcome #5

1. Outcome Measures

# of community strategic plans and policies implemented as a result of this program

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Cooperative Farmers Association of Guam (Co-Op) lacked funds for key coop/market manager position, farmers market, supporting infrastructure to promote buying of local produce.

What has been done

Based on the strategic plan developed for them by University of Guam Cooperative Extension (UOG CES) two laws were created in previous years that: Awarded the Co-Op 180,000 to hire market manager and buy key equipment and second law to fund the building of a new Farmers Market Facility. During this year UOG CES assisted the Co-Op in internal structural issues and in developing plans to support these two effort.

Results
Co-Op is advertising for Co-OP manager/market manager and preparing grant for new facility. This is the result of one strategic partnership between UOG CES, the Farmers and the legislature.

UOG CES has also partnered with the NonCommuncable Disease Consortium and the Guam Department of Education to set up school gardens. The purpose is to increase elementary school childrens' familiarity with fruits and vegetables.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development
806	Youth Development

Outcome #6

1. Outcome Measures

# of 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
2014	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Strong desire for school and community gardens. Teachers and others promoting this do not have knowledge of gardening practices.

What has been done

New Farmer Curriculum was adapted to an 8 module (2 hours each) gardening curriculum. Extension personnel in 4H, Nutrition and childhood obesity prevention were trained in use of this curriculum.

Results
These trained teachers to use these materials through workshops. Now many school teachers are using these materials as well. There are now many school and home gardens started by people trained in this new curriculum.

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
403	Waste Disposal, Recycling, and Reuse
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.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Other (Change in government leaders)

Brief Explanation

The change in government regulation (amended importation law on cattle to Guam) can now alleviate the issue of cattle inbreeding. Local producers can now buy cattle broodstocks from Saipan to cross-breed with the local cattle population.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluations were conducted at all workshops.
Most indicate both knowledge and attitude/behavior change.

Key Items of Evaluation

Strong interest in more value added procession workshops.
Farmers want more produce marketing alternatives (selling is more difficult than growing for them).
Want more programs to provide low cost local organic matter for soil amendments.

Farmers would like more new planting materials/recommendations.

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
0	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
0	Number of new crop varieties, animal breeds, and genotypes whit climate adaptive traits.
Global Food Security and Hunger (Outcome 1, Indicator 4.a)	
0	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
Global Food Security and Hunger (Outcome 2, Indicator 1)	
0	Number of new or improved innovations developed for food enterprises.
Food Safety (Outcome 1, Indicator 1)	
0	Number of viable technologies developed or modified for the detection and
Sustainable Energy (Outcome 3, Indicator 2)	
0	Number of farmers who adopted a dedicated bioenergy crop
Sustainable Energy (Outcome 3, Indicator 4)	
0	Tons of feedstocks delivered.