

Annual Report for Accomplishments and Results FY-2004

UNIVERSITY OF GUAM
COOPERATIVE EXTENSION
SERVICE

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I. Planned Programs –

Executive Summary

The 2004 period reflected a downward spiral of Guam's economy marked by natural disasters and overall financial crisis posturing of the Government of Guam. This includes the territory's recouping strategies from the resulting challenges such as the 2003 SARS outbreak, terrorism concerns, and the successive typhoons in 2003-2004 and the overall impact of the depressed Asian market economies. All this adds to a lagging economic recovery, saddling defense spending, and tourism to produce more revenues.

Despite the increasing reliance in tourism and defense economic strategies, the region's economic and political challenges spur unique opportunities for Guam. Increased military build-up on the island and the region comes with strong expectation for added investment in infrastructure and job creation for bearing military presence. Guam's tourism target market continues to mature leading to marketing non-traditional markets and innovative ways to increase visitor arrivals. All this speaks to the need for developing strategic economic development and land-use plans. This continues to be a challenge for the local government and the community.

With shifting demographics most noted is the Micronesian migrant household in Guam from the last 2003 census showed 10,963 of which over 9,000 are impact migrants. This is both a local and federal issue as federal funding share relies on the number of impact migrants staying on Guam. Compact-impact programming continues to be a local and regional issues bringing a mixed of challenges and opportunities for Extension programming.

According to the 2000 census, Guam's population is 154,805. About forty percent of the population is under 20 years old. Twenty-three percent of the population lives in poverty. The ethnic background of the island includes Chamorro (native islanders), Filipinos, Caucasians (including members of the U.S. Armed Forces and their dependents), other islanders (Micronesians and Palauans) and Asians (Koreans, Japanese and Chinese). The ethnic composition includes 37% Chamorro, 27% Filipino, 7% Caucasian and 29% others. Our civil rights clientele target for the goal areas reflects the following percentages for clientele serviced:

- 56% Chamorro (Indigenous native population)
- 21% Filipino
- 3% White
- 11% Micronesian
- 5% Asian
- 4% Other

Despite all these internal and external reasons, the island community resiliency continues to persist. The community however, will not be the same as the University of Guam's Extension programming reaffirms the same issues recognizing a gradual shift from the traditional agricultural development towards increased community based programming. Health/nutrition, family/youth, community, and economic development were key concerns and issues identified by stakeholders. This reporting period becomes a benchmarking phase for the territory.

The business community needs for a trained and skilled workforce and the similar demand for a more responsive and efficient and cost-effective government are continuing priorities. Meeting these priorities is necessary if Guam will be competitive to meet the expected unprecedented opportunities of increased military build-up and rebounding Asian market economies

Extension's commitment to the island community and stakeholders reflect the current program areas:

- Agriculture and Natural Resources (ANR)
 - Agricultural competitiveness; Small Farm Viability, Niche Markets, Value-Added and Invasive Species
- Families, 4-H, Food and Nutrition (F4HFN)
 - Youth Development/4-H
 - Human Health; Human Nutrition; Food Safety, Food Resource Management
- Economics and Community Systems (ECS)
 - Community Resource Development
 - Consumer Management
 - Multi-cultural and Diversity Issues
 - Home Safety

The 2002 Guam Agricultural Census showed a 23% decrease or about 153 farmers from the previous 201 total farmers reporting in 1998. There has been a confluence of events both by farmers and by Government agencies that have greatly influenced the way agriculture exists today. Issues such as fragmented agricultural farm programs, disaster assistance/crop insurance, and economic viability of farm enterprises, environmental stewardship, and technical assistance represent core themes expressed by stakeholders. These core issues are not new, and points to the need to set priorities and promote more collaborative and integrative that support community economic development. This includes capacity-building investments in promoting agricultural enterprises through entrepreneurial education, careers in agricultural and food science. The University's Multi-cultural Scholars program is one success story showing this commitment with two graduating scholars in the field of study of agriculture and consumer family sciences in 2004.

Twenty-two farmers agreed to support the strategy of initializing the Guam Producers Association that serves as the body for organizing a Guam Cooperative. By leveraging and integrating agricultural programs, and grants, we effectively promote farm programs and need for further collaboration. Programs such as the Chamorro Agricultural land lease, Agricultural Development Fund and Agricultural water rates provide agricultural incentives.

Aquaculture development is the bright spot in this reporting period as integration and educational materials generated supported curriculum and training for (15) participants in learning aquaculture as a viable entrepreneurial enterprise. This includes two significant industry linkages to promote a Guam Ornamental Fish Show and a SARE grant technical support.

Extension Value-added work efforts include the development of at least three technical reports for processing and storage of Noni (*Morinda citrifolia*) products. In related value-added projects, Extension's "Tropical Fruit" sampler venue continues to be a favorite resulting in the development of six-product recipes for both cookies and smoothies. Every year over a 1,000 participants, joined in the various university projects and exhibits. More than 500 schoolchildren participated in the "Tropical Fruit" sampler.

Progress in the Invasive species work effort reported conducting 10 invasive species survey throughout Micronesia and resulting in the identification of six new insect pests detected on Guam. This includes technical training for 20 plant and pest quarantine officers; this training was in collaboration with the Secretariat of the Pacific Communities.

Promoting a secure and safe food system and a healthy and well-nourished population, relies on our current food safety work efforts strengthening program content of food safety outreach. Food safety programming reported 120 individuals participating in ten food safety seminars held in the villages.

Human Health, Human Nutrition and Food Resource Management continue to report strong recruitment in both the youth and adult areas. About 102 families participated in non-formal nutrition education lessons. Over 2,225 school-aged children completed various nutrition lessons and health education topics. EFNEP programming continues to be the anchor Extension based program under the family nutrition.

Program strategies for enhanced economic opportunity and quality of life include technical help in needs assessment training and youth development programming using the 4-H youth development life skills modeling. 4-H based youth programming continue with existing collaborators and partners engaging over 1,451 youths. The 2004 period also marks the transition into the military base community working directly with 30 military families and engaging over 105 youths.

The 2004 February stakeholder retreat and the August and December 2004 Appreciative Inquiry (AI) technique needs assessment reaffirmed the focus areas for promoting goal areas 1, 2, 3, and 5. One example is extending technical training in needs assessments for 14 schools in designing community-based programs using the (AI) needs assessment asset based technique. This includes related work effort in community mobilization working with internal and external public and private partnerships.

Within the context of community development, Extension's technical assistance center carried most of community development and capacity building programming during this reporting period. This resulted in providing baseline information and starting critical data collection projects important for economic data sets and strategic planning for collaborators and stakeholders. The 2004 period represented a transitory phase for the University community as well as the increased role of the University Extension program in engaging the entire university aligns its land grant mission in meeting the evolving needs of the University and island community through our research and applied programs.

Crisis counseling outreach was the significant work effort through the collaborative model for emotional recovery disaster relief. This was a multi-agency work effort with community partnerships reaching over 2,521 households, and addressing the needs of 27,475 individuals. This effort provided an opportunity to pilot the crisis counselor initiative for future disaster recovery work.

The University's reorganization in August 1, 2003 institutional reshaping and guiding strategic initiatives created a new arm of the University, the office of Vice-President of University and Community Engagement and consolidated the Agriculture and Life Sciences programs within the newly created College of Natural and Applied Sciences (CNAS). The programs of Extension were embedded within the Office of University and Community Engagement designed to be inclusive of all the tripartite functions of research, extension and teaching. The Directorship remained with the Office of Vice-President of University and Community Engagement.

The University's land grant mission provides the leveraging point for building valued partnership with public and private sector stakeholders and remains the channel for bringing improvement of economic, environmental, and social conditions of the people of Guam and the Western Pacific by providing creative and integrated research, education and extension programs through the expressed goal areas of AREERA.

The following accomplishment reports in section II. are selected highlights of the University of Guam Cooperative Extension Service for FY 2004 report.

II. Report of Accomplishments

Goal 1: An Agricultural System that is Highly Competitive in the Global Economy.

Executive Summary

Growers of fresh local produce faced severe competition from the U.S. mainland and Asia. Local fruits and vegetables account for about 80 percent of the value of the agricultural industry on Guam, but more than 90 percent of Guam's food supply continues to be imported from U.S. West Coast and Asian wholesale markets. Imported produce has several advantages over locally grown produce. The supply of imported produce is reliable, the product is graded and consistent in maturity and quality, and importers can receive the produce directly when it arrives on island. Locally grown produce, however, offers benefits imported food does not. Local produce is often fresher than imported produce; there are little or no shipping costs. Many of the local fruits and vegetables are cultivars or crops that are not commonly available on the U.S. mainland and are tailored to the tastes of Guam's Asian and Pacific Islander population. In addition, local produce does not create extra packaging material that will add to the island's waste stream. A three-pronged strategy to encourage local agriculture on Guam is under way. First, researchers continue to investigate new cultivars and crops for various uses. Second, researchers are finding and imposing disease and insect control in crop and ornamental plants which has the potential to reduce pesticide inputs when carried out by farmers at large. Third, extension agents target their efforts on educating stakeholder on agricultural developments to finding out about financial support opportunities.

Key Theme: Agricultural Competitiveness

Education in General Food and Agricultural Sciences to Develop a Tropical Agricultural Product Market on Guam and Micronesia

a. Brief Description:

The Multicultural Scholars Program prepares Scholars for a career in agricultural food production and food processing. In Fall 2004, five Scholars received \$2,625 scholarship for undergraduate studies in the Higher Education Multicultural Scholars Program in the College of Natural and Applied Sciences, University of Guam. These Scholars are one freshman, two sophomores, and two seniors. Their ethnicities are three Chamorro, one Asian/Caucasian, and Asian/Eurasian.

b. Impact/accomplishment:

In December 2004, two scholars graduated with a Bachelors degree in Agricultural Sciences and Consumer Family Sciences. This includes six student seminars and discussion forums around local food industries, scientific methods, and technical laboratory. This provided an opportunity for other students to increase their knowledge in general agriculture and food sciences at the University of Guam and in the Western Pacific.

Source of Funds—Smith-Lever and CSREES-USDA Higher Education Multicultural Scholars Program Grant

Scope of Impact—State Specific

Key Theme: Commercial Aquaculture Development

Aquaculture Development

a. Brief Description:

Aquaculture of foodfish has been the mainstay for Guam. Growth of the industry has been limited by the lack of diversity in foodfish and available local sources of seed stock. Producers have been reliant on foreign sources of fish fry and shrimp post larvae. Local production of seed stock has been limited to marine shrimp post larvae. Diversification has been sought in Guam's aquaculture industry. Tilapia producers have been forced to import seed stock to stock their ponds. This constant importation places the industry at risk for introducing diseases that may harm the industry and natural environment.

Development of a training program started in 2003 continues. The "Aquaculture Professional Certification" (AQUAPRO) is a seven-module curriculum designed to provide knowledge and experiential training in (1) General Principles of Commercial Aquaculture Production, (2) The Business of Aquaculture – Business Planning and Economics, (3) Large-Scale Commercial Aquaculture Production (4) Aquaculture in Recirculating Tank Systems, (5) Hatchery Production of High Quality Tilapia Fry, (6) Ornamental Aquaculture – Production of Freshwater Aquarium Fishes, (7) Alternative Aquaculture Opportunities.

b. Impact/accomplishment

So far, three modules have been completed and implemented. This training provides links between funding agencies and knowledgeable or experienced applicants. 15 participants completed the 80-hour module "General principles of commercial aquaculture production". The core of these participants are youth residents of Sanctuary, Inc. a home for troubled teens. One new full-time farmer also took part in. These participants and others have expressed interest in completing many or all the modules for certification as an Aquaculture Professional. A grant for Sanctuary was secured to continue these trainings from the Guam Department of Labor.

Source of Funds—CSREES, Guam Department of Labor & Agency for Human Resources Development (AHRD)

Scope of Impact— State Specific

Key theme: Small Farm ViabilityFarmers Participate in Organizing Producer Cooperatives Training

a. Brief description:

Organizing farm groups through associations or producer cooperatives provide certain benefits in times of natural disasters. These benefits are related to accurate farm reporting and documenting the extent of damages, processing of farm benefits, and participating and being eligible for farm disaster aid. The ability of both the Cooperative Extension and the Department of Agriculture to service farmers is limited based on the one-to-one approach employed. This need to organize producers continues to be an essential agricultural issue aligned to organizational efforts, data collection and coordinated marketing. The University of Guam Cooperative Extension Service and the Department of Agriculture work closely together to sustain an agricultural industry.

The latest 2002 Guam Agricultural Census showed a 23% decrease or about 153 farmers from the previous 201 total farmers reporting in 1998. Similarly, the total acreage decreased from 2,144 in 1998 to 1,648 in 2002. In 1998, a total market value of \$4.3 million agricultural products sold on Guam compared to the 2002 market value of \$4.2 million, which remained stable. In 1998, of the 201 farms, 74 farmers reported \$10,000 or more of market value of agricultural products sold compared to 2002, 153 farms 68 farmers reported \$10,000 or more.

The last Producer Cooperative existed in the 1960s and many tries to organize have failed. This need was revisited in outreach forums co-sponsored by the Guam Department of Agriculture and the University of Guam Cooperative Extension Service with farm groups. A mail-out campaign was launched with coordinated efforts between the Department of Agriculture and the University of Guam Cooperative Extension Service.

b. Impact/accomplishment

A Producer Cooperative Toolkit for farmers and producers was produced. 22 farmers continue to support the current Producer Association. This includes an updated farm clientele listing. The technical packet is a comprehensive resource guide on how to organize a cooperative and provides background information on different forms of cooperatives. Participants developed an awareness of the importance of organizing a cooperative.

c. Source of funding — Smith-Lever and USDA Cooperative Development

d. Scope of impact— State specific

Key theme: Niche MarketsAwareness of Freshwater Ornamental Aquaculture

a. Brief description

Ornamental aquaculture provides a proven business enterprise that is suitable for small operations. The aquaculture industry in Guam has undergone extreme fluctuations. Based on production of food-fish alone, the industry relies on large capital and land investment to be an economical participant. Other areas of aquaculture can be profitable and do not require as large an investment. One of these is to produce freshwater ornamental fish. This market is chiefly for export, with small domestic markets. Major competitors are from Asia. However, there are advantages to locating in Guam. As a U.S. territory, there are less controls to shipping to the U.S. Guam's closeness to Asia also allows for exports to Asia and sets up Guam as a transshipment point for fish from Asia. The world ornamental fish market is a multi-billion dollar market. In 1998, the U.S. alone imported over \$67 million. The Internet has opened a new avenue for marketing on a small or large-scale.

b. Impact/accomplishment

A collaborative partnership with two private businesses increased the awareness of the ornamental fish industry beyond the pet store experience. Local farmers cooperated with Extension to submit an Agriculture Professional/Farmer Grant to Western SARE entitled "Combining Ornamental Fish and Aquarium Plants in the Aquaponic Components of an Integrated Tilapia and Taro Recirculating Aquaculture System. A five member planning team has been formed for the "Guam Ornamental Fish Show and Competition" event.

c. Source of funding — Smith-Lever and Western SARE

d. Scope of impact — State Specific

Key theme: Adding Value to New and Old Agricultural ProductsEvaluation of Processing and Storage May Improve the Quality of Commercial Noni Products.

a. Brief description of activity:

The bioavailability of biological components of noni juice and powders was evaluated by the total antioxidant capacity (TAC). The fresh noni juice was prepared by centrifuging noni puree. The fermented noni juice was dripped from noni fruits in sealed pitchers. Noni powders were prepared by dehydration of noni puree with hot air. Noni juice and powders were stored at room temperature, refrigerator, and freezer storage of noni juice in a freezer retains much more bioactive components than in refrigerator and at room temperature.

b. Impact/ accomplishment statement

A Noni product guideline technical report was developed for noni product processors in the Pacific Islands. Also, two papers was developed entitled: (1) "Total antioxidant capacity of noni (*Morinda Citrifolia*) products as affected by processing and storage" (presented at the 5th International Conference and Exhibition on Nutraceutical and Functional Foods in San Francisco, California Nov 7-10, 2004) and (2) "Bioavailability of biological components of Noni (*Morinda Citrifolia*) juice and powders as affected by processing and storage"

c. Source of funding: — Smith-Lever and USDA CSREES Special Project TSTAR

d. Scope of impact: — State Specific

Key theme: Adding Value to New and Old Agricultural Products

Local Tropical Fruit Samplers

a. Brief description of activity:

Extension's "Sampler Venue" continues to be a crowd favorite and promotes the use of local tropical fruits and vegetables for value added food marketing. This is a demonstration format to show processing and use of local fruits and agricultural products for farmers and food processors. Smoothie and ice cream samplers demonstrated product value-added and versatility.

b. Impact/ accomplishment statement

This 2004 Sampler event produced two-coconut cookie receipts for a local farmer. Four smoothie recipes were developed from local papaya, sour sop, watermelon, and pineapple products. In addition, two ice cream recipes using papaya and noni ingredients were used as demonstration samplers to more than 500 schoolchildren from elementary, middle and high Schools

c. Source of funding: — Smith-Lever

d. Scope of impact: — State Specific

Key theme: Invasive SpeciesSurvey of Invasive Insects of Micronesia

a. Brief description of activity:

There have been no comprehensive insect surveys in Micronesia for many years. As a result, pest records do not accurately reflect the fauna, nor describe the animal/plant – arthropod relationship existing within Micronesia. Part of the reason for the relatively limited biocontrol activities in the region is the lack of knowledge on which natural enemies would be best suited for release in the humid tropical islands of Micronesia. This project uses a series of systematic evaluation of the invasive pests and surveys of possible biocontrol agents. These surveys and tools provide estimations of the risk/benefit associated with the particular host – natural enemy. This allows better use of the limited funds available for pest mitigation by targeting systems with the highest possibility for success. Arrangements are being made to provide project collaborators with access to the CABI Crop Protection Compendium. This tool will help improve pest identification skills within Micronesia.

b. Impact/accomplishment statement

During 2004, (10) invasive insect surveys were performed throughout Micronesia (two islands in the CNMI, four islands in Palau, and four islands in Yap). In addition, through collaboration with the Secretariat of Pacific Communities, one training workshop was held for plant pest quarantine officers throughout Micronesia. This work effort also resulted in identifying six new insect pests which were detected on Guam. The most serious of these is the Asian cycad scale, *Aulacaspis yasumatsui*. A severe infestation of this scale insect threatens the survival of Guam's endemic cycad, *Cycas micronesica*.

c. Source of funding — USDA CSREES Special Project TSTAR, Smith-Lever

d. Scope of impact — Multi-state integrated research and extension GU ROP NM FM RMI

National Goal 2: A Safe and Secure Food System

Executive Summary

The U.S. territory of Guam is an island located in the Western Pacific with a population of 150,000 people. Every year Guam Public Health Department reports at least 50 outbreaks and 150 cases of foodborne diseases. The frequency of foodborne illnesses on Guam is much higher than that in the United States mainland. The tropical climate and variety of ethnic foods enhance the risk of foodborne illness. Lack of food safety knowledge and poor food handling practices are the major reasons for the high rate of foodborne disease on Guam. The goal of the project is to provide food safety education to Guam communities and reduce the risk of foodborne illness on Guam.

Key issues addressed in FY 2004 were:

Foodborne Pathogen Protection

Key theme: Food Safety

Food Safety Education Can Prevent and Reduce Foodborne Illness on Guam

a. Brief description:

The frequency of foodborne illnesses on Guam is much higher than that in the United States mainland. The tropical climate and variety of ethnic foods enhance the risk of foodborne illness. Lack of food safety knowledge and poor food handling practices are major reasons for the high rate of foodborne disease on Guam. The food safety effort builds on promoting food safety education and reducing the risk of foodborne illness on Guam.

b. Impact/accomplishment:

One hundred-twenty participants joined in the (10) food safety seminars. Of the 120, (60) participants took part in a Food Safety post-test with favorable results showing significant increased in overall food safety knowledge and behavior attitudes of participants after seminars. The increase of participants' knowledge in practicing personal hygiene, cooking food adequately, avoiding cross contaminations, and keeping safe temperature influence the people's food safety practice in the communities.

c. Source of funding — Smith-Lever and CSREES-USDA National Integrated Food Safety Initiative Program Grant

d. Scope of impact — State specific

National Goal 3: A Healthy, Well-nourished Population.Executive Summary

Chronic diseases such as diabetes, cardiovascular disease and cancer have been primary causes of death for people on Guam for over 30 years. According to recent data from the Guam Department of Public Health and Social Services — Vital Statistics Office, six out of the ten leading causes of death on Guam are preventable by healthful lifestyle habits, especially in diet and exercise.

Infant mortality and low birth weight rates on Guam are increasing. Smoking and inadequate prenatal care are both known to contribute to these negative birth outcomes. Also, adolescent pregnancy rates are also increasing. Many of these adolescents and adult women do not have insurance coverage, and therefore do not have prenatal care. Guam's recent welfare reform has made access to health care difficult. Guam's performance plan addresses the following areas of concern: (a) the need to increase objective data about nutrient intake in the region, (b) the need to improve nutritional education materials and methods for pregnant and lactating women, teens, adults and children at risk of chronic and communicable disease, and (c) the need to train more professionals in the fields of human nutrition and consumer family sciences.

Highlight:Expanded Food and Nutrition Education Program (EFNEP)

The Guam EFNEP program reached 102 families who completed at least 10 hours of non-formal nutrition education lessons, which promotes improving dietary habits, food safety practices, and food resource management skills. Additionally, 1,191 elementary school-aged children, who completed five lessons of nutrition education topics that include understanding the Food Guide Pyramid; exercise; the importance of eating fruit and vegetables; reading nutrition facts; and choosing healthful snacks, showed an 85% increase knowledge in nutrition education. An additional 1,034 elementary school-aged children were exposed to one lesson on understanding the Food Guide Pyramid and the importance of exercise.

Out of one hundred two (29 men and 79 women) participants in the Adult Guam EFNEP program, 86% showed improvement in two or more nutrition practices including planning meals, making healthy food choices, reading nutrition labels, or feeding children breakfast.

Key issues addressed in Fiscal 2004 were:

Human Health

Human Nutrition

Food Resource Management

Key theme: Human Health

Multidisciplinary Strategies with Community Partners Promotes Healthy Living Among Pacific Islanders

a. Brief description:

The Healthy Living in the Pacific Islands (HLPI) initiative focuses on increasing collaborative and community based strategic planning and programming themed on the Agricultural and Nutrition goals and objectives. HLPI's specific goal is to create healthy people living in healthy communities through a series of objectives that includes increasing the production and consumption of healthy local foods, increasing the knowledge about nutrition, diet and healthy lifestyle, and increasing physical activity and healthy lifestyle behaviors. Work effort continues towards aligning HLPI programming with Extension's nutrition and health programs.

b. Impact/accomplishment:

Ten Health and Nutrition information supplements were developed to include the HLPI Disaster Preparedness Resource Packet: Typhoon Preparation Tips- before the Storm series. One poster session presentation integrating the HLPI framework with community health programming on Tobacco prevention work efforts.

c. Source of Funding — Smith-Lever and Agricultural Development in the American Pacific (ADAP) Program funds

d. Scope of Impact — State Specific

Key theme: Human NutritionExpanded Food and Nutrition Education Program (EFNEP)

a. Brief description

According to recent data from the Guam Department of Public Health and Social Services — Vital Statistics Office, six out of the 10 leading causes of death on Guam are preventable by lifestyle habits, especially diet and exercise. Research from other studies, such as the Guam Youth Risk Behavior Survey, confirm that Guam's youth consume sub-optimal diets and are not physically active. The Guam Behavior Risk Factor Survey, conducted by the Guam DPHSS, show that adults on Guam also have unhealthy diet and lifestyle behaviors. Given the statistics, there is a definite need for education and outreach around nutrition, fitness, general health, and chronic disease prevention.

b. Impact/accomplishment:

Impact on Youth: The Guam EFNEP program reached 102 families, 1,191 elementary school-aged children, who completed five lessons of non-formal nutrition education program to improve dietary habits, food safety practices, and food resource management skills. An additional 1,034 elementary school-aged children were exposed to one lesson of the EFNEP curriculum that delivers the Food Guide Pyramid with emphasis on eating fruits and vegetables as well as exercising daily for better health. Along with the youth clients, we also reported 134 teacher volunteers for the program. Other than our EFNEP clients, the program also displayed nutritional information and distributed materials on annual nutrition related events reporting 2,995 contacts.

98.9% of the one hundred-two adults (29 men and 79 women) in the Guam EFNEP program, showed positive improvements in both food diet recall. Nutrition practices include understanding the daily food allowances from the food guide pyramid, following food safety guidelines, planning meals, making healthy food choices, reading nutrition labels, and feeding children breakfast. From entry readings to exit the percentages increased in lesson delivered showing that at entry only 21% planned meals most of the time and at exit increased to 79%. For those feeding their families healthy meals most of the time at entry read 11% then increased to 60% at exit. 88% of participants show improvements on the food safety sections in regards thawing and storing food properly. Overall, the annual EFNEP survey data showed improvements over the 2003 data; concluding the increase on behavioral changes made a big impact on percentages and positive delivery of the program.

c. Source of Funding — Smith-Lever 3(d) — EFNEP

d. Scope of Impact — State Specific

Key Theme: Food Resource Management

Managing Food Resources

a. Brief description:

As the local, regional, and global economy remains unstable, and as unemployment rates increase, consumers have fewer financial resources to buy food and other basic life needs. The Guam EFNEP program is addressing this current economic challenge by helping Guam residents to not only select and buy food that satisfies nutritional needs, but to manage food resources such as use of limited income to buy food, wise use of food stamps, and use of WIC vouchers.

b. Impact/accomplishment:

Of the One hundred-two (29 men and 79 women) participants, 80% showed improvements in one or more food resource management practices including planning meals, comparing prices, and using grocery lists. 78% of the participants reported they intend to plan meals before shopping, 84% reported plans to shop from a grocery list, 77% plan to compare food items to get the best buy, and most participants plan to develop a family budget to assure they have enough expenditures for food to last until the end of the month.

The EFNEP program participated in six community health fairs sponsored by partners and health coalitions during this reporting period.

c. Source of Funding — Smith-Lever 3(d) — EFNEP

d. Scope of Impact — State Specific

National Goal 5: Enhanced Economic Opportunity and Quality of Life for Americans

Executive Summary

The 2004 reporting represented a challenging time following the aftermath recovery period of two major typhoons. This affected the government's overall ability to provide basic services to the community. Through the University of Guam Cooperative Extension Service and the varied university partnerships with community and local agencies, innovative and program leveraging created opportunities for effective program delivery in disaster programming and outreach. One program involved direct contact with over 9,000 community residents to provide recovery servicing. This included being a key partner in helping to conduct key surveys needed by the Government of Guam. In addition, piloting the Data for Economic and Community Solutions (DECS) evolved setting the stage for the University of Guam Cooperative Extension's Community Development and Capacity building role.

Highlight (1):

Interagency Collaboration Promotes Importance of the University of Guam Cooperative Extension Data for Economic and Community Solutions (DECS)

In 2003, the Government of Guam was unable to compile basic data information, which compromised thousands of dollars. The Guam Department of Labor's inability to initialize the training and hiring of enumerators created an impasse to the census project of the impact of the Compact of the Freely Associated States of Micronesia. The Cooperative Extension Service program, Economic and Community Systems, piloted the University of Guam Cooperative Extension Technical Center, which augmented the data compilation for the local government. Because of the Technical Center, a \$14.2 million grant was secured for the island of Guam.

Building from this work in 2003, FY 2004 built upon the awareness of the need for capacity building and leveraging the abilities and expertise of UOG faculty and resources for community capacity development. The Data for Economic and Community Solutions (DECS) became the program arm for addressing this need.

Highlight (2):

Regaining Emotional Stability the Project Partners in Recovery Outreach (PRO) way...Guam's Collaborative Model

Project PRO provided outreach and group counseling to over 9,000 people severely impacted by the federal declared disaster storm. Funded by a \$1.3 million grant awarded by the Federal Emergency Management Administration, this community outreach crisis counseling program targets specific population groups including public housing, faith-based groups, group shelters, school and work settings and centers. Since the program start, Project Pro Outreach counselors have collectively assisted thousands of people with varying degrees of crisis counseling, consultation education and support groups.

Highlight (3):

4-H life Skills Build Confidence in Youth

The University of Guam Cooperative Extension Service continues to successfully involve youth in its 4-H and Youth Development Programs. During the Fiscal 2004, a total of 1,451 youths participated in nine modules driven programs and completed 69 life skills workshops. Youth participation resulted from a combination of program sustainability, public awareness through media outreach, and by word of mouth. The youths that participated came from eight public schools, six elementary schools and two middle schools; Andersen Air Force Base, Child Development Center and Youth Center, and the 4-H Summer Program.

An essential goal of the program is to conduct mentorship life skills presentations/ workshops to youths grades K-12. The Experiential Learning Model and the Targeting Life Skills Model are both incorporated into the various modules that are used during presentation delivery. These modules are based on learning activities that can be applied to real life situations

Operation Military Kids

Guam's adult population participates in the US Military in generally large numbers per capita. As a result, the current wars and its related impact on Reserve Units who have been called up has taken a toll on many of our islands' young people. To address the potential needs of these youth, State and County Cooperative Extension staff, community agencies, schools, and 4-H Club youth are reaching out to military youth before, during and after their parents are deployed. This outreach effort is called Operation: Military Kids!

With many of the children whose parents are deployed members of the military, their usual support systems are often no longer adequate. Extensive media coverage of on-going military operations creates daily anxiety. These "new" military kids need to connect with other youth in similar situations. They seek friends and adults who can empathize and can help them cope with their new world.

Operation: Military Kids is one way of reaching out to military youth, while also helping them gain some valuable coping and life-skills building on their difficult experience.

Key issues addressed in Fiscal 2004 were:

Consumer Management

Multicultural and Diversity Issues

Home Safety

Youth Development/4-H

Information Technologies

Key theme: Multicultural and Diversity Issues

Interagency Collaboration Promotes Importance of University of Guam Cooperative Extension Technical Assistance Center

a. Brief description

In FY 2004, the Data for Economic and Community Solutions (DECS) became the cross-institutional and inter-agency collaborative arm for community development. A needs assessment process was implemented with the Department of Education Health Educators utilizing the Appreciative Inquiry technique and approach to needs assessment. This strengths-based approach helped to clarify for DOE administrators and teachers new ways to build their capacity for enhanced effectiveness. From this work with DOE, the Economic and Workforce Development Agencies on Guam have looked to the DECS framework to help build on their strengths in upcoming needs assessment and strategic planning efforts.

DECS has also positioned Economic and Community Systems to be able to utilize faculty expertise and experience in serving community needs, while also ensuring data conventions

b. Impact/accomplishment

The Technical Assistance Center became the Data for Economic and Community Solutions. Extension programming was instrumental in providing three needs assessment facilitator training using the Appreciative Inquiry (AI) technique. Forty facilitators are versed in the AI assets based technique. Collaborators such as eleven public schools utilized the AI technique in their needs assessment efforts and as part of their strategic planning and grants strategies. The 2004 Economic Summit also relied on the Appreciative Inquiry technique resulting in a technical summit report of the needs of Guam's Workforce.

c. Source of Funding — Smith-Lever and US Department of the Interior, OTIA, Department of Labor

d. Scope of Impact —Multi-state Extension GU NM ROP

Key theme: Home SafetyRegaining Emotional Stability the Project PRO Way...Guam's Collaborative Model

a. Brief description

Project PRO is a \$1.3 million federally funded collaborative project providing disaster assistance to individuals severely impacted by a natural disaster. This community outreach crisis counseling program targets specific population groups including public housing, faith-based groups, group shelters, school and work settings and centers. Since the program start, Project Pro Outreach counselors have collectively assisted thousands of people with varying degrees of crisis counseling, consultation education and support groups. The University of Guam's Cooperative Extension fills a niche for providing the staging environment and delivery of support services for collaborators. Key themes covered in Goal 5 include: Children, Youth, and Families at Risk; Child Care and Dependent Care; Communications Skills; Family Resource Management; Home Safety; Jobs/Employment; and Consumer Management. Project PRO wrapped up its response to this disaster in May 2004, and completed its final reporting responsibilities. From there, it established its baseline to allow for immediate re-organization and implementation when the next disaster hits.

b. Impact/accomplishment

Because of this project, the collaborative model for emotional recovery disaster relief was refined and is a pilot model for FEMA. The collaborative piece united community partners and sub grantees (Guma Mami Inc. and Catholic Social Services) providing the teaming arrangement for an effective outreach capacity. The crisis counseling partly ensured the targeted, underserved populations (elderly, children, those with limited resources, individuals with disabilities, minority groups) were reached.

The program was able to help many of the households negatively affected by the storm and the damage following. The program was able to distribute 19,977 information units to households in need, contact 2940 collectives (including 2521 households at four members per household average), and address the individual needs of 27,475 persons.

Project PRO showed that emotional event reactions were the most regular symptoms provided, with total emotional event reactions outnumbering the other three categories (physical, cognitive, & behavioral) combined. These responses came from those who were displaced or lost their home, followed by those who assisted with recovery/rescue and those who were displaced or lost their job.

Nearly 98% of respondents were successfully engaged in the initial contact. 80% of these contacted declined further contact. Also, of these 98%, 4% needed referral for additional services. Thus, as can be seen by these numbers, the project was able to reach out to many individuals and households and provide crisis support during this post-typhoon time, while building on collaborative relationships and uniting community resources.

c. Source of Funding — Smith-Lever and FEMA

d. Scope of Impact — State Specific

Key theme: Youth Development/4-HOperation Military Kids – Supporting Military Youth in Our Back Yard

a. Brief description

Guam is a military strategic area housing all branches of the military. Its strategic location houses more than 9,500 military personal on the island of that 2,500 are from the Reserve and Guard units. Guam has the highest membership per capita of all Guard organizations in the nation: 1,100 Guard members for 160,000 residents or .69% of Guam's population are active Guard members. With the war in the Middle East many of our reserve units have been deployed to high risk areas such as Africa, Afghanistan and Iraq leaving behind their families.

When National Guard, Army Reserve and other military parents living in civilian communities are mobilized, their children suddenly become different. Now they are "military kids" but they still "look the same" to teachers, friends and the rest of the community. Their lives are turned upside down!

Many of their usual support systems may no longer be adequate. Extensive media coverage of on-going military operations creates daily anxiety. These "new" military kids need to connect with other youth in similar situations. They seek friends and adults who can empathize and can help them cope with their new world.

State and County Cooperative Extension staff, community agencies, schools, and 4-H Club youth are reaching out to military youth before, during and after their parents are deployed. This outreach effort is called Operation: Military Kids!

Operation: Military Kids

- Creates community support network for military youth "in our own backyard" when Soldier parents are deployed.
- Delivers recreation, social and educational programs for military youth living in civilian communities.
- Supports military kids coping with the stress of knowing their deployed parents may be in harm's way.
- Collaborates with schools to ensure that staffs are attuned to the unique needs of military students.
- Educates the public on the impact of the deployment cycle on Soldiers, families, kids and the community as a whole.
- Becomes a part of the ongoing 4-H Program in the locations where there are military families.

b. Impact/accomplishment

A “Kick-off” Celebration “Operation Military Kids” catered to more than 30 military families. Military youth participated in Life Skill driven activities such as learning different life skills, with emphasis on resiliency and stress management. As part of the “Kick Off” celebration, over 105 Hero Packs, which consisted of a 4-H Backpack containing a disposable camera, post cards, and letter writing supplies, were distributed as part of the inauguration. This was designed to help children share their experiences with their parents. Because of this event two 4-H chartered clubs representing families and kids from the National Guard Youth and Air Force Reserve Youth.

c. Source of Funding — Smith-Lever and Department of Defense

d. Scope of Impact — State Specific

Key theme: Youth Development/4-H4-H Youth Development Programs Enhance Youth Life-skills on the Island of Guam

a. Brief description

The 4-H & Youth Development Program enables one to learn and then teach another the life skills that will help build self-confidence and improve quality of life. The program works with local and federal government agencies. It empowers children, youth and adults to participate in education activities designed to help them improve life skills and learn basic concepts in human development. This program provides a systematic approach to plan activities that will enhance the quality of life through “learn by doing” for children, youth, and families at-risk – particularly in mentorship training skills

An essential goal of the program is to conduct mentorship life skills presentations/ workshops to youths grades K-12. The Experiential Learning Model and the Targeting Life Skills Model are both incorporated into the various modules that are used during presentation delivery. These modules are based on learning activities that can be applied to real life situations.

The framework involves a team of mentors shadowed by an Extension Specialist and faculty. The Master Mentors oversee other mentors and serve as the leader in the team delivery program. Mentors were assigned into teams to ensure the sessions are carried out as scheduled. The teams were then assigned to represent core units (modules and life skills) accordingly. All teams were required to undergo cross training in the different Extension programs, which was the basis of the different curriculums (modules) and workshop series.

b. Impact/accomplishment

A total of 1,451 youths participated in eight modules driven programs and completed 69 life skills workshops. Youth participation resulted from a combination of program sustainability (many workshops were requested by professionals who were already aware of the program), public awareness through media outreach, and by word of mouth. The youths that participated came from five public schools, four elementary schools and one middle school; Andersen Air Force Base’s Child Development Center and Youth Center, Mayors Council Summer Programs and the 4-H Summer Program.

Of the total number of participants, 1,412 or 97% of youth participants’ evaluation showed 70% of youth reported greater understanding of the life skills that was a 43% increase before the life skill was taught.

c. Source of Funding — Smith-Lever and self-sustaining clubs and programs

d. Scope of Impact — State Specific

Key theme: Youth Development/4-H

4-H Youth Development Programs Enhance Youth Life-skills on the Island of Guam

a. Brief description

4-H life skills curricula continue to target at-risk youth in order to effectively address their youth challenges and varied issues. 4-H school-based clubs have been in existence for the last seven years. All 4-H club programs and projects are involved horticulture, grant writing, mentorship training, photography, sports, and environmental field trips. 4-H clubs and training, i.e., sports clinics are self-sustaining and are directed by 4-H adult advisors and volunteers. Each program collaborates with all areas of the community, depending on the programs that are conducted.

b. Impact/accomplishment

One 4-H club (Marine Mania) participated in beautification programs and recycling efforts. The club's active participation resulted in the planting of 600 acacia seedlings restoring Talofofu watershed area. The group performed short recycle skits at school assemblies followed by marine awareness parades and redecorates a large display case every two weeks that promotes marine awareness at their school.

c. Source of Funding – Smith-Lever and self-sustaining clubs and programs

d. Scope of Impact – State Specific

III. Stakeholder Input Process

Actions Taken to Seek Stakeholder Input:

In a February 23rd 2004 Stakeholder input retreat, the problems and issues in all program areas under the University of Guam Cooperative Extension reaffirmed the current program areas guiding our Plan of Work (Youth and Families, Community Development, Agriculture and Natural Resources, and Food and Nutrition). Input from these interactions allows extension agents and program staff to address unique needs of Guam's diverse community. This includes various community and committee appointments of Extension Agents and attendance of meetings, workgroups, grants teams, talk shows, news stories and needs assessments forums held throughout this reporting period:

- (February 23rd 2004) Stakeholder and Faculty Retreat, University of Guam Cooperative Extension Service, Presentation and Facilitation of proceedings, Onward, Agana Guam
- Community Needs Assessment forum sessions in June, August and October and December 2004 add to Extensions group processes involving over 500 participants in these sessions.

Stakeholder input is also solicited at other times during the year to review the research and outreach activities and to offer suggestions on changes needed to make the program more relevant.

Results of consideration of Received Stakeholder Input

Current collaboration with our multi-stakeholder clientele continues to build on a strong working network and active participation in many meetings and seminar formats that speak to a range of community issues in all goal areas. Operation military kids came about due to a stakeholder willingness to participate with CES.

The DECS community programming resulted from many technical forums on data needs assessments and servicing of government programs.

IV. Program Review Process

Significant Changes in the Program Review Processes:

There have been no significant changes in Guam's program review processes since our five-year plan of work.

V. Evaluation of the Success of Multi- and Joint Activities

The University of Guam participates in several multi-and-joint projects:

- ADAP Para Veterinarian Program. Extension continues to participate in a support capacity working with the South Pacific Commission and the different island groups.
- Pesticide Applicators Certification. Extension support in this area provides the technical training and testing certification for pesticide applicators. This continues project continues to have high participation rates.
- Center for Tropical and Subtropical Aquaculture (CTSA). Extension continues to participate through research projects funded by CTSA and supports the work effort in Goal 1 areas. This includes collaborative work with other island programs.
- Data Collection and Needs Assessments. Extension continues to participate with local government agencies in providing technical assistance in conducting surveys, data collection working closely with the Bureau of Statistics and Plans, Department of Interior, U.S. Department of the Census. This effort includes preplanning work effort for conducting an agricultural commodity survey.
- Portable Extension Office for Program Literature Exchange (PEOPLE). This project continues to be maintained by Extension.
- Compact Impact Census of Micronesians. Extension provides a technical support role working with local government agencies.
- Water Quality. Survey work performed and draft of regional water technical report of the results of perceptions on water quality.
- 2004 Invasive Species Survey. Invasive insect surveys were performed throughout Micronesia and include collaboration with the Secretariat of Pacific Communities in technical training for Plant Quarantine Officers.

The AREERA guidance asks that the following four questions be answered in evaluation of the University of Guam's participation in Multi and Joint Activities.

Did the Planned Programs Address Critical Issues of Strategic Importance?

Yes, the University of Guam Cooperative Extension Stakeholder input forums identified several factors, a few examples include:

- Youth programming in life skills development (4-H based)
- Access to technical assistance, resources and funding focusing on youth and family/community programs
- Communication to stakeholders

These factors describe the views and concerns expressed by stakeholders that include both public and private partners.

Did the Planned Programs Address the Needs of Under-served Populations?

Yes, our planned programs reached both the farm community and the general population on Guam. The population on Guam represents several ethnic minorities of which the majority are Asian/Pacific Islanders. This includes participation in boards and committees that work directly with underserved stakeholders. Programming examples include:

- EFNEP and ADAP HLPI initiative
- 4-H Youth Development programming working with youth at risk programming with the Department of Youth Affairs and Department of Education after school programs catering to underserved school-children
- Community Needs assessment programming with village leaders and community organizations in community based programming.

Did the Planned Programs Describe the Expected Outcomes and Impacts?

Yes, through the core program Plans of Work and AREERA reports.

Did the Planned Programs Result in Improved Program Effectiveness and/or Efficiency?

Yes through our core programming and emphasis on cross programming we strive to integrate and communicate all work efforts. Our impact reporting documents these successes by Extension specialist and regular reviews of plans help identify trends within the program areas of expertise. Through each of the core program areas plans of work and with the Program Leaders directing and evaluating program teams promote an environment for continuous refinement to programs and community priorities.

Appendix A. Annual Report FY 2004 Allocation of Local and Smith-Lever 3c and 3d Funds within the Cooperative Extension Service				
	FTE%	Federal Funds	State Funds	Total
Administration				
Total FTE	3.0	121,113.00	76,137.00	197,250.00
Goal 1				
Total FTE	6.0	267,072.00	178,049.00	445,121.00
Goal 2				
Total FTE	2.0	80,702.00	53,800.00	134,502.00
Goal 3				
Total FTE	2.0	84,451.00	56,302.00	140,753.00
Goal 5				
Total FTE	8.0	326,876.00	231,411.00	558,287.00
Total	21.0	880,214.00	595,699.00	1,475,913.00