



AREERA POW REPORT

Agriculture Research, Extension and Education Reform Act of 1998

Annual Report of Accomplishments and Results FY 2004-2005

**Northern Marianas College
Cooperative Research, Extension, and Education Services (NMC-CREES)
Commonwealth of the Northern Mariana Islands (CNMI) USA**

Report: FY 2004-2005 AREERA Report for the Northern Mariana Islands. Submitted by the Northern Marianas College Cooperative Research, Extension, and Education Service (NMC-CREES).

Contents

Introduction

A. FY 2005 Annual Report of Accomplishments and Results

- Goal 1: An agricultural system that is highly competitive in the global economy
- Goal 2: A safe and secure food and fiber system
- Goal 3. A healthy, well-nourished population
- Goal 4: Greater harmony between agriculture and the environment
- Goal 5: Enhanced economic opportunity and quality of life for Americans

B. Stakeholder Input Process

C. Program Review Process

This report represents the combined Extension and Research programs of the Northern Marianas College as presented in the AREERA plan of work submitted in 1999 and subsequently revised in 2000.

INTRODUCTION

The Northern Marianas College-Cooperative Research, Extension and Education Service, (NMC-CREES) provides outreach education and conducts research through its two programs of Agriculture Research & Extension (ARE) and Family & Consumer Sciences (FCS). With continuous interaction, collaboration and a unified direction, both programs are dedicated to helping improve economic well-being, living conditions and overall quality of life within the Commonwealth of the Northern Mariana Islands (CNMI). Our key stakeholders include: farmers, families, youths, individuals, government agencies, and various ethnic communities.

The CNMI consists of a chain of 14 islands, north of Guam in the Western Pacific. However, only the islands of Saipan, Tinian and Rota, the main islands in the CNMI, are substantially populated. The total land area of the three islands is approximately 118 square miles. The CNMI population is about 66,000 with an indigenous population of 18,000, consisting of Chamorros and Carolinians. Although the major language for communication is English, more than 86% of the population speaks a language other than English. The diversity of cultures and languages creates numerous challenges for NMC-CREES. However, our programs are dedicated to serving the needs of our stakeholders.

In relation to other land grant institutions, NMC-CREES is small in size, with fewer than twenty-five employees distributed amongst the three major islands, Saipan, Tinian, and Rota. To resolve the shortage of manpower, NMC-CREES relies on the key collaborations and partnerships with government agencies, non-profit organizations and other entities throughout the CNMI and the region. Our interactions with collaboration enables us to promote our educational programs, extension services and research projects, In response, NMC-CREES provides collaborators with the knowledge and expertise to aid their respective organizations or agencies.

Extension services and research projects are the result of the growing needs and challenges that the CNMI community must satisfy and faces. These programs are also in line with the missions of the Cooperative Research, Extension and Education Service and the Northern Marianas College.

PROGRAMS

NMC-CREES programs in Agriculture Research & Extension (ARE) and Family & Consumer Sciences (FCS) include the following:

I. Agriculture, Research and Extension Programs:

- Aquaculture Development
- Crop Improvement
- Plant Protection
- Soil and Water Management
- Communication
- Soil and Water Quality Program

II. Family and Consumer Sciences Programs:

- Food Safety and Quality
- Expanded Food and Nutrition Education Program (EFNEP)
- Nutrition, Diet and Health
- Community Development and Resource Management
 - Parenting Program
 - Money Management
 - Sewing Program for Families with Limited Resources
 - 4H/Youth Development

RESEARCH & EXTENSION INTEGRATION

NMC-CREES integrated Research and Extension activities in an effort to deliver better information and resources that address our stakeholders' needs. The integration of these two components has encouraged multi-discipline and multi-level of educational backgrounds to cross train thus promoting efficiency and better communication among faculty, scientists, and extension agents. The ARE and FCS have also combined their efforts in addressing the five listed National Goals to ensure effective and efficient delivery of programs and activities ensuring compliance with NMC-CREES 5 year Plan of Work.

A. FY 2005 ANNUAL REPORT OF ACCOMPLISHMENTS AND RESULTS

Goal 1: Competitive in the Global Economy

OVERVIEW

Since the inception of NMC-CREES in 1987, it has been our department's priority to expand and enhance agriculture production in the CNMI. The importation of popular agricultural produce in large volumes from various sources outside the CNMI continues to compete, and therefore, impede the growth of the agriculture industry in the CNMI by underselling local produce. Additionally, the relatively low quality and the inconsistent supply of locally grown produce continue to be the major factors that inhibit and discourage the development of agriculture. The heightened terrorist alerts and the war in Iraq together have compounded the unfavorable ports conditions with increased security making it difficult to timely import agriculture supplies that local farmers need for cultivation, production and harvest. Immediately after the September 11 incident, the CNMI's economy has since plummeted and has yet to recover.

To confront these issues, NMC-CREES has made significant attempts to strengthen, as well as to create, new partnerships with other agencies to effectively meet the needs and challenges of stakeholders by combining resources. NMC-CREES has also maintained focus on areas that improve the marketability of agricultural products, including the introduction of niche crops. Furthermore, NMC-CREES continues to apply concerted efforts at improving existing programs through stakeholder input and their participation in appropriate workshops and other information gathering sessions. These efforts particularly in assisting the community to understand the structure and nature of local agriculture activities and their relation to local economy, are presumed to help minimize importation of produce that are grown in large volume locally, increase exportation of these produce, and presumably this will ultimately stimulate the island's economy.

The NMC-CREES Programs that address Goal 1 include Crop Improvement, Aquaculture Development, Plant Protection, Plant Nutrition and Soil Management, the Sustainable Agriculture and the Food Safety and Quality Programs.

A. ACTIVITIES

In FY 2005, NMC-CREES focused on improving the CNMI's agriculture industry by conducting numerous research projects, workshops and presentations targeting on the needs of both commercial and subsistence farmers. NMC-CREES continued to conduct one-on-one and small group training sessions with farmers and other stakeholders to actively promote adding value to local produce through food processing and preservation technology.

The Crop Improvement and Plant Protection Programs conducted numerous vegetable trials in hopes of improving crop production in the CNMI. The crops tested include varieties of

tomatoes, squash, and melons. The varieties chosen for the trials were tested for pest and disease resistance as well as total yield. These trials were conducted at the Kagman Agriculture Experiment station as well as on-farm trials through collaborative efforts with CNMI farmers. Better irrigation designs and effective weed suppression methods of application were also demonstrated at various private farmers' field and at the Kagman Commercial Farm Plots.

The Plant Protection Program continues to monitor invasive species as well as other locally existing plant pests and disease. Monitoring stations are maintained on Saipan, Tinian and Rota to assist researchers in their efforts to prevent and suppress unwanted insect populations explosions and to detect the invasion of new pests from abroad. In addition, the Plant Protection team conducted its annual pesticide applicator training and certified individuals to obtain private and commercial applicators licenses. Because of the rapid increase of the Norway rat population in the farm areas and the apparent increase of the fungus *phytophora meadi*, infected betel nut plantations, the Plant Protection team has also increased efforts to suppress the local rat population and to prevent further spread of the betel nut fungus.

The Aquaculture Development Program maintains its presence among the CNMI's aquaculture farming community by welcoming newcomers to industry by conducting workshops on production of tilapia and marine shrimp. Effective collaborations with stakeholder and regional institutions have enabled NMC-CREES to expand its activities to also focus on other viable and economically feasible aquatic species for culture.

B. HIGHLIGHTS

Through continuous workshops, training sessions, extension visits, minor publications and newsletters, NMC-CREES has maintained its positive public image and has successfully reached and informed thousands of individuals throughout the CNMI about NMC-CREES activities that enhance economic development and improve the community's well being. These accomplishments were made possible through the partnerships with approximately 20 governmental agencies, business community and non-profit organizations.

The Crop Production Program's efforts in identifying viable tomato varieties have increased the tomato production in the islands. Farmers have been reporting marked increase in production compared to previous year's harvests. According to farmers, their poundage per acre has increased significantly. One farmer who was interviewed claimed that his tomato field of less than ¼ acre has been producing a harvest of 70lbs per week. This resulted by planting the tomato varieties recommended by NMC-CREES Extension Agents.

Because of the consistency of program delivery on the part of the Aquaculture Development Program, an entrepreneur has built a shrimp hatchery that has the potential capacity to provide the Micronesian region with enough shrimp post-larvae to enhance the growing shrimp industry. With this kind of success, the Saipan Aquaculture Inc. intends to provide shrimp post-larvae to shrimp farmers abroad, in addition to providing fully grown shrimps for local consumption. With the present investment, Saipan Aquaculture Inc. is capable of harvesting 9000lbs. of fully grown shrimp a month.

C. IMPACT

NMC-CREES has made significant improvements in sweet potato production through crop protection measures such as insect monitoring and trapping. The estimated revenue made from reduced crop damage on sweet potato is estimated at \$150,000.

Throughout FY2005, the crop production team increased efforts in giving incentives to farmers to use plastic mulch to suppress weeds that compete with crops in their farms. With the use of plastic mulch, farmers have realized substantial savings in labor costs and field work time. These savings in labor costs and in field work time have enabled farmers to transfer costs to other needs and to perform other activities.

The Aquaculture Development program workshop participants continue to increase in number. This has resulted in increased number fish farms on the three most populated islands of Tinian, Rota and Saipan. Although most of these are subsistence farmers, given time and gradual increase in population may result in some of these farmers going commercial. Nevertheless, the positive impact of this program in increased public awareness in agricultural related technology.

D. ASSESSMENT

The CNMI is in a period of recession making it practically or virtually impossible to hire permanent staff to accommodate some of the planned expansion of our program. Despite these hindrances, NMC-CREES continues to address key themes listed in Goal 1, and carrying out plans listed in the NMC-CREES 5 Year Plan of Work.

E. FUNDING AND FTE

FTE's: 7.25	PROGRAM COSTS: \$301,119
-------------	--------------------------

Key Theme – Innovative Farming Techniques

- a. In FY 2005, the Crop Production team performed trials of four tomato varieties selected for comparison of yield. The trials were completed and successfully harvested. Through media interviews, workshops, and one-on-one consultations farmers were able to learn about the varieties tested.

- b. As a result of CREES' successful tomato variety trial, four commercial farmers have opted to cultivate the higher yielding variety called Cascade 33. This tomato is now being sold at our local farmers market as well as supermarkets throughout Saipan.
- c. Source of Funding: Smith-Lever, Hatch
- d. Scope of Impact: State Specific

Key Theme – Innovative Farming Techniques

- a. Sweet potato has a high demand by consumers throughout the CNMI. However, the intensive labor required to prepare the land for cultivation is burdening the farmers with high labor costs. To cultivate sweet potato requires the construction of mounds or hills. Traditional sweet potato mound construction was done manually, which requires intensive labor and an inordinate amount of field work time. Noting the predicament of the sweet potato farmers, NMC-CREES Crop Production team developed a mechanical "hiller", attachable to a tractor that can construct 100ft. long hills in a matter of 35 seconds.
- b. As a result of NMC-CREES' successful sweet potato hiller design, sweet potato growers throughout the islands have started cultivating more farming lands and have increased their production. When information got disseminated through workshops and farmers meetings, the Dioscorea yam farmers adopted the technology, enhance their production and reduced their labor costs.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme – Aquaculture

- a. Shrimp production in the CNMI is relatively new compared to our neighboring island of Guam. The shrimp production on our islands has not been able to supply the huge demand from consumers. The "grow-out" and harvesting of shrimp here is still done using single, circular tank stocking. We learned from literature about a new 3 phase tank design system that is capable of sustaining a harvest of six times a year as opposed to the conventional twice a year.
- b. Through the development of the 3 phase tank system, farmers have the capability to stock their shrimp post larva more efficiently now. One commercial farmer is now using this technology and will be able to harvest approximately 9000lbs. of shrimp per month.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme – Agricultural Profitability

- a. Farmers throughout the island of Saipan sought CREES' assistance in addressing the substantial increase of the rodent population in farming areas. In response to this urgent request, NMC-CREES immediately established a Rodent Control Task Force and investigated the most feasible way to suppress the rodent population due attention to environmental safety. By researching the work of other Land Grant programs, NMC-CREES has been able to identify ways to effectively address this problem.
- b. As a result of our investigative efforts and input, farmers are now seeing a marked decrease in rat population and improvements on crop production, especially in fields where watermelon, corn, and peanuts are grown.
- c. Source of Funding: State
- d. Scope of Impact: State Specific

Key Theme – Agricultural Profitability

- a. Farmers throughout the island of Saipan have requested for CREES assistance to identify the cause of the betel nut "crown rot" disease. The betel nut industry is estimated to be worth three million dollars. The industry appears to be in danger of complete collapse if the "crown rot" disease is not controlled. CREES identified the disease agent to be a fungus, *Phytophthora meadii*, which evidently infects the crown of betel nut trees. Older trees are more vulnerable to infection by the fungus. In advanced infection, the crown starts rotting resulting in a symptomatic die-back. With assistance from collaborators in the region, NMC-CREES received recommendation to try a fungicide called Mono- and Di-Potassium salts of Phosphoric Acid. However, this fungicide is not listed for application on betel nut trees. With continued assistance, the CNMI government was advised to apply, and subsequently received approval, for Special Local Need (SLN) to use this fungicide on betel nut trees.
- b. As a result of NMC-CREES efforts, betel nut farmers are now being assisted by NMC-CREES Extension Agents to control the spread of the fungal disease by injecting betel nut trees with SLN approved fungicide. Detail results are not yet available.
- c. Source of Funding: State
- d. Scope of Impact: State Specific

Key Theme – Invasive Species

- a. Plant pests and diseases are major limiting factors in the production of root and vegetable crops in the CNMI. Practically, the entire major plant pests and their hosts entered the Mariana Islands as invasive species. There is a great deal of information available on the management of most of these pests, but the information is slow to reach the growers, and the pest management programs that have developed elsewhere for these pests have not been tested under the distinct farming conditions that exist in the islands.
- b. Several years ago, a species of slug, *Veronicella cubensis*, invaded the island of Rota, has multiplied and has spread throughout most of the farm areas, and has caused extensive damage to many crops. It has become a major agriculture pest and it has also become a threat to other islands in the CNMI where this pest is not present. This pest has attracted everyone's attention.

In a concerted effort to confront this invasive pest issue, NMC-CREES formed a “task force” to develop strategy to combat this pest. CREES embarked on a suppression control method and identified a type of slug bait that has the least impact on the environment. Public Educational Awareness campaign was also initiated. The community was advised on the proper use of the slug bait, and was also educated on the biology and control of slugs. Consequently, slug baits were distributed to the farmers who are most impacted by the invasive slug. Baits were also installed at the seaport and the airport to prevent slugs from hitchhiking on airplanes and ships bound to other islands.

On February and sometimes in May 2005, Rota released the stem-gall fly, *Cecidochares conneza* as bio-control against *Chromolaena odorata*, an invasive weed.

- c. Source of Federal Funding: Smith Lever 3d, Integrated Pest Management, USDA CSREES
- d. Scope of Impact: State Specific

Goal 2: A Safe and Secure Food and Fiber System

OVERVIEW

The Food Safety and Processing program continued with the momentum it developed in 2002/2003. It was for this reason that the food processing industry was improving greatly in the Commonwealth of the Northern Mariana Islands (CNMI) in terms of farmers' marketing, and product development.

This year was marked for the success in processing for export. The continuation of workshops and extension services triggered the ambition of potential growers and investors to explore and invest in the food processing industry.

As a result, in 2004-2005, there were great improvements in community's understanding of foods. They increased awareness of the functions of different ingredients in foods, anatomy of food structure, the effects of different processing methods, and the roles of protein, enzymes and color pigments in making foods safe and acceptable to consumers.

A. ACTIVITIES

There were a total of 5 different workshops held on the islands of Rota, Saipan, and Tinian. Those workshops were successful in training of 175 participants. It was noted that 43% of the participants were new. The other 57% were regular participants of previous workshops. The participants were able to learn new concepts as the project coordinator conducted more and more researches. Increasingly, 10% of the new entrants have already started processing of hot pepper paste and banana chips and sell at local convenient stores.

There are six (6) major food processors that have shifted from their own business line of groceries stores to concentration in processing of hot pepper paste, Tamanu essential oil, chips, fruit jams, and pickles. With the direct involvement of the CREES Food Processing Specialist, these businesses are currently exporting their products to US mainland, Guam and within the Northern Mariana Islands. Although that data is not available, it is estimated at sales revenue of \$1.2 million and that is almost 25% increase over the 2003/2004 yields.

Training modules were improved to expand the understanding of local processors on the biological changes and chemistry of foods. With expansion of the program, more emphasis was placed on the cause and prevention of pathogenic microorganisms.

B. HIGHLIGHTS

In collaboration with local government agencies, and the NMC-CREES Expanded Food and Nutrition Education Program (EFNEP), we are now able to provide more information and lessons on the basic concepts of microbiology, the importance of understanding chemical reactions at different pH levels, the safe handling and sanitation requirements, and cross contamination. It is on that basis that in every workshop, we also addressed topics on dirty

dinning, moisture content and implications, temperature control, the three rules of food safety and basic food microbiology.

With the current work on different enzymes that caused both desirable and undesirable effects on the finished product, the food specialist is focusing more on chemical reaction stabilization to prevent spoilage and production of irrelevant toxic substances in processed foods. This is an ongoing project and it needs further collaboration with renowned food chemists throughout USA. At present, work is being carried out with a Professor from Kansas State University.

This is new and the priority is to educate the interested processors on roles of enzymes on foods and on how to control them from causing off-flavour, protein denaturation, color changes and nutritional loss.

C. IMPACT

The impact has seen the rise in revenue generation activities, an increase in employment opportunities for roughly 50-60 employees, increase in export earnings by roughly 7-10%, and the support of economic development activities provided to the CNMI economy. Although it is still at a minimum level, the rate of growth is rapidly taking off.

The physical increase in display shelf-space in local stores for products processed locally has indicated the growth in the food processing discipline. The sustainability in natural color, textural substances, and nutritional components of foods processed locally has indicated the level of understanding of many challenges of food processing. The few local processors have been able to take a good grasp of the scientific concepts in foods.

In addition, there is a growing trend of farming and trading in agricultural products. The setback is the continuing inflict of natural disaster caused by devastative typhoons. The crop losses due to typhoons have reached the million-dollar level. In some cases, frequent typhoons have encouraged local farmers to stop growing and therefore shifted from farming to other means of generating revenues. The majority of them are now government employees.

D. ASSESSMENT

All Family and Consumer Science and Agriculture Research and Extension activities are in line with NMC-CREES 5 Year Plan of Work. There were some changes that needed to be made to adapt to the changing needs of the community. However, the program focused primarily on food safety, prevention of food borne epidemic, handling and preparation procedures. It was a real challenge because most of the local processors were clients who have been using methods taught to them when they were young.

E. FUNDING AND FTE

FTE's: 4.5	PROGRAM COSTS: \$100,000
------------	--------------------------

Key Theme – Food Handling, Food Quality, Food Safety and Food Borne Illness

- a. The continued effort to ensure safety throughout the food chain has been a great challenge. The coordinated efforts of CREES together with other relevant agencies have enabled the program to develop training materials that are simple and easy to adopt at the grass root level. The emphasis was on proper hand washing and food safety practices.
- b. In collaboration with local government agencies, and the NMC-CREES Expanded Food and Nutrition Education Program (EFNEP) of the CREES – CNMI program, the training and extension services provided now covered in greater details the basic concepts of microbiology, the importance of understanding chemical reactions at different pH levels, the safe handling and sanitation requirements, and cross contamination. It is on that basis that in every workshop, there were separate topics on dirty dining, moisture content and implications, temperature control, the three rules of food safety, and basic food microbiology.

At program entry roughly 50% of participants practiced proper hand washing, while at exit 98% practiced proper and timely (before cooking and eating, after changing diapers, etc.) hand washing.

Prior to food safety education 56% of participants demonstrated acceptable food safety practices (i.e. thawing and proper food storage), while after the food safety intervention 96% of participants demonstrated acceptable food safety practices.

- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Medicinal Plants and Nutraceuticals

- a. With the on-going work on Noni plants and *Callophyllum innophyllum* by investigation of their medicinal properties through application and traditional treatment, the program has continued to conduct research on proper processing methods. These methods were dehydration and oil pressing of *Callophyllum* nuts, and juice and capsules of Noni fruits and leaves.

- b. The major impact is the fact that more than 6,000 plants (seedlings of Noni and Callophyllum) have been propagated and planted into fields throughout the CNMI that represent close to 15 hectares of land area. There are 11 farmers that have already planted these trees in their respective field. The future impact of production and commercial of the two plants are great.

Furthermore, there are more and more local consumers that have used the Tamanu oil to cure eczema and psoriasis. The oil is unsaturated fatty acid with high content of oleic and linoleic acids, which therefore possess skin healing properties.

There are a total of 9 small-scale operation that are involved in the processing of the Tamanu oil and sell at the market between \$15-25 per ounce of pure cold pressed oil. It is estimated that about \$60,000 of revenue are generated from the Tamanu oil.

- c. Source of Funds: Smith-Lever
- d. Scope of Impact: State Specific

Goal 3: A Healthy , Well-Nourished Population

OVERVIEW

The indigenous Chamorro and Carolinian populations of the CNMI continue to rank third in the world among adult populations with Type 2 Diabetes (*source: World Health Organization*). Equally alarming is the rate of childhood overweight and obesity that, according to the Department of Public Health, 1 in 3 or thirty percent (30%) of children up to age fifteen are diagnosed as either overweight or obese. A school-wide survey conducted by the Public School System shows that the most commonly eaten snack foods are chips, cookies, and candy. Results from a 2005 Nutrition Survey conducted by the University of Hawaii, CNMI Department of Public Health, and Northern Marianas College show that the average amount of television watched during weekdays and weekends is 4 hours per day. The results of the aforementioned Nutrition Survey also show that 13% percent of males and 14% of females ages 5 to 11 years old had cholesterol levels greater than 200 mg/dl. Research shows an increased risk of lifestyle-related disease for those that are overweight and obese.

According to Census data from 1999, 30.6% of the CNMI population is below the poverty level. Due to the recent decline in the CNMI economy, this number is expected to rise. The Nutrition Assistance Program also reports an increase in the number of new food stamp clients. This shows an urgent need for physical activity and nutrition interventions as research shows that socioeconomic status at or below the poverty level means an increased risk for unhealthy lifestyles and chronic diseases.

A. ACTIVITIES

Extension educators and program assistants continue to use the, “Where’s the Fat and Sugar?” presentation as a means of showing people how much fat and sugar is in some of the more commonly consumed foods: soda pop, boxed fruit drinks, chips, cookies, candies, corned beef, luncheon meat, and others. Participants are also shown healthier alternatives through displays, samples, and food demonstrations. Food stamp recipients and Head Start parents enrolled in an eight-hour long program designed to increase positive nutrition-related behavior changes. A prime concern of those needing nutrition interventions is the cost of healthy food in the CNMI. Thus, nutrition educators also focused on “Shopping Healthy on a Limited Budget”.

Staff conducted training for Public School System teachers on healthy and easy snacks for the classroom and integrating nutrition into the curriculum. Program staffs are also asked to be guest speakers at Head Start through high school classes. Additionally, teachers and principals request program staff to present on the importance of healthy living at CPIC and Parent-Teacher Association meetings.

Over the summer, CREES organized the “Healthy Pacific Child Conference” which focused on improving diet quality through role modeling and nutrition policies in the child-care

setting. Over 200 parents and childcare providers attended the conference. As a result, nearly half of all childcare providers have implemented their own nutrition policies in the day care.

B. HIGHLIGHTS

Program staff continues to be called on as a resource for nutrition education and training. According to evaluations from collaborators, CREES nutrition presentations are consistently shown to increase nutrition knowledge. Through nutrition educator's real-life approach, CREES has reached out to thousands of people in the CNMI, particularly those at highest risk. The Expanded Food and Nutrition Education Program (EFNEP) alone assisted more than 442 program families. Through collaboration with internal and external stakeholders, a more holistic approach to nutrition education has been applied.

As a result of the Health Pacific Child Conference, the Child Care Licensing Program has recognized the need for increased nutrition education and now refers all of its clients to the Nutrition Education Programs for enrollment; it is in the process of mandating the Nutrition Education classes through CREES.

C. IMPACT

Participants enrolled in the Food and Nutrition Education Program have learned to make informed decisions regarding food choices, meal planning, food preparation, and resource management. The EFNEP Evaluation/Reporting System shows that 91% of adult participants improved in one or more nutrition practices, such as making healthy food choices and using less salt. Additionally, 74% of adult participants show positive behavior changes in food resource management practices (i.e. plan meals, compares prices, does not run out of food or uses grocery list). Youth participants have increased their nutrition knowledge by 70% as a result of Nutrition Education Program lessons.

Program staff who have conducted "Where is the Fat and Sugar?" presentations are often approached by people who have seen the presentation and are told that they have reduced soda and/or canned meat consumption. This presentation has greatly impacted our clients and continues to be a sort of "signature" presentation.

Collaboration with internal and external public and private sectors is a key component of Nutrition Education Programs' success. Evaluation results from stakeholders show that CREES programs are appropriate for their clientele and program needs.

D. ASSESMENT

All Family and Consumer Science and Agriculture activities are in line with the FCS Plan of Work. There were some changes that needed to be made to adapt to the changing needs of the community. With the increasing rates of lifestyle diseases, all programs have refocused their efforts to address this urgent need. Because of staff turnover, various activities had to be placed in a different year.

E. FUNDING AND FTE

FTE: 4.5	PROGRAM COST: \$180,000
----------	-------------------------

Key Theme - Human Nutrition

- a. The “Where’s the Fats and Sugars?” helps audiences, particularly parents and children, visualize how much fat and sugar is in foods they commonly eat. The project goal is to teach people to choose healthier foods and moderation in eating by reading the nutrition facts label. The presentations were held in a variety of settings including public school PTA meetings, classrooms, health fairs, parent workshops, job sites, and other community events.
- b. Based on evaluation reports, around 35% of parents have reduced their soda intake and replaced it with diet soda or water. Additionally, these parents have learned to use the nutrition facts to shop for healthier food.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Human Nutrition

- a. The Nutrition Education Programs help families with children and food stamp recipients eat a healthier diet on a limited budget. Skills learned in the program help clients build confidence in themselves and their abilities. Lessons are usually taught in groups and occasionally one-on-one settings.
- b. Evaluation results show that at entry into the program, 23% of clients demonstrated acceptable food resource management practices (i.e. plan meals, compare prices, does not run out of food and uses grocery lists) and 6% demonstrated acceptable nutrition practices (make healthy food choices, reads nutrition labels etc.). However, upon program completion, 63% of participants demonstrated acceptable practices of food resource management and 58% demonstrated acceptable nutrition practices.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Human Nutrition

During the summer, we conducted the “Health Pacific Child Conference” to childcare providers and parents. Activities focused on the day care as a place to promote and encourage healthy eating behaviors and physical activity.

- a. A follow-up survey shows that 40% of the day care providers who attended the conference have implemented nutrition policies within the day care.
- b. Source of Funding: Smith-Lever
- c. Scope of Impact: State Specific

Goal 4: Greater Harmony Between Agriculture and the Environment

OVERVIEW

In pursuit to agricultural advancement and competitiveness for our local people, it has been a part of our mission to ensure that our natural resources are protected and conserved from possible threats by applying appropriate methods of science and technologies in developing our agricultural. It is through the nurturing of our environment that we can achieved success in our endeavor. Only then can we expect to maintain fertile soils, a balanced and healthy ecosystem, an abundant and clean water supply and high agricultural productivity.

The tropical islands of the Northern Marianas have year-round pest management problems that are heavily influenced by the climate. The present economy is mainly dependent on the Asian economy, and not the mainland USA economy; whatever happens in Asia has a multiple effect on the CNMI. Most of the subsistence farms, has severely affected the downturn of the Asian economy. Other important factors that limit the development of agriculture industry in the CNMI is the availability of farm equipment, supplies and agricultural chemicals. This is greatly influenced by ocean and air transport system that bring imports into the CNMI.

The fresh water sources are limited in small islands such as the Mariana Islands. The major source of current water system in the CNMI is basal ground water. Because the islands are relatively small and low in elevation, relatively small portion of the rain that fall on the islands reach the water lens under the land mass. The resulting fresh water lens is the main source of water for the islands. Because of the geological formation of the islands, this source is highly susceptible to contamination from pesticide residues, other farm chemicals, animal and human wastes and any other type of chemicals dumped on land and capable of leaching into the soil. In our efforts to develop our agriculture industry, we are cognizant of the delicate nature of our water supply. It is with understanding that we desperately need to continue implementing the Integrated Pest Management (IPM) program, such that agriculture activities would tailored towards minimizing the use of pesticides for the control of pests and diseases of crops. We believe that proper application of the IPM program will ensure the protection of our fragile and limited water sources and our environment in general.

A. ACTIVITIES

Small-scale piggeries around the western pacific region continuously received a great amount of focus this year as extension agents from land grant colleges collaborated and promoted an alternative swine waste management system, the Dry Litter Waste Management System. The system encourages the use of the combination of hog waste and carbon materials, which ultimately can be converted to compost/fertilizer. This product can be used to increase agricultural productivity in fields and thus increase profits, and reduce the overall cost of production. Simultaneously, the incorporation of rainwater catchments into the system were also advised to farmers of which water consumption in the piggery is drastically reduced

which in turn further reduces the overall cost of production and virtually eliminates the leaching of excess nutrients into ground and surface water resources.

The promotion of the IPM programs in the CNMI continued to develop and improve the skills of our clients through frequent on-farm visits by our extension agents and provide proper technical advice. Handouts and brochures were also developed and published or made available to various IPM and Pesticides Safety Education Program workshop attendees. Posters and power point presentations of IPM practices, CNMI-wide Melon fly and Sweet potato weevil control program were displayed at various Agricultural fairs, Environmental symposium within the CNMI. Well over a thousand visitors, mainly school age children and farmers attended the fairs. Media releases through newspapers and on local TV channels; Channel 5, Rota and KMCV7 on Saipan, public school presentations, and student field trips continue to provide avenues for dissemination.

B. HIGHLIGHTS

NMC-CREES participated in the regionally collaborated workshops conducted by Land Grant colleges on the prevention of water pollution and water-borne diseases of public health importance, relative to water contamination by small-scale swine farms throughout the environmental degradation.

Information and public awareness were dissemination thru video, brochures and posters in the CNMI, Palau, Federated State of Micronesia and US mainland;

NMC-CREES participated in the national and international conferences related to Water Quality and Sustainable Agriculture as speaker in main session and poster presentation.

As part of the Interlink with the ADAP Paravet Training Project, NMC-CREES utilized paravets to promote agriculture waste management in the western pacific.

Our response to the innovative farming techniques has increased over the years as a result of increasing inquiry from farmers, from collaborating agencies and other stakeholders.

The Northern Marianas College, Cooperative Research Extension/Education Service (NMC-CREES) becomes part of a regional distance diagnostics system network that interfaces with the National Plant Diagnostic Network (NPDN). This system is now being used to help identify pest and plant diseases and by means of providing quick identifications and establishing protocols for immediate reporting to appropriate responders and decision makers. There are twenty-two certified first detectors now in the CNMI who received training and capable of detecting biosecurity threats to agriculture, they have received instruction on how to recognize potential biosecurity threats, what to do when suspicious conditions occur and how to collect samples for further diagnosis.

C. IMPACT

This year, CREES has made major strides in increasing the awareness of our collaborators and clients in respect to our programs and the benefits of such. This is true to the point that many of our collaborators are now helping to promote our programs and supporting them in many cases. Examples of this phenomenon are seen with the IPM, Animal Waste and Recycling programs.

Much of the successes that we have enjoyed this year have come about as a function of the multi-agency approach to promoting our programs. With respect to the Animal Waste Project for instance, agencies like the Environmental Protection Agency (EPA), the Natural Resources Conservation Service (NRCS), Public Works, The Department of Land and Natural Resources and the Farm Service Agency have all now acknowledged that there is an animal waste problem in the CNMI and have assisted CREES with funding, coordination and Outreach/Education. These agencies are also pleased that there are steps being taken to deal with this issue and have begun to view CREES efforts as a highlight and success that they can acknowledge as a being a contributor too. This is apparent because of the number of conferences, meetings and trainings that we have been invited to share information and ideas. It can be said that our efforts are now being acknowledged and supported not only in the CNMI, but in the whole Pacific region and to some extent in the South Western States.

As a direct result of the overall support for CREES Programs, more people are aware of our programs and the potential benefits that they can provide for individuals (farmers), the environment and the community as a whole. Furthermore, agency collaborators have now begun to consider the Dry Litter Waste Management System for hogs as a Best Management Practice that they agree is to be promoted and supported.

The same can be said of the Recycling program. Because of the efforts made by CREES staff in building collaborative relationships with the Service Learning Students, Public Works, the Tinian Mayor's Office, NRCS, EPA and the private business sector in regards to initiating recycling and waste management efforts here on the CNMI, there is now an unstoppable momentum behind these efforts with support coming from all sides that will surely increase the chances of overall success of the program. In essence, CREES programs have inspired agencies to take action in support of programs that serve to promote Environmental Education and awareness, as well as, provide opportunities for individuals and the government as a whole to get involved. As a result, the awareness of this program has begun to flourish within the community as support continues to grow.

The IPM program has shared similar successes with greater farmer awareness of CREES programs that relate to sustainability, farm economics and pest management. Furthermore, collaboration with the DLNR, University of Guam and the University of Guam have resulted in greater emphasis and support for programs such as the control of Melon fly, scarlet gourd and other invasive species.

Overall, these programs have a much greater potential for impacts in years to come as much of the program objectives are still in the process of being completed. In the near future, the CNMI community and the region as a whole will become aware of these programs as this information is disseminated via radio, television and video productions. As these objectives are completed, we can expect to see a paradigm shift in behavior and support for these programs.

D. ASSESSMENT

The overall success of CREES staff in building collaborative relationships and a team approach to implementing programs has had a synergistic effect on our ability to achieve our objectives in encouraging and supporting agriculture while simultaneously ensuring that our environment is protected and nurtured.

E. FUNDING AND FTE

FTE's: 6.5	PROGRAM COSTS: \$157,352
------------	--------------------------

Key Theme-Agriculture Waste Management

- a. Since the arrival of the Spanish here in the Marianas, the people of the CNMI have raised hogs to be eaten during family gatherings, fiestas or just simply for family consumption. Thus, raising hogs is an important cultural tradition for these people. This results in a large number of small-scale piggeries throughout the CNMI.

Unfortunately, hog farmers almost exclusively use the conventional “spray-out system” of waste management which requires large amounts of water and adds to the probability of leaching of excess nutrients past the soil and beyond to the drinking water aquifers or into the nearest stream.

This year, extension agents have set-up piggery demonstrations to promote the Dry Litter Waste Management system (DLWMS) for Hogs to include rainwater catchments. This

system reduces the use of water and leaching of nutrient to almost zero. Simultaneously, carbon materials that would normally be burned or thrown into the land-fill can now be utilized for the dry waste management system. Furthermore, hog waste is automatically combined with carbon materials (the chips-usually wood or coconut husk), which are periodically collected and composted. This valuable compost is important in increasing soil fertility and decreasing the overall cost of agricultural crop production as commercial fertilizers are hard to come by and expensive.

- b. In our long-term efforts to promote hog waste management systems, agents collaborated with the Environmental Protection Agency to produce the first half of a two part series on the DLWMS for hogs. Furthermore, a second series of workshops were done this year to promote the video and the system itself. One of these workshops was conducted in collaboration with the Soil and Water Conservation District of Saipan and the Natural Resources Conservation Service. The media was invited and interviews ensued. The result of this workshop was the airing of part of the video and the interviews. As a result, a number of farmers phoned in to request information on the Dry system. At least one farmer has already implemented the Dry system in his piggery, utilizing carbon materials that are a by-product of his charcoal business.

As these efforts progress, educational awareness among farmers, youth and students are increasing. Attitudes and behavior towards waste managements of the local people has been the most challenging factors for the success of the program. Shifting paradigms and be able to show the benefits of waste as a resource will made them convinced about the programs. To wit, one farmer would like to venture on compost production and agency collaborators such as Farm Service Agency (FSA) would like to support the idea. More information dissemination is needed too fully meet the impact for the program.

The full impact of this project will not be fully materialized, until perhaps the end of 2006. This is because we have only one half of the video completed and two-three more demonstrations to set up in the region. As we are able to gather information and document the demonstrations themselves, agents will be able to produce educational reading materials and the video series, all of which will then be disseminated through public television stations, trainings/field days and quite possibly Video rental companies.

- c. Source of Federal Funding: Smith Lever, Competitive Grant EPA, USDA-CSREES Water Quality Program
- d. Scope of Impact: State Specific

Key Theme-Water Quality

- a. In Collaboration with the United States Geological Survey (USGS), United States Environmental Protection Agency (US-EPA), and the Cooperative State Research, Education and Extension Service (CSREES) - National Water Quality Program, agents set up demonstrations to promote the Dry Litter Waste Management for Hogs to include Rain Catchments. This system drastically reduces the need for water for spraying out of

piggens and therefore greatly reduces the risk of the leaching of excess nutrients into the ground and surface water resources.

- b. A comprehensive video was produced to help promote the Dry Litter Waste Management system for hogs. The video has been aired on public television for the first time and has inspired a number of farmers to phone in for information or have begun to use the system on their hog farms. Farmers who have implemented the Dry Litter Waste Management system and have noted a great reduction of water used, reduced odor, decreased labor, decreased feed costs and increased happiness of the animals. This has intrinsically reduced the leaching of nutrients from hog waste into ground and surface water resources while improving the productivity of soils receiving the application of compost as derived from the waste management system.

As these efforts progress, there are now many agency collaborators who are aware and are in full support of the project. As a result of our collaboration with the NRCS Office for instance, there are now farmers calling into the NRCS Office to apply for the EQIP as a means to implement the Dry Litter System on their farms. There are also more farmers that know about the system because of these efforts and who are calling in to get information. Although not all piggeries are appropriate for renovating to facilitate the Dry Litter System, the NRCS personnel are committed to providing support to the farmers in this respect and have one farmer on Tinian for which they are designing a Dry System.

The full impact of this project will not be fully materialized for until the end of 2006. This is because we have only one half of the video completed and two-three more demonstrations to set up in the region. As we are able to gather information and document the demonstrations themselves, agents will be able to produce educational reading materials and the video series, all of which will then be disseminated through public television stations, trainings/field days and quite possibly Video rental companies.

- c. Source of Federal Funding: Smith Lever, CSREES Water Quality, Competitive Grant EPA
- d. Scope of Impact: State Specific

Key Theme-Recycling

- a. Here on these small islands with limited space and little to no recycling efforts, there is a high probability for water resources to become impaired. This is due to the fact that hazardous waste materials are often dumped directly onto the ground and left to leach into surface and underground water resources. NMC-CREES along with the Resource Conservation and Development Council of the Marianas (RC&D) teamed up and have identified recycling as a means of redirecting some of the waste away from the dump (literally a dump). A grant was written and approved by USDA Rural Development to implement an Aluminum Recycling Program here on the island of Tinian. Not only will this project contribute to a positive cash flow for the island, but will begin to change the

way community members view their waste. Hopefully, they will soon learn that-not all waste is trash. Currently, there is little interest in keeping the island clean and risk-free in regards to pollution due to discarded waste materials. In fact, locals have become accustomed to simply discarding trash at their convenience and thousands of aluminum cans litter beaches, parks and roadways.

The main objective of this program is to create a paradigm shift in the way people dispose of their refuse. In this respect 85 aluminum recycling collection bins have been purchased and will be strategically placed at participating households and establishments. Our collaborating business associate who is facilitating the pick-up and handling of aluminum (Crushing or melting and sale) can then be collecting the aluminum bins.

This will be the first attempt at recycling of any kind on the island of Tinian and will hopefully evolve into a regional effort to ensure that all islands are recycling as much as possible.

- b. Meetings with the Mayor's Office, NMC-CREES, the Tinian Delegation, the local public works and Department of Environmental Quality have teamed up to form the first ever Recycling task force on Tinian. The goal of this task force is to facilitate the removal of marketable materials from the local dump and begin diverting new refuse away from the dump area. A new partnership has been formed as a result of these meetings between the Errico Waste Management Company and the local 3-M Waste Management Company to begin collecting and marketing recyclable materials.

As a result of the efforts made on Tinian in regards to recycling, a strong partnership has been set up between NMC-CREES and the local NRCS Office, Public works, DEQ/EPA and the Tinian Leadership.

Leaflets, radio advertisements and lectures are currently being created to support the outreach portion of the project. A proposal is in the works to be submitted to EPA to fund an outreach and Recycling/Environmental education program for Tinian Schools.

Possibly the greatest impact of this project has been that many agency collaborators including the Tinian Mayor's Office are now wholeheartedly dedicated to supporting the recycling project to include the segregation and extraction of materials (household and hazardous) from the local dump and the diverting of materials away from the land fill. The momentum that has been building in respect to the dump has inspired a new partnership between our local collaborator and the Errico Waste Management Company. This is the largest waste management company in the CNMI and has strong relationships with Markets abroad. The Mayor is now dedicated to supporting this partnership, as well as, Public Works-Department of Solid Waste.

The full impact of this project will not fully materialize for until the end of 2006. This is because there were major delays in the shipping of the bins to Tinian. Furthermore, the

Mayor's matching contribution has been delayed (but is still forthcoming). The Mayor's contribution is necessary to receive the balance of the grant remaining to produce the radio advertisements and brochures. The time needed to ship the materials purchased with the Mayor's contribution is the last barrier to be broken so that the project can be brought to fruition.

- c. Source of Federal Funding: Smith Lever, USDA Rural Development, USDA-NRCS Resource Conservation and Development Office
- d. Scope of Impact: State Specific

Key Theme-Integrated Pest Management (IPM)

- a. The primary objective of IPM program in the CNMI is to help farmers grow more crops by utilizing various agricultural practices such as crop rotation, resistant varieties, farm sanitation, trap cropping, etc., and applying pest control methods that minimize the use of pesticides, thus eliminating pollution and protecting our limited, fragile and vulnerable fresh water resources. Efforts have been focused on increasing the proficiency of IPM advisors, technicians and farmers in identifying plant pest and diseases to efficiently communicate information, images, and methods of detection and by making the agricultural community more aware of pests and plant diagnostic services. Agricultural development on CNMI is growing and more improved cropping techniques are being utilized to improve the viability of production and reduce dependence on commercial, inorganic fertilizers by enhancing and promoting the use of green/animal manure.
- b. In our long-term efforts to educate the growers and the community on what benefits they can derive through IPM technologies and strategies, we have focused on two major pests, the melon fly and the sweet potato weevil. The adoption of suppression technologies as an on farm immediate relief in controlling these pests and changing their attitudes on proper use of pesticides have been the major contributing factors in the success of the CNMI-wide IPM program. Farmers, cooperators and other stakeholders understanding of the deleterious effects of pesticides in the environment and knowledge of the significance of pest's life cycles and biology have increased and remained above average over the past 4 years. Realizing the benefits of increased crop quality and marketable yield resulting from the reduction in pesticide use, most of the farmers, growers, and the community cooperators have adopted the suppression program.

There is considerable increase in the number of farmers, growers who have learned about the suppression technologies. They have subsequently changed their farming attitudes and have participated fully in our efforts to control melon fly and sweet potato weevils using IPM methods. Production of quality crop, marketable yield has increased by 50-65% in comparison to previous practices. It is also noted that most of the growers have decreased their use of commercial pesticide by almost 40% in comparison to previous practices. Evidently, their understanding of environmental impacts of pesticides has greatly influenced their changing attitude on pesticide use.

- c. Source of Federal Funding: Smith Lever 3d, Integrated Pest Management, USDA CSREES.
- d. Scope of Impact: State Specific

Goal 5: To Enhanced Economic Opportunity and Quality of Life

OVERVIEW

The Commonwealth of the Northern Mariana Islands (CNMI) is an Island Nation with extreme diversifications of ethnicity and cultures. Its population continues to increase at a tremendous rate due to influx of foreign contract workers, despite the Asian economic crisis, which continues to affect the CNMI economy.

The Community Resource Development (CRD) Program oversees the Following units:

- Family Financial Management
- Sewing for Beginners for Families with Limited Resources
- 4H/Youth Development
- Legal Aspects Facing the Older Adults in the CNMI
- Parenting programs.

The goal of all these programs is mainly to empower the people and community leaders in the CNMI to improve the overall quality of their life and seek economic opportunities. Research-based information, education, workshops, training and series of life skills lessons are taught in a non-traditional out of the classroom setting and participants are strongly encouraged to apply the knowledge and skills learned.

A. ACTIVITIES

Numerous mini-workshops, series of life skills lessons and presentations were conducted at schools, village social halls, center for the Man'Amko, youth centers, private day care centers, CNMI Military Support Group and non-profit organizations. Also, easy-to-read educational handouts were developed and distributed to clients during workshops, home visitations and during CNMI Annual events.

B. HIGHLIGHTS

The 4H-Youth Development Program on Saipan, Tinian and Rota continue to play a major role in planning and coordinating the Annual Agricultural Fair for the Youth Division. The Saipan Agricultural Fair Association has committed \$1,000 each year for the procurement of farms hand-tools and educational materials as prizes for the Youth Division.

In July of 2005, the 4-H Clubs on Rota, Tinian and Saipan held their first Official Election of Officers and are also chartered. The Youth Loan (Pilot) Program was launched in 2005. The 4-H Clubs and other chartered youth organization are eligible to apply for such loan.

C. ASSESSMENT

All Family and Consumer Science programs and activities are in line with the approved Northern Marianas College-Cooperative Research, Extension and Education Five Year Plan of Work.

D. FUNDING AND FTE

FTE's: 6.25	PROGRAM COSTS: \$204,936
-------------	--------------------------

Key Theme - Aging

- a. CRD Program was very instrumental in assisting the Saipan Senior citizens (Man' Amko) on how to effectively run and manage their non-profit organization. Officers and committee members took charge in developing a yearlong work plan for the senior participants at the Senior Citizens Center on Saipan. Their work plan is broken down into weekly, monthly, quarterly and annual events for senior citizens.

Some of the weekly activities includes arts and crafts and story time which are conducted at the public elementary schools, their monthly activities includes health walk, field trips and bowling, quarterly activities includes golf tournament and fundraising, selling hot lunches and car wash which usually takes place on weekends. Their special annual event is the Senior Citizens King and Queen Coronation Night.

CRD Program conducted numerous mini-workshops at the Saipan Senior Citizens Center in Garapan, Saipan. The mini-workshops include Power of Attorney, Living Wills and Medical Rights of Patients, Money Management which also include Understanding Bank Statement and Proper Usage of Check Cards,

- b. A total of 260 adults attended two or more of the above-mentioned mini-workshops. 85% are active participants at the Center for the Man' Amko. The remaining 15% were walk-in participants. 100% of the participants have claimed to have gained new knowledge and 90% spent more time questioning their doctors about their prescription drugs and results of their health examination. About 40% now own a Check Card or ATM Cards. The Saipan Man' Amko now run and manages its own non-profit organization. They meet 4 times a year and adopted the Robert's Rule of Order.
- c. Source of Fund: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Family Financial Management Program

- a. The Low Income Home Energy Assistance Program, Residential Energy Assistance Program and Nutrition Assistance Programs referred their programs' recipients to attend a series of lessons on Family Financial Management. The following lessons were taught:

Developing a Budget, Balancing Your Check Book, Budgeting Your Food Stamps, Ways to cut down on Utility Cost and Smart Shoppers.

- b. For 2005, 110 adults attended the Family Financial Management workshops. 90% regularly developed a bi-weekly budget, NAP recipients are budgeting their food stamps to last them until the end of the month. 100% learned the importance of writing a shopping list and understood the tips on Smart Shopping. Before the CNMI implemented the fuel surcharge, 100% of the participants noticed a drop on their power/water bills. 30% of the participants established a Check Card account with our local banks.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Sewing Classes for Families with Limited Resources

- a. Two Sewing Classes for beginners were offered in 2005 strictly for the Low Cost Housing tenants. A total of 48 adults registered, 45 completed the required 12 sewing projects and graduated. Students graduating from this program are given first priority for employment at any garment factories on Saipan. Except for the sewing machines that the students use, all of the other program materials and supplies were donated by the Saipan Garment Factories.
- b. There were over 300 walk-in clients. Many of them were just interested in learning how to sew zippers, how to properly maintain and oil their sewing machines or attended the 1 hour Advance Sewing Classes offered on weekends only. Students who graduated from Sewing for Beginners continue to apply the knowledge and skills learned. 80% now owns a sewing machine and a good number of them continue to sew their children's clothes to school and appreciated the added benefits of saving money. 20% applied for a job in the Saipan Garment factories and were hired.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme – Parenting

- a. The 4-H Youth Development Program and Parenting Program conducted workshops focusing on communication between parents/adults and children, and self-esteem for young children. Workshops consisted of physical activities, group discussions and easy to read brochures. A total 400 parents and elementary age children attended the workshops.
- b. At the end of the workshops, 100% of the participants were more aware of the importance of positive communication and how it improves family ties. All of the students were able to understand and identify between high and low self-esteem.

- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - Parenting

- a. The Family Resource Development (FRD) Program (Parenting) is one that is with many important and extremely difficult tasks. Today's parents face greater challenges than ever before. They are becoming less and less confident in their parenting skills. Although parenting is naturally acquired, some parents still have questions and concerns on parenting skills. The FRD Program has developed a curriculum on various subjects, which include, Building Self-Esteem in Your Child, Positive Discipline, Family Communication and Time Management. These curriculums were developed to accommodate the island's lifestyle and culture. In collaboration with internal and external agencies, lessons were delivered through workshops, conferences, home visits and group sessions.

In 2005, over 500 participants attended 2 to 3 parenting workshops. The workshops were held at various hotel conferences rooms, school cafeteria/classrooms to a family's dining room. Most of the sessions were informal and home-visits were on one-to-one basis and upon the request of the client.

The Program promoted family activities and family valuable times at many events. Such as Pumpkin Carving Contest, Stress Free Holiday Fair and the Family Health Fair. It is important that the community not only learned to improve their parenting skills but also apply the knowledge through participation in various activities.

- b. The outcome of the many workshops that were conducted was positive. Many clients/participants acknowledge the need for these programs and stressed the need for such services. Overall, about 95% of the participants has increased their knowledge on the many issues that were presented during the workshops, home-visits and group sessions. 85% of the home-visit clients have claimed their parenting techniques have changed and that they continue to be more positive with their children in whatever they do.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

Key Theme - 4-H Youth Development

- a. Four, 4-H clubs are officially chartered, two on Saipan, one on Rota and one on Tinian. They are: 4H Youth Mentors Club of Saipan (4H YMCS), Hopwood Jr. High School 4-H Club, Rota 4-H Club and Tinian 4-H Club. At present there are 146 4-H club

members, and the number keeps increasing. The clubs are required to obtain a business license, even though the clubs are non-profit organizations.

- b. With the charter, the clubs are able to begin fundraising for their numerous activities, such as: the pumpkin carving contest, campouts, trip, etc. The 4-H clubs are recognized by the community through their activities. Several community youth centers, the community, and schools have shown an interest in having 4-H clubs in their respective areas.
- c. Source of Funding: Smith-Lever, Fundraising (4-H Clubs)
- d. Scope of Impact: State Specific

4-H Youth Development

- a. The 4-H club held its second Annual Pumpkin Carving Contest. This event was started last year and was such a success that it was decided to make it a 4-H annual event. This event is for kids 8 to 12 years of age. They are allowed to have one parent or an adult to assist them in the carving. However, the kids must do the design and majority of the work. There were 18 participants for this year's event.
- b. The kids who participated got to spend quality time with their parent(s), brother, sister. The 4-H program received a lot of positive remarks from parents and the participants themselves. From the feedbacks from the professional carvers, they said that they would return for next years event.
- c. Source of Funding: Smith-Lever, Fundraising (4-H Club)
- d. Scope of Impact: State Specific

4-H Youth Development

- a. The 4-H program held its 15th annual youth fair in conjunction with the 26th annual agriculture fair. The 4-H youths entered their crops harvested from their farms for the competition. The Agriculture Fair Association (SAFA) once again came through for the Saipan youths through in-kind contribution worth \$1,000. They have been very supportive of the youths in this event.
- b. This year's event was very successful. 40 youths participated in this year's event. All the participants won prizes for their hard work. The club members ran this years' event, from planning the event to making sure judges had their forms all in order. There was also an increase in the participant by 25%. And, from talking to some of the kids, they mentioned that they would be back next year. 90% of the participants said they would participate again in next year's youth fair.

- c. Source of Funding: Smith-Lever, SAFA Contribution
- d. Scope of Impact: State Specific

4-H Youth Development

- a. The 4-H program reached 563 youths through their summer activities: youth computer camp; let's get going camp; KAP cooking camp; summer fun (ages 6 & 7); camp life/project life; leadership; self-esteem; communication; arts & crafts; teamwork; life skills and youth money management mini workshops.
- b. The participants obtained numerous life skills this summer from learning the importance of technology, leadership skills, working with others, creating master pieces, managing their finances, understanding recipes, baking, to having positive attitudes towards themselves and life.
- c. Source of Funding: Smith-Lever and Fundraising (4-H Clubs)
- d. Scope of Impact: State Specific

4-H Youth Development

- a. The 4-H program conducted a container gardening project, 4-H members were taught how to plant several local produce and ornamental plants. They were taught how to mix topsoil, fertilizers and how to apply them. The members monitored the plants they planted during this project. 16 members participated in this project.
- b. 100% of the participants learned how to plant local produce and ornamental plants; they also learned the importance of fertilizers and basic caring of plants. With the knowledge they received from this project, the participant are able to put their skills to work on their own backyard.
- c. Source of Funding: Smith-Lever
- d. Scope of Impact: State Specific

B. STAKEHOLDER INPUT PROCESS

NMC-CREES has established three NMC-CREES Advisory Councils. One on Rota, one on Tinian and one on Saipan. The Advisory council members include stakeholders within agriculture, homemakers, youth, Carolinian community, business community and consumer components.

The Advisory Councils hold quarterly meetings and members discussed the many concerns that were brought up to their attention from farmers, homemakers and community leaders. NMC-CREES held periodic meetings with stakeholders and solicited advice on community needs and priorities. Also, for better ways to effectively serve the community in general, periodic meetings attended by NMC-CREES staff include: the monthly Tinian Soil and Water Conservation District, Saipan and Northern Islands Soil and Water Conservation, Luta (Rota) Soil and Water Conservation District, the CNMI Interagency Watershed Committee, the Head Start Health Advisory Council; the Rota Agricultural Advisory Council, Parent-Teacher Association and other school-based organizations and the Women's Affairs Group.

Other less regularly held meetings attended, which provide inputs from stakeholders on research and extension needs, include the General Farmers' Meetings, the Farmers' Association Meetings, the Sabalu Market Association, the Saipan Agriculture Fair Association quarterly meeting and the 4-H Clubs Officers and Special Committee members.

C. PROGRAM REVIEW PROCESS

NMC-CREES continued to hold formal Merit/Peer reviews of each federally funded research and extension project proposal, prior to submission. All professional level staff members from NMC-CREES are encouraged to participate in Merit or Peer reviews. Stakeholders are also encouraged to participate in the reviews.

The review process is carried out in three steps: First, a draft of the proposal is e-mailed to all of the NMC-CREES staff and other participants for review, suggestions and comments, well before the peer review meeting. Second, the draft of the proposal is revised, based on the comments and suggestions received. Lastly, the revised proposal is submitted to the Director for final review before submittal.

During the review we assess:

- 1) The priority or importance of the proposed project
- 2) The review of literature
- 3) The completeness of the proposal
- 4) The relevance of the proposal
- 5) The quality and scientific value of the proposed research activities and
- 6) The opportunities for external agencies supports and collaborations.

The proposals are revised to incorporate the suggestions given and agreed upon during the merit/peer review meeting. The Director assures that the recommendations for changes are addressed. The proposal is then submitted to the President of the Northern Marianas College for concurrence then it is submitted to the appropriate funding agency.