

**PLGA's
Agricultural Development in the
American Pacific (ADAP) Project**

**Project Progress
Reports**



Work from the period July to December 2008

**Presented at the
ADAP Board of Directors Meeting
January 28-29, 2009
Honolulu, Hawaii**

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PLGA/ADAP Introduction

The Agricultural Development in the American Pacific (ADAP) Project was formally authorized in the 2008 Farm Bill, as an addition to the High-Priority Research and Extension Areas (SEC. 7204) of the Food, Agriculture, Conservation, and Trade Act of 1990:

“(45) AGRICULTURAL DEVELOPMENT IN THE AMERICAN PACIFIC REGION.—Research and extension grants may be made under this section to support food and agricultural science at a consortium of land-grant institutions in the American- Pacific region.

With the inclusion of the Agricultural Develop in the American Pacific (ADAP) Project in the 2008 Farm Bill, we have expanded our partnership to include University of Alaska Fairbanks; the Pacific schools share with Alaska the same issues with regard to community isolation, distance education challenges, and cultural sensitivity. Our traditional partners (University of Hawaii, University of Guam, Northern Marianas College, College of Micronesia, and American Samoa Community College) and the University of Alaska Fairbanks, have decided to create a new organizational framework called the Pacific Land Grant Alliance to begin addressing multi-sector issues that are interconnected with agriculture. Our larger focus is on connecting our small communities into a larger network of collaborators with the goal of regional sustainability. We are going to employ a systems approach to solution development. Toward this end, we will continue in FY2010 to work on the following projects: Food Security, Professional Development, and Communications, Information, and Publication Services. Only by growing together can we achieve a strong regional coalition to serve our local communities and neighboring communities. This coalition also provides ADAP with a larger footprint now making it available for consortium funding.

ADAP Funding Levels

ADAP Year	Fiscal Year	Actual ADAP Budget	Annual Change (Rescission)
Year 10	FY1997	\$533,403	
Year 11	FY1998	\$533,403	0.00%
Year 12	FY1999	\$527,904	-1.03%
Year 13	FY2000	\$527,904	0.00%
Year 14	FY2001	\$526,743	-0.22%
Year 15	FY2002	\$516,672	-1.91%
Year 16	FY2003	\$513,314	-0.65%
Year 17	FY2004	\$458,725	-10.63%
Year 18	FY2005	\$454,971	-0.82%
Year 19	FY2006	\$450,347	-1.02%
Year 20	FY2007	\$0	
Year 21	FY2008	\$345,950	-23.18% from Yr19

2008 Farm Bill Authorization for ADAP

Year 22	FY2009	\$ _____	
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Food Security Project

Project Coordination Team:	ADAP Project Manager and Regional Coordinators	
Funding Allocations and Expenses:	Year 21	\$68,950

PROBLEM STATEMENT AND POTENTIAL SOLUTION

The aim of the Food Security Project is to develop avenues for communities to provide a balanced diet to all households within the United States-Affiliated Pacific Islands (USAPI). Further, our aim is to ensure that these food sources are safe from the effects of economic recession, environmental change, labor shortages, and local, national, and international trade tariffs. Long-term food security requires that each island have sustainable agriculture, both on a small-scale and commercial basis. By providing opportunities for increased food security, we can positively influence our small island economies. This project will also empower communities and individuals to make informed decisions about their health, through a healthy, well-balanced diet. A project of this scope requires a concerted effort to garner community support throughout the entire process. With the help of local community organizations, church organizations, and local government resources, we aim to create an environment for change.

For FY2010, the ADAP project will build on the momentum of the regional two-day Food Security meeting held in November 2008. During the remainder of 2009, we will be conducting local and regional food security forums to discuss the concerns of local stakeholders and to begin to outline plans for where the skills of our institutions can have a significant impact on food security. For 2010, we will meet again as a region to begin implementing small-scale, community-focused projects. Our plans are to attract additional funding to our effort, with ADAP funds as seed money. Findings from community projects will be shared with the region; successes in Saipan will help farmers in American Samoa; educational products developed in Hawaii and Alaska will help community teachers across the Pacific. Funds will be spent for salaries for educational specialists, laboratory and plant propagation specialists, local project coordinators, a project manager, for meeting travel, and on supplies for community demonstration projects. In addition to Food Security, the ADAP project will also work to support the Professional Development in the Land Grant Institutions by supporting leadership workshops, computer workshops, and tuition reimbursement programs for staff members who pursue further education.

OBJECTIVES

- Match appropriate agricultural technologies to community and island needs.
- Develop an integrated program that allows community members to make informed decisions about a healthy diet through sustainable, backyard agriculture.
- Identify government level challenges to sustainable region-wide agriculture, such as trade tariffs and agricultural water rights.

- Develop working groups to explore each island's challenges to sustainable agriculture and food security, and explore the cultural and economic barriers to island agricultural sustainability.
- Develop a 5-year preliminary roadmap to island-wide, countrywide, and region-wide food security.

RESULTS AND ACCOMPLISHMENTS FOR THE PERIOD: JULY TO DECEMBER 2008

- At ASCC, there were three participants from the American Samoa Community College to attend the ADAP Food Security working group in Honolulu, Hawaii on November 13 & 14, 2008. Attendees were: ASCC ADAP Director, Tapaáu Dr. Daniel Mageo Aga, American Samoa Government Department of Agriculture Director, Mr. Peter Gurr and ASCC CNR Tissue Culture Laboratory Manager, Ms. Emily Ilaoa. Upon returning from the ADAP Food Security working group meeting, ASCC CNR Dean Aga initiated the organizing of a Food Security conference in American Samoa.
- From COM, three COM staffers participated in the ADAP Food Security working group in Hawaii.
- From NMC, three NMC staffers participated in the ADAP Food Security working group in Hawaii.
- From UOG, two UOG staffers participated in the ADAP Food Security working group in Hawaii.

IMPACT OF THE PROJECT TO DECEMBER 2008

- At COM, the November Food Security meeting facilitated better understanding of the food security and insecurity issues in the U.S. affiliated Pacific Islands and highlighted the need to make informed decisions due to the severity of the situation in our island communities.
- At NMC, the November meeting gave our department a greater perspective in the needs of island nations. Because of such, our stakeholders will be given a venue to address production and marketing issues.

UPCOMING ACTIVITIES: JANUARY TO JUNE 2009

- On February 18 & 19, 2009 the American Samoa Community College in collaboration with the American Samoa Community College Department of Agriculture will host the first "ASIASIGA: the State of Food Security in American Samoa" conference in Pago Pago, American Samoa. There will be three off-island speakers to present at the conference: Dr. George Kent, UH Professor, and two possible Secretariat of the Pacific Community (SPC) presenters. In addition to off-island presenters, ASCC CNR invited local presenters from the government (Marine & Wildlife Resources, Environmental Protection Agency, Department of Agriculture), private sector, non-profit organizations (American Samoa Local Farmer's Coop.) We anticipate that the two-day conference will explore issues, raise awareness, and provide ideas and direction for future food security and self-reliance in American Samoa. ASCC is targeting two hundred participants for the conference. We will write

- an exit report of the conference, review the impact of the conference, and follow-up on an action plan.
- COM will continue to engage other American-Pacific governments and organizations on ways in which the complex issue of food security can be addressed.
 - At NMC, as a result of the initial meeting, our department is scheduled to host an Agriculture Summit on February 11-12, 2009. The purpose of this summit would be to revive the Commonwealth's agriculture industry through addressing current barriers. It is being held to bring forth the minds of high-level decision makers in the CNMI and to listen to the farmers, ranchers, business, and industry representatives that constitute our stakeholders. This project was important in that it gave us a better understanding of the social issues associated with food production.
 - At COM, as a result of the Food Security Meeting, we will hold a series of workshops targeting specialty crops that are currently being underutilized and sponsor an Agriculture Summit and follow up reports on action items brought up.
 - At UOG, we will be conducting a seminar, inviting the community and select groups, to determine what the general public knows about food security and their interpretation of "what is food security".
 - At UH, we will build a Food Security website and work to combine the findings from across the Pacific into an integrated plan.

Bioenergy Feedstock Assessment

Principal Investigator:	Goro Uehara (UH)	
Co-PIs:	Robert Paull (UH) and Mari Marutani (UOG)	
Project Manager:	Richard Ogoshi (UH)	
Funding Allocations and Expenses:		
	Year 18	\$35,610
	Year 19	\$5,261
	Year 21	\$0

PROBLEM STATEMENT AND POTENTIAL SOLUTION

Pacific Island nations are particularly vulnerable to the supply shortages and volatile prices of fossil fuels. Most islands import more than 90% of their transportation and energy fuels. Thus, there is an urgent need to develop local energy production capacity. Vegetal based fuels or biofuels produced from locally generated biomass on small to medium farms are a possible solution to decrease fossil fuel dependency in the Pacific Islands. Biofuels have significant environmental benefits over fossil fuels including low sulfur content, being carbon-dioxide neutral, and decreasing waste entering land-fills. Furthermore, establishment of biomass-based energy systems will create new jobs and improve local economies.

Biodiesel and ethanol are two promising candidate biofuels suitable for transportation and energy generation. The development of domestic feedstocks for conversion into biofuels is essential for increasing island energy security. An important challenge is the identification of feedstocks and conversion technology amenable for commercial production on small to medium farms with the environmental resources available on tropical and subtropical islands. ADAP-member nations contain a diversity of non-traditional plants that have potential as energy feedstocks whose yields could surpass traditional energy crops. The combination of the University of Hawaii's and University of Guam's experience in bioenergy, agricultural production, and soil science makes a strong team to identify energy feedstocks for the Pacific Islands. The proposed project will evaluate oil crops, cellulosic biomass, and commercial waste for use as feedstocks for bioenergy production. This investigation will provide baseline data essential for future studies to improve the energy security in the Pacific Islands.

The project will generate baseline yield data for potential energy crops in climatic/environmental conditions and farm sizes found in the Pacific Islands. In addition, the project will assess the availability of commercial waste streams in ADAP-member islands and small scale conversion technology for bioenergy production. It is expected that the baseline data generated by this project will lead to larger, more comprehensive collaborations in the future. This information will be valuable for developing possible solutions for Hawaii and Pacific Island nations to decrease their fossil fuel dependency and increase their energy security.

SCOPE OF WORK

The purpose of the project is to provide the foundation for developing solutions to reduce fossil fuel importation to the Pacific Islands. To that end, we will investigate

candidate energy crops, commercial waste streams, and small scale conversion technology that have the potential to be a part of the solution. The project will focus primarily on *Jatropha curcas*, coconut (*Cocos nucifera*), and fish oil for biodiesel production and *Panicum maximum* (guinea grass) for ethanol production. *Jatropha*, coconut, and guinea grass were chosen for their low resource input requirements, especially water, and their ability to thrive on poor soils, which promotes land reclamation and inhibits soil erosion. Crops, waste streams, and conversion technologies will be evaluated for small scale and larger production potential to reflect the range of environmental resources found in the Pacific Islands. The project will accomplish the following objectives:

- **Objective 1** Evaluate the technical and economic feasibility for producing biodiesel from *Jatropha curcas* in the Pacific Islands.
- **Objective 2** Evaluate the potential application of commercial waste streams and small scale conversion technology for energy production in the Pacific Islands.

RESULTS AND ACCOMPLISHMENTS

Objective 1: Optimizing yield of *Jatropha*

Report from January 2008:

Ten months after the start of the *Jatropha* trial at the Poamoho Experiment Station, the first seed harvest was completed. In the population density experiment (10 000, 20 000, and 40 000 trees/ha), the overall average yield was 78 kg of dry seed/ha. The treatment differences were not statistically significant at the 5% level of probability. This seed yield is equivalent to 35 liters of oil/ha. Seed and oil yield are expected to increase as the trees mature.

A chance occurrence generated new opportunities to optimize *Jatropha* yield. A brushfire swept through the experiment station this past August 2007 and burned 72 of the 457 trees in the population density trial (see Photos 1 and 2). The burned trees were noted. In November 2007, these same trees that were burned initiated flowering (see Photo 3). Trees adjacent to the burned trees did not. This suggests that burning trees induced flowering. If this mechanism can be understood, it may be possible to force flowering and fruit production year round.

One of the original objectives of this project was to determine the irrigation requirement of *Jatropha*. However, the La Nina event in 2008 is bringing heavier than normal rains to Hawaii and would minimize the treatment differences in the irrigation trial. So, a proposal is suggested to change the objective of the irrigation experiment to instead study flower inducing techniques. The hypothesis is defoliation or the plant hormone ethylene, a by-product of burning, plays a role in flowering. The treatments for the new experiment will include application of ethrel (an ethylene pre-cursor) and defoliation by manual, thermal (steam or flame gun), and/or chemical (salt spray, urea spray, or paraquat) means.

Report from July 2008:

A critical factor in *Jatropha* production seems to have emerged since January. Seed production dropped dramatically during the winter to essentially zero. Shade is the presumed cause of the seed yield loss.

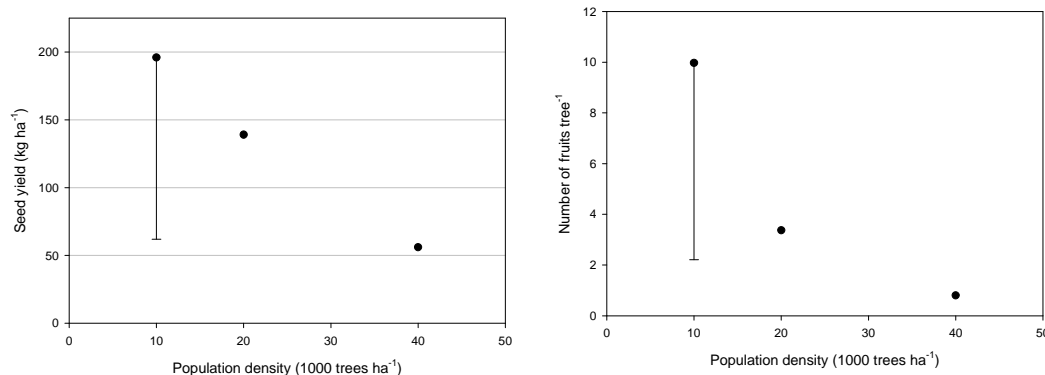
The percentage of trees that bore flowers and fruits was greatly reduced as tree population density increased (figure 1). At the lowest population density, about 1/4 of the trees did not produce flowers. The proportion of flower bearing trees continued to decrease as density increased. The greater proportion of trees bearing flowers than fruits indicated significant fruit abortion. The presence of insect pollinators and no symptoms of nutrient- or water-stress make these unlikely factors of the aborted fruit.

Solar radiation seems to be crucial for seed production. As tree population density increases, self-shading increases, too. Coupled with relatively low solar radiation during the winter months, flower and fruit abortion may have been exacerbated. Should this working hypothesis be confirmed as the trial progresses, managing light impinging on the tree leaves would be crucial. Rowspace and population density will be essential management recommendations that change from location to location.

Report from January 2009:

The seed yield of the *Jatropha curcas* trees at the Poamoho Experiment Station, Oahu, Hawaii, is gradually increasing. The mean seed yield over the summer of 2008 was 195 kg ha⁻¹. In comparison, mean seed yield was 77 kg ha⁻¹ during the summer of the first year.

In this second summer of observation, seed yield decreased significantly at high population density (figure 1). Population density affected seed yield by reducing the number of fruits tree⁻¹ (figure 1). The other yield components, number of seed fruit⁻¹ and weight seed⁻¹, were not significantly affected by population density (figure 1). Low fruit set at high population density is the main yield component that reduces yield.



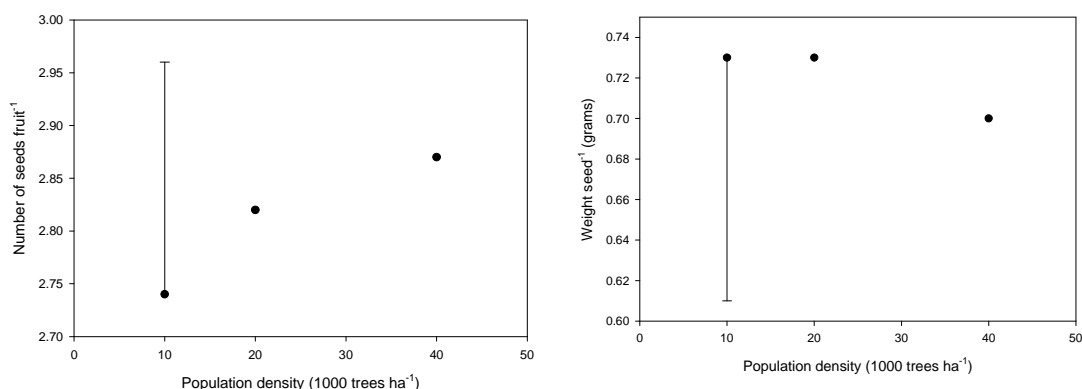


Figure 1. The effect of population density on yield, number of fruit per tree, number of seeds per fruit, and weight per seed of *Jatropha curcas* planted at Poamoho Experiment Station, Oahu, Hawaii, during the summer of 2008. Vertical lines are least significant difference at the 0.05 level of probability.

Objective 2: Feedstock Assessment

Dr. Mari Marutani, University of Guam, made a presentation entitled “Bioenergy feedstock assessment in the Western Pacific Islands” to the 21st Pacific Science Conference held in Okinawa, Japan, on June 12-18, 2007. The abstract of this presentation is published in the proceedings from this conference.

Citation:

Marutani, M., G. Uehara, R. Paull, R. Ogoshi, B. Turano and S. Afaisen. 2007. Bioenergy feedstock assessment in the Western Pacific Islands. Presented at the 21st Pacific Science Congress, Diversity and Changes: Challenges and Opportunities for Managing Natural and Social Systems in Asia-Pacific p.115 (Abstract).

UPCOMING ACTIVITIES: JANUARY TO JUNE 2009

Work is complete at the University of Guam. University of Hawaii will complete final report and expend all remaining funding by March 31, 2009.

Management Services Project

Core Project

Project Coordination Team:	ADAP Project Manager and Regional Coordinators	
Funding Allocations and Expenses:		
	Year 19	\$234,056
	Year 21	\$196,981

PROBLEM STATEMENT AND POTENTIAL SOLUTION

Administrative services and program support are essential for planning and implementing ADAP activities for the five Land Grant institutions to collaborate on research, extension and training activities. Management Services is the primary means of collaboration for the ADAP Project.

Management Services includes the Home Office staff (project manager, coordinator and educational media specialist) based at the University of Hawaii with regional coordinators at each ADAP institution. The Home Office is responsible for organizing, planning, coordinating and providing overall support services for the ADAP project. They administer the USDA grant through the Research Corporation of the University of Hawaii (RCUH). Funds are allocated to the ADAP institutions in accordance with the plans of work, but distributed on a cost reimbursement basis. The Home Office maintains a fiscal system consistent with the needs of participating fiscal institutions, RCUH and USDA. Home Office staff prepares technical and administrative reports that promote the functions and accomplishments of ADAP. The Home Office provides administrative support for all UH-based ADAP projects. The regional coordinators are the link for the Home Office to communicate with the ADAP directors and project personnel throughout the region. Regional coordinators also provide support services to the project principal investigators and cooperators.

Management services is responsible for organizing the semi-annual ADAP board of directors meetings, at which the ADAP directors, project manager and coordinators plan, organize and make policy decisions for the project. They also maintain collaborative ties with other agencies.

OBJECTIVES

- Promoting accountability and a high standard of excellence
- Planning and coordination of ADAP projects, including follow-up activities for concluded projects
- Developing collaborative projects within the USAPI
- Planning and organization of semi-annual Board of Directors Meeting

RESULTS AND ACCOMPLISHMENTS FOR THE PERIOD: JULY TO DECEMBER 2008

American Samoa Community College (ASCC)

- The American Samoa Community College ADAP Director, Tapa'au Dr. Daniel Mageo Aga, attended the ADAP Director's 2008 summer meeting. Dr. Aga reported on the status of ASCC ADAP projects, reviewed status of overall ADAP Projects and recommended new projects to enhance agricultural programs in the American Pacific.

College of Micronesia (COM)

- COM continued the usual facilitation of projects for their successful implementation.

Northern Marianas College (NMC)

- The Dean of Community Programs and Services, Felicitas Abraham attended the ADAP Director's Summer Meeting in Fairbanks, Alaska. CREES Director was not able to attend due to personal matters.
- Our office worked with the NMC Business office on the close out of ADAP Year 18 Projects.
- Director and Coordinator continue to oversee and ensure that the ADAP projects are carried out. Coordinator will continue to work with Business office to make certain that expenditure are in compliance with the grant terms and reimbursement requests are submitted on a timely basis.

University of Guam (UOG)

- Air fare, per diem, and ground transportation were funded for travel by UOG-ADAP Director to attend the 2008 ADAP/PLGA Board of Directors Winter meeting in Fairbanks, Alaska, July 5-6, 2008.
- In support of PLGA's and ADAP's participation in future Sun Grant projects, ADAP provided per diem funding for travel by Lee Yudin, UOG-ADAP Director, to attend the Western Sun Grant Steering Committee meeting in Seattle, Washington, July 29-30, 2008.
- Balance Summary and Request for Reimbursement Reports are prepared and submitted by CNAS accountant and ADAP Coordinator. Transfer of funds memoranda are prepared by Coordinator and submitted to ADAP Home Office for approval. ADAP Project Progress Reports are compiled, prepared and submitted for ADAP Board of Directors Meetings.

University of Hawaii (UH)

- The Home Office has completed the subcontracts with ASCC, COM, NMC, and UOG, and distributed a Plan of Work for Year 21.
- The Home Office provided administrative support to our collaborators and colleagues. The Home Office staff have arranged for alternative financial support from other projects. Jim Hollyer is currently receiving half of his salary

from a Hawaii Farm Bureau Federation Food Safety grant. Vanessa Troegner is receiving financial support from the Agribusiness Incubator Program (25%) and from the HFBF Food Safety grant (25%). These actions have reduced the salary/fringe expenses within the Home Office, making more funding available for project work.

- UH has submitted the CRIS reports to the USDA.
- With the updates to FileMaker and Windows Internet Explorer, we uncovered a few flaws in the Pacific Reporting and Accountability Database. We are seeking assistance in fixing these inconsistencies. We are still working to prepare an instruction manual for distribution to the participating institutions.
- The ADAP website (<http://www.ctahr.hawaii.edu/adap2/>), the Pacific Region Avian Influenza website (http://www.ctahr.hawaii.edu/adap2/Avian_Flu/index.htm) and the Pacific Islands Networking website (http://www.ctahr.hawaii.edu/adap2/Pacific_Initiative/index.htm) were updated periodically. Links to the Pacific Region Avian Influenza website can be found under Training Resources of the Pacific Agrosecurity Program (<http://www.pacific-agrosecurity.org/>).

IMPACT OF THE PROJECT TO DECEMBER 2008

At ASCC, the Management Services team provided the administrative professional support to all the ADAP projects of the American Samoa Community College.

At COM, the Management Services team is important to the overall management and coordination of ADAP projects in Micronesia.

At NMC, the Management Services team ensures that the overall ADAP projects are monitored and carried out accordingly.

At UOG, the Management Services team allows for administrative support of the ADAP core projects—reports are prepared and submitted in a timely manner; budget activity in each core project is monitored; interaction and communication with other ADAP institutions and Home Office.

At University of Hawaii (UH), Home Office services have worked to improve the efficiency of the project management, updated older ADAP products, and made information more accessible by updating the ADAP website.

UPCOMING ACTIVITIES: JANUARY TO JUNE 2009

At American Samoa Community College (ASCC), our staff will plan and host the first “ASIASIGA: the State of Food Security in American Samoa” conference in Pago Pago, American Samoa on February 18 & 19, 2009. We will identify agricultural challenges in American Samoa and see how the American Samoa Community College and ADAP can best address these needs. Additionally, we will promote ADAP’s continuous contribution to the improvement of agricultural programs in American Samoa and the Pacific, and continue to monitor the American Samoa Community College ADAP project expenditures and compliance.

At the College of Micronesia (COM), we will continue to provide the support necessary for the successful implementation of ADAP projects.

At Northern Marianas College (NMC), Director and Coordinator will work on expending Year 19 funds by the allotted time frame of February 28, 2009. Also, the coordinator will work with NMC-Community Development Institute to organize a Department Retreat which includes workshop topics on Leadership, Communication, Teamwork, Organization, and Survey Assessment.

At University of Guam (UOG) and University of Hawaii (UH), the Management Services staff will continue to provide support for all ADAP Projects.

Professional Development Project

New Core Project, replacing Human Resources and Capacity Building (HRCB), Enrichment Opportunities (EO), and Leadership Development (LEAD)

Project Coordination Team: ADAP Project Manager and Regional Coordinators

Funding Allocations and Expenses:

Year 19 (EO, HRCB and LEAD) \$178,000

Year 21 \$70,000

PROBLEM STATEMENT AND POTENTIAL SOLUTION

The Professional Development Project is a composite of three projects funded during the FY2006: Leadership Development, Human Resources and Capacity Building, and Enrichment Opportunities. Although previously the Board of Directors sought to view each individual project as unique, upon further investigation, the Board found that the project goals were nearly identical. These three projects sought to improve institutional capacity through three different avenues. Further, the board found that each institution had sought to transfer funds between these three projects in order to meet the needs of the particular institution. Ultimately, each institution has a hierarchy of needs, and having funds dedicated to a low-priority need was not conducive to improving institutional capacity. At the Winter 2008 Board meeting, the directors agreed to combine the three projects to allow each institution greater freedom to focus on the areas most critical to improving the institution capacity. The Professional Development project has three focuses for improving institutional capacity: leadership development, staff enrichment opportunities, and educational opportunities for staff, faculty, and college and high school students.

Focus 1: Leadership development The growth and development of the Pacific Land Grant colleges is tied closely to the growth and development of the small island communities they serve. By supporting the development of strong leadership qualities, ADAP can give the colleges the best chance to make the organizational strides required by their clients and the communities.

Focus 2: Staff development By supporting staff development opportunities, staff training, and institutional initiatives, ADAP can offer a solution to having too few employees, or under-trained employees. Oftentimes, new guidelines and changing federal accounting regulations require specialized knowledge and greater technological skills. Due to the limited human resources of the smaller Land Grant institutions, there is increasing pressure on current staff to take on greater responsibility and to cross-train with other employees. The successful transfer and adoption of knowledge will enhance the productivity and efficiency of those employees. ADAP also aims to target institutional initiatives such as strategic planning. The strategic planning process benefits the institution, and the participants, as they learn more about their institution, their department, and their role within the system.

Focus 3: Educational initiatives By supporting education initiatives, ADAP can help provide qualified employees support to enhance the institution and government services and to advance local agricultural development. Low enrollment in agriculture and home economics classes across the region's high schools continues to deprive

ADAP institutions of future employees who are knowledgeable in these areas. ADAP has developed many unique programs targeted at different stages of educational development. Each ADAP institution has the opportunity to focus on one, or many of the programs, depending on the needs of the institution and community: A.) The Financial Assistance for an Advanced Degree program provides learning opportunities for Land Grant staff and others seeking a Doctorate or Masters degree. This program benefits both the institution and the individual by creating opportunities to expand or strengthen Land Grant programs and to advance professionally. Financial assistance can be used for U.S. or foreign institutions, but students going to Land Grant colleges are given preference. On-line or virtual degree programs are also considered for this assistance. B.) The Financial Assistance for a 2- or 4-Year College Program provides limited financial support for students pursuing a certificate or degree from their local land grant institution in agriculture or a related field. Assistance is limited and continued assistance is dependent on satisfactory academic performance. ADAP directors and regional coordinators provide assistance with registration, course selection, and career guidance. C.) The High School Apprenticeship Program provides high school students an opportunity for a hands-on educational experience in agricultural research or extension, increasing awareness of the educational opportunities and careers available in agriculture, home economics, and related fields

OBJECTIVES

- Develop leadership abilities of land grant directors, administrators, departmental chairs, researchers, and employees.
- Create opportunities for Land Grant staff and others to pursue advanced degrees in agriculture or a related field
- Create opportunities for current graduate and undergraduate to continue their studies within agriculture or a related field leading to a degree or certificate
- Create opportunities for hands-on learning experiences for high school students to learn more about agricultural research and extension
- Staff training and professional development opportunities
- Strategic plans for each of the ADAP institutions

RESULTS AND ACCOMPLISHMENTS FOR THE PERIOD: JULY TO DECEMBER 2008

American Samoa Community College (ASCC) – Human Resources and Capacity Building

- The American Samoa Community College Assistant Researcher, Mr. Ian Gurr successfully enrolled in the horticulture graduate degree program at the University of Hawaii, Manoa Campus, spring 2009 semester. Funds (Year 19) were reserved to assist in payment of tuition and fees for Spring & Summer '09 semesters.
- The Agriculture & Life Science (ALS) Department of the American Samoa Community College graduated Mr. Fili Uta, majored in General Agriculture, during the fall '08 commencement exercise on December 12, 2008. The ALS Department has four prospective graduates for the Spring '09 ASCC graduation.

College of Micronesia (COM)

- Scholar Arwan Soson from the College of the Marshall Islands continues his enrollment at UH-Hilo; Mr. Soson began classes in Fall 2008.

Northern Marianas College (NMC) – Enrichment Opportunities

- Ms. Polly Omechelang attended the Administrative Assistants Workshop in Salt Lake City, Utah with our Administrative Assistant, Ms. Francine Camacho. The workshop included topics in Communications, Team Work, Leadership and Customer Service. The two were sent as part of our department's effort to enhance our staff's skills and boost employee moral.
- The Enrichment Opportunity funds were used to send one of our Extension Agent for staff development. The opportunity that this project provides for our staff is very important as it gives them extra incentives and moral boosting and an opportunity to enhance their skills. For the past year, staff felt the negative impact of the economy with work hour reductions and salary cuts.

Northern Marianas College (NMC) – Human Resources and Capacity Building

- The HR/Capacity Building funds were used to pay for scholarships given to staff and college students in order to pursue higher education in Agriculture and Family Consumer Sciences. Funds are also used to pay high school students who are chose to take part in our Internship program every summer:
 - Ms. Rose Castro was awarded ADAP Scholarship to continue on their pursuit of higher education. Ms. Rose Castro will be in her final semester this Spring 2009. Upon completion and passing of her Spring semester courses, she will be graduating with her BA in Elementary Education. Ms. Castro is currently one of our Nutrition Extension Agent.
 - Mr. Manny Camacho was awarded ADAP Scholarship to continue on their pursuit of higher education. Mr. Manny Camacho continues to take courses to finish up his AA Degree in Natural Resource Management.
 - Our Administrative Assistant, Ms. Francine Camacho was awarded ADAP scholarship for Summer, 2008. She completed her studies in Fall 2008 and is cleared for graduation in May, 2009. She will be receiving her BA in Elementary Education. As our Administrative Assistant, Ms. Camacho contributes her extra time to our 4H program as a volunteer to chaperone, organize and assist in several activities.
 - The 2008 High School Internship Program took place from August 4th through the 29th. A total of 31 students from Saipan, Tinian and Rota were chosen to take advantage of this opportunity to get hands-on training on the various programs that CREES offers to the community. Upon the completion of the program, students submitted and presented their report on their experience.

University of Guam (UOG)

- At UOG, we continue to provide financial assistance to two employees within the college pursuing their degrees. These individuals are Mr. Jesse Rosario, Program Coordinator IV within the CNAS Dean's Office who is pursuing his master's degree in Public Administration and Mr. Frank Alig, Biologist IV at our Fadian Hatchery who is pursuing his master's degree in Biology.
- The Summer Research Apprenticeship Program is offered to high school students who express an interest in the field of agriculture, consumer and family sciences, or other related field of study. The program this past summer was offered from June 30 – August 2, 2008. With the funding made available for this program, we were able to hire five high school students to work with research faculty on ongoing research projects. The students were afforded the opportunity to work along side faculty on projects involving food science, animal science, horticulture, sustainable farming, and aquaculture. An additional five high school students were also hired under this program, but were funded by the Resident Instruction Grant awarded to the University of Guam (CariPac).
- Travel was funded for two UOG faculty to attend the Food Security Meeting held November 13-14, 2008 in Honolulu, Hawaii. Dr. John Brown, Agricultural Economist, and Peter Barcinas, Extension Agent III, represented UOG at this meeting.

University of Hawaii (UH)

- For the Year 19, UH received only a small portion of the Professional Development funds (\$19,700). With these funds, we have contributed to the participation of one CTAHR faculty member in the University of Georgia's Leadership Development in the 21st Century program. For the most recent class, 2008-2009, ADAP-UH contributed \$8500 for the registration fees for Brent Sipes.

IMPACT OF THE PROJECT TO DECEMBER 2008

American Samoa Community College (ASCC) – Human Resources and Capacity Building

- The Human & Resources Capacity Building project provided tremendous support for the Staff and students of the American Samoa Community College in professional development and advanced degree studies.

College of Micronesia (COM)

- The students and staff had gained new knowledge and skills and improved on their work performances.

Northern Marianas College (NMC)

- Within the Leadership Development Project, the Project will continue to give our staff (from Saipan, Tinian, and Rota) the opportunity to develop and

improve their leadership skills through workshops and training offered through various activities.

- The HR/Capacity Building project is very important as it gives an opportunity to our staff members to pursue a higher education in the fields they are in. By getting a higher education, our staff receives the motivation and the confidence to work and provide better service to our clients.
- Within the Financial Assistance for a 2- or 4-Year College Program, these opportunities for college students who enroll in Agriculture and Family Consumer Science fields are very important. By providing students additional scholarships, college students can get a taste of the Agriculture and Family Consumer Science fields and hopefully entice them into pursuing their education within these fields.
- Also, as part of the strategy to get students interested in the fields of Agriculture and Family Consumer Sciences, we offer the High School Internship program. By this program, we hope to stir interest early on to high school students and eventually draw them in to these fields upon entering college.
- Within the Enrichment Opportunities Project, the training boosts their moral and gives them the confidence to do better and provide better service to our clients.

University of Guam (UOG)

- Within HRCB - Financial Assistance, UOG has supported staffers in obtaining their respective degrees, and as a result, the job performance of the two CNAS employees has been enhanced and they have become more productive workers.
- Within the Summer Research Apprenticeship Program, UOG is able to offer high school students the opportunity to pursue a career study in the field of agriculture, consumer and family sciences, or other related fields upon entering college. By working with our research scientists in a research laboratory, or with an extension agent on a community service project during their summer break, we hope to peak their interest and encourage them to consider one of the fields of study aforementioned when they are ready for college.
- Within the Enrichment Opportunities Project, UOG was able to draw the attention of the community and appropriate organizations to the idea/concept of food security. This attention will cause communities to look at the food sources available to them and to ensure that these food sources are safe from the effects of such factors as natural disasters, labor issues, etc.

UPCOMING ACTIVITIES: JANUARY TO JUNE 2009

American Samoa Community College (ASCC)

- Continue to increase student enrollment in the ASCC Agriculture & Life Sciences degree program.
- Continue to provide administrative support for ASCC CNR staff on advanced degree studies program at the University of Hawaii.

- Continue to support ASCC Staff on graduate degree program at the University of Hawaii.

College of Micronesia (COM)

- COM will continue to encourage other staff to make use of the opportunity to further their education.

Northern Marianas College (NMC)

- Focusing on Leadership Development, the ADAP Coordinator is working with NMC - Community Development Institute (CDI) to offer a CREES Professional and Leadership Development Retreat which includes workshop topics on Leadership, Teamwork Activities, Communication, and Survey Assessment. This 3-day workshop will give the staff the opportunity to get information, learn and have hands-on activities that will improve their skills in leadership management, communication and customer service and survey development. The goal is to have all CREES staff attend this workshop. As other leadership opportunities become available, we support our staff's participation in those as well.
- Focusing on Enrichment Opportunities, NMC will support an Agriculture Summit that will be offered to all our staff members and extended to the community as well.
- Focusing on the Financial Assistance for a 2- or 4-Year College Program, the ADAP Coordinator will work to market the NRM Degree program and offer ADAP Scholarship to students who enroll in the program.
- NMC will also encourage staff to continue pursuing high education.

University of Guam (UOG)

- UOG will continue to offer financial assistance to those individuals who are currently in the program as well as any new applicants.
- UOG will continue to offer the Summer Research Apprenticeship Program to high school students.

University of Hawaii (UH)

- With the financial assistance of COM, we will support Jim Hollyer's participation in the Leadership Development in the 21st Century workshop (Class 2009-2010), offered by the University of Georgia's Fanning Institute.

Communications, Information and Publications Services Project

Core Project

Project Coordination Team: ADAP Project Manager and Regional Coordinators,
and Eileen Herring (UH Hamilton Library)

Funding Allocations and Expenses:	Year 19	\$20,030
	Year 21	\$10,000

PROBLEM STATEMENT AND POTENTIAL SOLUTION

The ADAP Communications, Information and Publications Service (CIPS) project was created to coordinate and address the information needs of the ADAP institutions, communities and clientele on a regional basis. This project will help provide and make accessible, appropriate information and materials that will benefit the American Pacific region and encourage economic and agricultural sustainability. As a result of more open and immediate access to information, duplication of work in the region will be reduced, leading to more efficient use of fiscal and human resources. The increased utilization of electronic communication capabilities can greatly reduce travel costs for various meetings, training, and workshops.

The Library Services Project is a small UH-based project under the CIPS umbrella. The libraries of the Pacific Land grants do not have the library resources (both hardcopy, and electronic) that the University of Hawaii has. The Library Services Project provides one-on-one assistance in retrieving research journals articles, and books. These services allow researchers across the Pacific access to current studies in their field, providing strong groundwork for research and extension projects. Also within CIPS, Ms. Eileen Herring maintains the Traditional Pacific Island Crops Website contains links to quality internet resources that deal with the production, marketing, and research aspects of these twelve important traditional Pacific Island crops. Related marketing and statistical sites, databases, and other reference sources are also included. The emphasis is on collecting full-text resources so that Pacific Islanders who have Web access but do not have access to library print resources can find the information they need to grow and market these crops. Each of the included resources has been identified and evaluated by Ms. Herring for the quality of their information and relevance to Pacific island agriculture.

RESULTS AND ACCOMPLISHMENTS FOR THE PERIOD: JULY TO DECEMBER 2008

American Samoa used CIPS (Year 19) funding to pay for the cost of printing publications, brochures, banner and advertisements on the local newspaper, television and radio for the American Samoa Food Security Conference scheduled on February 18 & 19, 2009.

College of Micronesia (COM) continued maintenance and improvement of communication among the 3 colleges and the purchased copies of a publication "Economic Entomology in Micronesia" for participants of an IPM workshop held in Guam for extension agents throughout Micronesia in October 2008.

NMC - CREES currently hired on limited-term basis an Outreach Coordinator. Mr. Claus Bier was hired under a special grant to work on its publications and outreach activities. Several of these publications are funded through ADAP CIP. Video Equipment and computer was purchased using Yr18 funds and are being used for video, photo and audio editing, design and publication of various program brochures and posters. Funds from this project benefited the indigenous population of the CNMI. Our videos include the captioning of Chamorro and English languages when one or the other is being used by speakers. So far, videos of taro taste testing, value adding, and the ADAP internship experience have been completed and airing on local television stations.

At UH, the Library Services Project provided full-text articles, and performed resources searches in support of Pacific region researchers, details are listed below. Although funds were earmarked for Mr. Hollyer's participation in the ACE (Association for Communication Excellence in Agriculture, Natural Sciences, and Life and Human Sciences) meeting in Michigan, June 10-13, 2008, he declined to attend in favor of an opportunity to assist the FAO to create a business program for farming in the Cook Islands.

UPCOMING ACTIVITIES: JANUARY TO JUNE 2009

At NMC, we will continue to work with Outreach Coordinator to enhance the marketing of our programs and services.

ASCC, COM, and UOG will continue to improve communication and dissemination of agriculture information.

At the University of Hawaii, Ms. Eileen Herring will continue to provide library services (such as article searches and book loans), and maintain the Traditional Pacific Islands Crops Website. Additionally, Ms. Herring will participate in the AgNic Conference in Beltsville, MD, April 21-22, 2009.

ADAP CIPS**07/01/08 – 12/31/08 Library Services Statistics**

Location	Searches	Articles	Book Loans	Hours	Value
ASCC	0	18	0	7.0	\$270.00
COM FSM					\$- 0
Yap	0	5	0	1.5	\$79.75
CMI	0	2	0	1.0	\$30.00
NMC					
Saipan	0	0	0	0.0	\$- 0
Tinian	0	0	0	0.0	\$- 0
PCC	0	0	0	0.0	\$- 0
UOG	4	31	0	10.0	\$747.00
Fiji	0	1	0	0.5	\$15.00
Total	4	57	0	20.0	\$1,141.75

*The figures given in the “Value” column are based on the current rate schedule of the University of Hawaii at Manoa Library’s External Services Program. (ESP). ESP provides library services for non-UH Manoa patrons. ESP charges fees on a cost-recovery basis.

The Traditional Pacific Island Crops Web Site (AgNIC Partner)
(<http://libweb.hawaii.edu/libdept/scitech/agnic/>)



This ADAP supported project provides access to Pacific relevant full-text electronic resources about 12 traditional Pacific Island Crops:

- Bananas and Plantains (*Musa* sp.)
- Betel Nut (*Areca catechu*)
- Breadfruit (*Artocarpus altilis*)
- Cassava (*Manihot esculenta*)
- Coconut (*Cocos nucifera*)
- Kava (*Piper methysticum*)
- Noni (*Morinda citrifolia*)
- Pandanus (*Pandanus* sp.)
- Sugarcane (*Saccharum officinarum*)
- Sweet Potato (*Ipomoea batatas*)
- Taro (*Colocasia esculenta*) and other Edible Aroids
- Yam (*Dioscorea* sp.)

The Web site contains links to quality World Wide Web resources that deal with the production, marketing, and research aspects of these twelve important traditional Pacific Island crops. Related marketing and statistical sites, databases, and other reference

sources are also included. The emphasis is on collecting full-text resources so that Pacific Islanders who have Web access but do not have access to library print resources can find the information they need to grow and market these crops. Each of the included resources has been identified and evaluated by Eileen for the quality of their information and relevance to Pacific island agriculture.

During the past year, links to new resources have been added to some of these pages and all of the current links have been checked regularly and updated as necessary. In addition, a new Web page was added in July 2008 that provides links to free Web-accessible information resources. This was added in direct response to a need identified at this summer's Institute of Museum and Library Services funded Pacific Library Training Institute held at the University of Hawaii at Manoa Library. The new Web page provides links to discovery tools (databases) for finding journal articles and to open access full-text resources.

During the past six months (July through December), the Traditional Pacific Island Crops Web site has received 11,563 page requests (that translates into 22,277 "hits"). During this six month period, taro and banana were the most popular crops with 1,267 page requests for taro and 1,074 page requests for banana. Among the worldwide users of this information, the following Pacific island domains accessed these Web pages:

.am (American Samoa)	.nz (New Zealand)
.au (Australia)	.pf (French Polynesia)
.ck (Cook Islands)	.pg (Papua New Guinea)
.fj (Fiji)	.sb (Solomon Islands)
.fm (Micronesia)	.to (Tonga)
.nc (New Caledonia)	.tv (Tuvalu)
.nu (Niue)	.vu (Vanuatu)

During the past six months, the ADAP librarian answered 4 email reference questions from users throughout the world concerning these twelve crops.

GRANT DEVELOPMENT AND CAPACITY BUILDING PROJECT

Grant Development and Capacity Building Project was a small project embedded in the CIPS project with the goal of educating faculty and staff within the American Pacific Land Grant institutions and government agencies in ways increase funding for research, education and extension projects. Too often, grant workshops (sponsored by the USDA) take a "one-size fits all" approach to teaching how find, and apply for grants. Dr. Sharee Pepper is a grantwriting coach. She advises researchers on a one-on-one basis, providing valuable feedback on writing style, language usage, formatting, experimental design, and project scope, as well as, providing guidance and answering questions about the grant submittal process.

Although ADAP support for the Grant Development and Capacity Building Project was discontinued in December 2006, Dr. Pepper continues to maintain her contacts in

the Pacific region and continues to provide grant information. Her new position within the CTAHR Agribusiness Incubator Project requires her to focus her efforts on Hawaii-based opportunities, but there is often an overlap between the opportunities for Hawaii and those for the Pacific region. Thus, she is able to continue to provide grant development and capacity building assistance to the ADAP collaborators.

Currently, ADAP is subscribed to TechSoup Stock and GrantStation. These two organizations work together to provide technology, equipment, and software to non-profit organizations at a greatly reduced rate. Additionally, GrantStation provides a gateway for searching for grant opportunities from the many non-profit organizations across the US.

Campus Reports

Northern Marianas College Campus Report

Prepared by: Ross S. Manglona, Director, NMC-CREES

These past six months have been exhausting for Northern Marianas College. On February 6, 2008, the college received a fax letter from ACCJC President Dr. Barbara Beno stating that the institution is being placed on Show Cause status for various reasons. Since the issuance of this notice, NMC has been working diligently at building on its infrastructure, program assessment, and human resources capacities. Additionally, the Commonwealth of the Northern Mariana Islands (CNMI) legislature sought to aid the college and contribute toward NMC's accreditation reaffirmation efforts:

- House Bill 16-54 (Introduced by Representative David Apatang), which seeks to repeal and reenact section 2 of public law 14-98 to exempt the Northern Marianas College from a rate increase of the employer contribution of the Retirement Fund, was passed by the House of Representatives. The enactment of this bill into law will resolve the audit finding regarding the retirement contribution issue.
- House Bill 16-32 (Introduced by Representative David Apatang), which appropriates \$3 million for NMC capital improvements, will be deliberated in session this week.
- House Bill 16-33 (Introduced by Representative David Apatang), which amends 3 CMC 7831 by adding a new subsection (e) and (f) that would remove the requirement that the Commonwealth Utilities Corporation and the Northern Marianas College pay one percent of its annual budget to the Office of the Public Auditor, is being being deliberated in session in week. The passage of this bill would save NMC about \$60,000.
- House Bill 16-51 (Introduced by Representative Ray Yumul), which proposes a \$6.7 funding level for NMC, was passed by the House of Representatives. The amount is above and beyond the \$5.8 million proposed in the Governor's budget and would help NMC meet compliance requirements relating to staffing.

After submitting the Show Cause Report to the Accreditation Commission for Community and Junior Colleges, NMC President Dr. Carmen Fernandez met with executive and legislative leaders to continue her ongoing dialogue about the College's accreditation efforts and to provide them with highlights of the Report submitted on time to the ACCJC on October 15. We are now awaiting the commission's decision on reaffirmation. Their expected release of their verdict is scheduled for late January 09.

University of Guam Campus Report

A long time friend and former Director of ADAP as well as former Dean/Director of the then College of Agriculture and Life Sciences has retired from government service. Dr. Jeff D.T. Barcinas has retired from the University of Guam in his position as Vice President for University and Community Engagement in December. He retires with 30+ years under his belt. Although, he will still be interacting with the University of Guam as the newly appointed CARET Representative, and will be accompanying Dr. Yudin to the 2009 Joint CARET/AHS Meeting in Washington, D.C. in March.

At the meeting of the 17th AAACU Biennial Convention held in Manila, Philippines, October 23-25, 2008, Dr. Lee Yudin was elected President of the organization. He will serve for a term of two years. The University of Guam will host the 18th AAACU Biennial Convention in 2010.

At the 2008 NASULGC Meeting held in Chicago, Illinois in November 2008, Dr. Lee Yudin was elected to serve as a member the 2009 Policy Board of Directors, Board on Agriculture Assembly. For the first time a Director was elected who would represent Insular Land Grant Institutions.

The college is conducting searches for two faculty positions for the college. One is for an Aquaculturist under WPTRC, and the other is for an Extension Agent II under CES.