



# Guam Cooperative Extension Service

1983  
Annual  
Report





**JOSE Q. CRUZ, Ed. D.**  
PRESIDENT

# *University of Guam*

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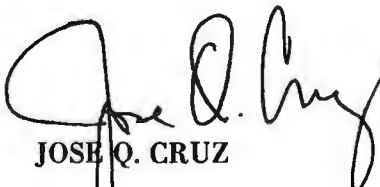
## MESSAGE FROM THE PRESIDENT

To Dean Wilfred Leon Guerrero and the twenty-five faculty and staff of the University of Guam Cooperative Extension Service, our congratulations and Si Yu'os Maase for another year of significant achievement.

Teaching, research, and service constitute the core of our university mission. Of these three, the Cooperative Extension is the most frequently called upon to carry out our mission of service. Whether it is helping the farmer in the field, assisting youth through the multi-faceted 4-H Program, teaching homemakers and youth ways to improve health and nutrition, or conducting a training course in community development, the Extension Service is there to help.

The practical and readily usable information you bring to our island people not only improves the quality of life but upholds the best tradition of land grant institutions.

We hope that the contents of this annual report will stir in our minds "Excelsior"--making better what we are doing.

  
JOSE Q. CRUZ



WILFRED P. LEON GUERRERO  
Dean/Director

# University of Guam

COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
UOG Station Mangilao, Guam 96913



JOSE T. BARCINAS  
Associate Dean, CES

## M E S S A G E

The Cooperative Extension Service (CES) is an informal educational delivery system. Created by the United States in 1914, this unique educational system is based on the belief that human progress could be enhanced if the products of research could be translated to lay language and made available to individuals for a higher quality of decision making.

There is a Cooperative Extension Service in each of the 50 states, the District of Columbia, Puerto Rico, Virgin Islands, American Samoa, Federated States of Micronesia and Guam.

The Guam CES was established soon after the University of Guam acquired its status as a Land Grant institution in June, 1972. Extension carries out programs in the broad categories of: agriculture, natural resources and environment, home economics, 4-H and youth, and community resource development. These are accomplished through personal contacts, meetings, workshops, seminars, demonstrations, training sessions, and mass media.


Presently, the Guam CES is composed of 25 faculty and staff, excluding six with half-time appointments. They are assisted by volunteers, program aides and advisory committees.

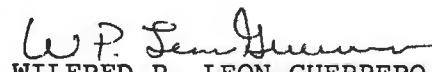
In 1983, activities were focused on increased agricultural production, improved health and nutrition, better farm management and marketing, developing youth skills in productive endeavors and enhancing community awareness on such public issues as spouse and child abuse, stress management and cultural orientation of people new to the island, particularly the military sector.

On request, the UOG Extension faculty are also utilized by our neighboring islands. Workshops, seminars and conferences were conducted on the basis of regional cooperative effort.

This report depicts some of the Extension highlights in the past year (1983).

To you, our readers, we welcome and encourage your input and ideas in order for us to gain a better perspective of how the Extension programs can best serve you.

  
JOSE T. BARCINAS  
Associate Dean, CES

  
WILFRED P. LEON GUERRERO  
Dean/Director



### **Farm Recordkeeping, and Income Tax Workshops**

Agricultural Agents held a series of workshops in October dealing with Farm Recordkeeping, Farm Income Tax and Basic Horticultural Practices.

A Farm Recordkeeping/ Farm Management Workshop was conducted at the College of Agriculture and Life Sciences with Jeff D. Barcinas, Extension agricultural economist, coordinating. About 30 participants representing vegetable, livestock and aquaculture producers were introduced to the basic use and importance of farm recordkeeping in their farm management and marketing decisions.

In conjunction with this workshop a representative of the local Social Security Administration spoke of the benefits for farmers under the agency's social security programs.

The same set of participants attended a Farm Income Tax workshop held by staff members of the Guam Department of Revenue and Taxation and our extension agents.

### **Horticultural Workshop**

More than 40 participants from the Guam Department of Agriculture and other agencies attended a workshop on horticultural practices conducted at the Guam Department of Agriculture in October and November. Led by our senior extension agent, Mr. Jose Cruz, the workshop covered topics on soil, fertilizers, irrigation, seeds, seedlings, pesticides, pest and disease control, and methods of propagation.

Other faculty and staff at the College of Agriculture and Life Sciences provided assistance for the workshops.



### **Pesticide Application Training**

The emphasis of the pesticide program on Guam is training farmers, backyard gardeners, homeowners and other applicators in the correct and safe use of pesticides. The program currently services Guam, Saipan, Tinian and Rota with future programs planned for Kosrae, Truk, Ponape, Palau and Yap.

In 1983, a series of 5 private, one commercial agricultural pest control, two regulatory pest control and two recertification workshops were conducted. There were 103 applicators certified for the first time and 73 recertified. The participants were approximately 2/3 farmers and industrial personnel, and 1/3 backyard gardeners and homeowners.







### **Pest Management, Honeybee Pollination, Forced Pineapple Fruiting Focus of Field Demonstrations**

Increasing crop yield and scheduling harvests were the goals of three field demonstrations conducted in 1983 on selected farms by CES' agricultural agents.

A pest/disease management field demonstration was conducted on two corn farms in northern Guam where usage of appropriate pesticides was regularly monitored and evaluated with respect to pest problems. Corn yields on these two farms have increased by 25 to 50 percent due to the effective reduction of pest/disease damage on the crop. The extension agent in charge of the project has called the results a "definite breakthrough."

A similar project aimed at improving cucumber yield was conducted on a Yigo farm in northern Guam where honeybees were utilized to pollinate the crop. Bees are the most reliable pollinators of cucurbits. Unfortunately, bees are not naturally abundant on Guam. Wildland fires, pesticides and urban development have reduced their numbers.

An innovative farmer in Yigo participated in this project under the supervision of an agricultural agent. A beehive located beside the farmer's cucumber field resulted in improved pollination and a 30 percent increase in cucumber production. Following this demonstration, a honeybee pollination workshop was held at the College of Agriculture and Life Sciences where more than 40 farmers participated.

In another farm project, Extension Agents demonstrated the use of calcium carbide to stimulate flowering in a small portion of a pineapple plantation in Southern Guam. Started in June, the plants produced mature fruit in December, 165 days after they were treated with the chemical. The technique, called "forcing," enables growers to schedule their harvests and minimize marketing problems. On Guam, pineapple tends to ripen naturally during the months of June and July.

During a December tour of the treated pineapple farm, agents described the best time to force pineapple plants is during a cool afternoon when the temperature is down and when small amounts of water collect in the heart or center of the pineapple plant. When a one-gram lump of calcium carbide is dropped into this part of the plant, contact with the water starts a fizzing action where acetylene is produced. This gas, closely related to ethylene, is absorbed by the plant and initiates the flowering process. Six weeks later, a red bud will emerge in the heart of individual plants that have been successfully treated. At the sixth month following treatment, the flower will have developed into a fruit ready for harvest.





### **First Governor's Symposium on Aquaculture**

The potentials and problems of aquaculture on Guam were the subject of discussion during the First Governor's Symposium on Aquaculture held at the Top O'the Mar October 14, 1983.

The symposium, which was held in conjunction with the World Food Day celebration, was aimed at increasing public awareness of the opportunities in aquaculture, both as a food source and a potential industry.

Speakers led by the Governor of Guam addressed the problems of aquaculture in terms of what the farmers, government, business and military can do to make the industry viable. The general feeling that was expressed centered on the fact that aquaculture in Guam has the potential for becoming a major industry for satisfying local needs. Export potentials also exist, but the people at the symposium were skeptical about this part of the picture for the immediate future.

It has been ten years since the feasibility of aquaculture on Guam was seriously examined. Although a thousand acres have been identified as prime aquaculture sites, only 70 acres of ponds have been built and approximately 50 percent of these ponds are stocked. This underscores the importance of building local fish hatcheries to provide an adequate supply of fish juveniles for fishpond operators. The lack of hatchery facilities and the problem of marketing aquaculture products were identified as major concerns. Presently, post larvae stocks come in by air from Hawaii in limited quantities. The hatchery maintained by the University of Guam Marine Lab supplies a very small fraction of the farmer's stocking needs.

Marketing aquaculture products is another facet of the business that is being explored by the local aquaculture association and the Cooperative Extension Service. There is a big demand for freshwater prawns and farmers need to supply the product on a regular basis.

Aquaculture products are also steadily gaining acceptance in terms of taste, quality and sanitation standards.

### **Field Demonstrations for Drip Irrigation, Varietal Selection and Soil Fertility**

Guam farms, especially in the northern area, need water. Seven vegetable growers who used a drip irrigation system saved as much as 15 to 30 percent in irrigation water and also increased their crop yields by 25 to 50 percent. One of these growers hosted a tour for other farmers to demonstrate his water-saving irrigation facility.

Island vegetable growers are constantly faced with the problem of identifying just what variety or varieties are best adapted to Guam's climatic conditions. Working closely with Extension Agents, 12 farmers used portions of their farms to screen certain varieties of corn, tomato, watermelon and K. W. beans. Except for watermelon, the farmers succeeded in growing a variety or two of tomato, corn and K. W. beans.

Many island farmers do not fully realize the benefits of using the right types and proper methods of applying commercial fertilizers. About 31 farmers participated in trials demonstrating the use of fertilizers. The types of fertilizers in the demonstrations included: high phosphate fertilizer as pre-plant application, ammonium sulfate as sidedress in highly calcareous soil, and "pinpoint" or "in-furrow banding" versus broadcast application of preplant fertilizer in calcareous soil.



#### 4-H Communications Project

Early in 1983, the 4-H "Rainbow" club from the village of Barrigada decided that they would begin a communications project. The activity was then planned to include an introduction to the various mass media outlets in Guam. The objective was for members to become more familiar with television, radio, newspaper and print media production.

With the help of the College of Agriculture and Life Sciences Media Specialist, the club leader and a 4-H agent arranged for complete tours of the major electronic and print media production facilities in Guam. Every other week, they all visited commercial mass media plants, guided by an employee or, in some cases, the manager of each.

They visited the daily newspaper, the bi-weekly paper, a combination AM-FM—radio and T.V. station, the public broadcasting television station, the most prominent independent media production agency in Guam, an independent television production studio, a prominent AM radio station, the only cable television company in Guam and our own Cooperative Extension Service media center.

Plans are contemplated for visits to print shops and actual "hands on" experience at radio and television stations in the future. Members may get the opportunity to see their impressions published in one or both of the newspapers. Since the membership of the club is entirely female between the ages of 13 to 15, the project assumed a unique career-oriented character. For instance, the members wanted to know how many women were involved with the management and production of the products of mass media in Guam. Previously, the club engaged in camping, food preservation, cooking, nutrition and sewing. But it looks like they will definitely be doing more in communications.

#### 4-H Dress A Living Doll

Nine years ago the 4-H Clubs of Guam began a special Christmas project known as Dress-A-Living-Doll.

In cooperation with the Department of Public Health, economically disadvantaged children between the ages of one day to 16 years are identified. What the program does is to provide these children with new clothing in hopes of brightening their spirits during the Holiday Season. Donations are solicited in cash or clothing for a particular child.

In 1983 more than 115 children were dressed. 4-H members and donors also provided Christmas trees, candy, toys and a party for some of the children. The monetary figure has been placed at \$4,500, and that does not include the voluntary work of the 4-H leaders, College staff and parents of members who participated.

It is the hope of 4-H to reach more and more needy children with this island-wide program.

#### \$2,000 Grant for 4-H

Guam 4-H'ers may soon be able to take a certification course on computers and learn more about the potentials that computers provide.

A \$2,000 grant from the Gannett Foundation was awarded through the Pacific Daily News in Guam. The proceeds will be used to buy equipment for the 4-H Computer Career program.

The goals of the projects include promoting greater computer literacy and competency among 4-H youth.





### **Summer Youth Fisheries Workshop**

Sixty people between the ages of 12 and 16 completed the first Summer Youth Fisheries workshop conducted by the Cooperative Extension Service and the University of Guam Sea Grant program during the summer.

The workshop provided the youngsters opportunities to learn about various fishing techniques including lure tying, spin casting, net fishing and spear fishing. The boys and girls were also taught methods of seafood handling and preparation. The participants also gained valuable knowledge about the ancient Chamorros and their reliance on the sea, the ocean environment and its ecology. Boat safety was also emphasized. Beyond acquiring basic knowledge and skills in fishing, the youngsters also developed greater self-confidence and self-reliance.

Trust and loyalty among people who depend upon the sea for recreation and family income was also a central theme in the workshops.

### **Fifth Annual Science Fair**

The effects of chlorine on Guam's reef caught the eye of judges at the 1983 Science Fair held at the University of Guam. For his project, Kin Reyes, a student from the Inarajan Middle School, won the top honor at the Fifth Annual Science Fair co-sponsored by the Marianas Chapter of the Armed Forces Communication Electronics Association and the 4-H program.

Two hundred and thirty six projects from over 300 students were displayed at the fair. Biology, physical science, ecology and earth science, chemistry and communication electronics were the topics designed for competition.



### **Bicycle Safety Program**

Bicycling is a popular pastime for many young people on Guam. With the increasing number of bicycles, however, safety has become a community concern. 4-H goals of the Bicycle Safety Program are to teach safe riding habits, rules of the road, bicycle care and maintenance, and improving the rider's skills.

During the year, four bicycle rallies and safety workshops were conducted with 100 youths participating. The youngsters learned the rules of the road, making the proper signals and operating their bikes safely. One of the most successful events was a bicycle safety rally and clinic presented to 33 youths from the Naval Station. The 4-H motto, "Learn by Doing" became a reality during all of the Bicycle Safety Rallies.





### **Chamorro Food Preparation**

The Chamorro cooking program has been developed to help residents of Guam improve their diets using local products and demonstrating cooking methods the Chamorro way. Food preparation demonstrations and workshops were conducted in villages, schools, military bases and homes of participating homemakers.

Of the 2,788 participants, 65% were homemakers, 25% were youths and 10% were school teachers. Military wives that attended the workshops are now able to prepare the most typical Chamorro dishes. Local young homemakers and other youths have upgraded their skills in cooking their native recipes. A recent survey showed that 75% of the participants are practicing or have adopted the Chamorro cooking methods in preparing food at home.

### **Clothing Workshops**

Sewing workshops are continually offered throughout the year. Home construction of garments can mean a savings of as much as 50% in clothing purchases. Besides the monetary advantage, sewing provides personal satisfaction and pride in work well done. It is an excellent way to spend leisure time wisely.

Some of the Cooperative Extension Service workshops in sewing included:

**Beginning Sewing** --intended for people who haven't done any sewing. It starts with the study of the sewing tools and the sewing machine, how to use the ready made pattern and how to alter them, and finally sewing at least 2 projects.

**Intermediate Sewing** --is for those who know how to sew but still feel uncomfortable with it.

**Advanced Sewing**—includes highly intricate pattern design, pants, evening wear, or delicate fabrics.

**Drafting Your Own Patterns** --participants are taught step-by-step how to draft or make their own basic patterns. Out of the basic patterns, they create the style patterns to conform to the garment cut or design they like.

**Children's Clothing**,—making casual a dress, a party dress, a blouse and a skirt, and pants are taught. Basic designs or patterns are made according to sizes.

**Sewing Men's Garments**—makes use of the commercial pattern. Men's garments usually call for different techniques and methods of construction.

**4-H Sewing**—runs from the very simple to more complicated articles depending upon the ages of the children. It may be a simple dish towel with decorative stitches to gain skills in operating the sewing machine and to follow stitching lines. It can be a blouse, a dress or a skirt for the older ones.

**Sewing for the Home**—includes learning how to measure and to compute for yardage, and to sew different kinds of beadsreads, different kinds of curtains and draperies, throw pillows and decorative pillows, small appliance covers, and tablecloths.





## EFNEP—A Year After

The Expanded Food and Nutrition Program (EFNEP) is now one year old. Since its inception the staff has worked with 121 families and 731 young people in Guam.

Families who have participated in the program have learned about nutrition, food preparation, food safety, food buying and meal planning. Special lessons on weight loss have also been popular. Some of the responses from nutritional aids working with the program are recorded here.

“A homemaker I worked with did not like to eat vegetables. We concentrated our lessons on fruits and vegetables. I demonstrated making different dishes that include vegetables using recipes from our lessons. Now she eats vegetables every day.”

“One of the most rewarding moments of my job was to see one of my homemakers get enthused with the project. She was so anxious to go on the supermarket tour that she called me three times the day before we were to go to be sure that I remembered and that she had the time right. After the tour, she wanted to know when we could do it again.”

“Three of my clients wanted to lose weight. I taught the lessons on weight reduction and they are now eating less calories, drinking less soda pop and are doing some exercises.”

“One of my clients has been grocery shopping every week and spending about \$125.00. Now that I’ve taught her about budgeting and food buying, she sticks to her grocery list and is saving \$25.00 or more every two weeks.”



## Stress Management

The lifestyle of Guam’s people is changing rapidly. Decision-making is continually becoming more complex. While there appears to be an increased awareness of and interest in personal health, an increase in physical and health care treatment seems to reflect a stressful society.

The objectives of the program are to: 1) increase awareness among the public at large of the symptoms and dangers of mental stress and poor health, and 2) provide information as to means of relieving or reducing excessive mental stress.

In 1983, promotional efforts for the program included newspaper articles and a public education television broadcast on running safety. Presentations, workshops and seminars were also conducted in the areas of: managing stress, anxiety and frustration; what is stress; stress and the body; relaxation techniques; and life management skills.

During an annual seminar for clerical workers (about 400 people attended), CRD staffer Carmen L.G. Pearson talked about “Burn Out on the Job.” The topic has elicited so much interest that a training course for other “trainers” on “Burn Out” was later developed and conducted. The course included topics such as: understanding the symptoms of burn out; the burn out cycle; learning to refuel; and, prevention and the work environment. Ten people are now trained to address the needs of the community in this area.

In related activities, seminars on mental and emotional health of families were also conducted both in Guam and in Ponape. Slide and videotape presentations were used to facilitate discussions in the areas of family dynamics, child abuse and neglect, spouse abuse and adolescent abuse.



## Leisure and Cultural Education

About one-third of Guam’s residents are in the military. Monthly orientations regarding the culture and customs of the Chamorro-Guamanians are conducted at the request of the Navy Family Service Center. The emphasis is to lessen the “change” shock or “culture shock” of newly-arrived military families and to enhance military/civilian relations.

Both military and civilian people have benefitted from the orientation, with many of them indicating they have learned a lot in cross-cultural human relations.



### **Health and Nutrition Survey**

Health and nutrition was the subject of an islandwide survey of families conducted in 1983 by the Community Resources Division.

Funded by USDA, the project was a cooperative effort of the University of Guam, University of California (Berkeley) and the Western Human Nutrition Research Center (San Francisco).

The survey was aimed at studying food intake of family members for a three-day period. Related health and socioeconomic information was also collected.

### **Teletips System Innaugurated**

"Teletips," a telephone information service sponsored by the Cooperative Extension Service, officially opened for the public on Monday, August 29 of 1983. The system provides short, pre-recorded telephone messages on a variety of subjects of interest to the people of Guam. A directory, listing all of the recorded topics was distributed throughout the island and is now available upon request. The Guam Telephone Authority agreed to assist and mailed a copy of the directory to every telephone subscriber in Guam.

To innaugurate the service, University of Guam president Dr. Jose Q. Cruz made the first call at 8:30 a.m. on the innauguration day from his office. Since then, the Teletips operator has handled an average of 15 to 20 calls per day.

The messages are generally three minutes long and cover basic information in specific areas. A caller must dial one of the TELETIPS numbers listed in the TELETIPS directory and an operator will answer. The caller then requests a topic by number or subject as it appears in the directory. The operator will play the message. If the caller wants a copy of the message mailed to his or her address, the operator can be contacted again for that free service.

Messages have been recorded on topics in agriculture, health and safety, child development, home gardening, youth activities, information on typhoons, consumer information and much more.

The system has 125 topics at the present time and plans are underway for expansion to more than three times that number within the next 12 to 14 months. If people want more information about TELETIPS or to suggest topics, call 734-4404 or contact anyone at the University of Guam College of Agriculture and Life Sciences.



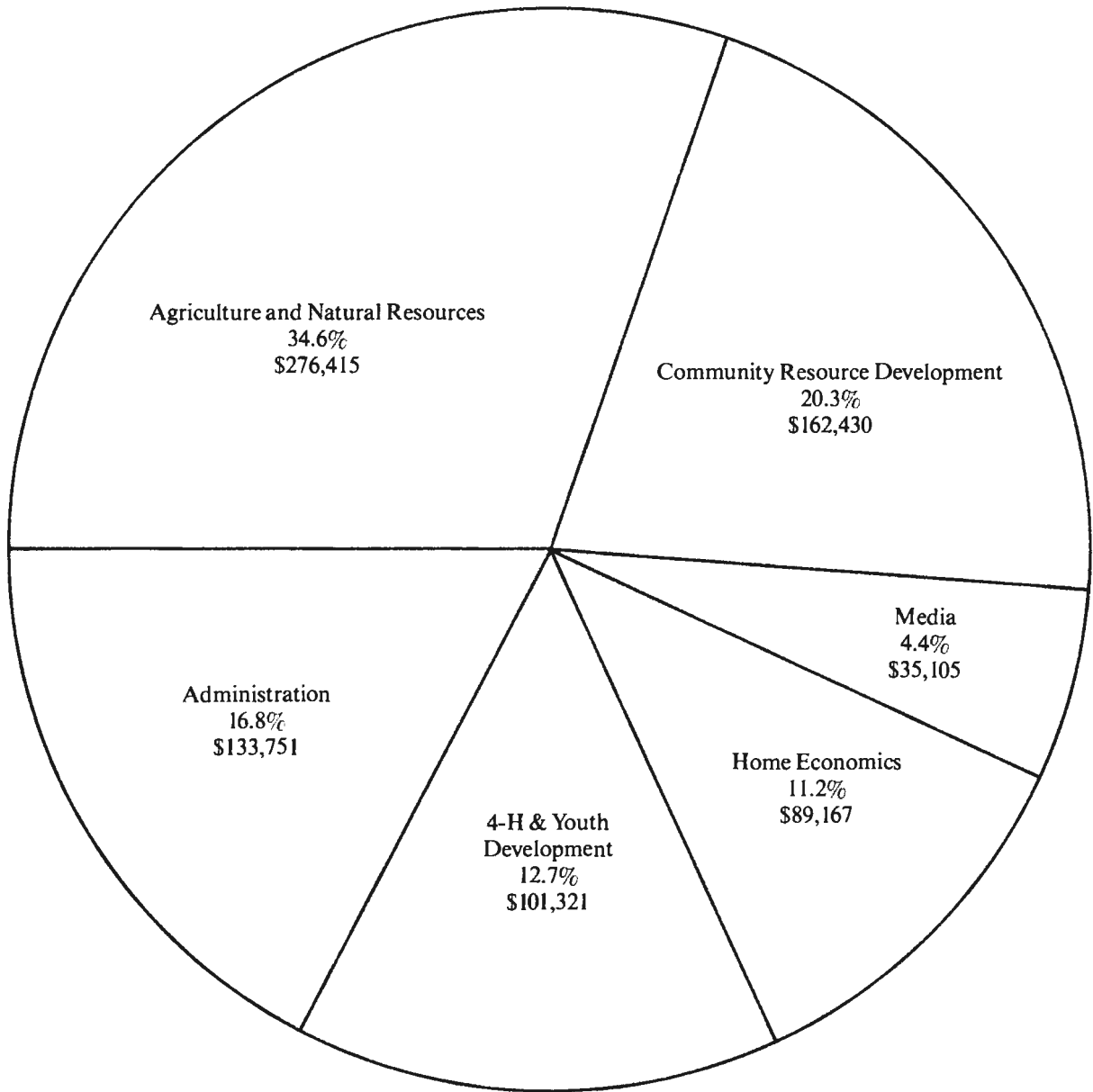
**Clientele Contacts, By Racial-Ethnic Groups,  
All Program Areas, FY 1983**

<b>Racial-Ethnic Group</b>	<b>Number of Contacts</b>	<b>Percent</b>
White-not of Hispanic Origin	25,096	25.0
Black-not of Hispanic Origin	1,079	1.1
Filipinos	14,866	14.9
Chamorros	50,491	50.4
Asian or Pacific Islander	8,645	8.6
TOTAL	100,177	100.0

**CES Professional Staff Years, By Program Area  
FY 1983**

<b>Program Area</b>	<b>Staff Years</b>	<b>Percent</b>
ANR	9.3	39.9
CRD	4.3	18.5
H.E.	5.1	21.9
4-H	4.6	19.7
TOTAL	23.3	100.0

**College of Agriculture and Life Sciences  
Cooperative Extension Service  
Budget—1984  
Total-\$798,189**



The Cooperative Extension Service offices are located in the College of Agriculture and Life Sciences building on the U.O.G. campus next to the field house. The University switchboard numbers are: 734-2921-9.

**Program Area Numbers are:**

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Agriculture and Natural Resources - 734-2575, 734-2518.  
4-H And Youth - 734-4753.  
Home Economics - 734-2562.  
Community Resource Development - 734-2506, 734-2189.  
Media Center - 734-4404.  
Teletips - 734-2136, 734-2166, 734-2172.