

# **American Samoa Community College (ASCC)**

## **Division of**

## **Community and Natural Resources (CNR)**

### **FY 03 Annual Report of Accomplishments & Results**

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## INTRODUCTION

American Samoa is submitting a joint Research and Extension report. This report covers activities supported by Hatch and Smith Lever funds. In addition, there are programs and projects that are joint efforts with Hatch, Smith Lever, Smith Lever 3-d, Forestry and other federal funding. The other source of funding is given under sections C Sources of Funding. There were 29.1 FTE for FY 2003 supported by Hatch and Smith Lever.

### **GOAL 1: AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY**

#### **I. OVERVIEW**

Cooperative Extension continued to use a wide variety of means to disseminate information to the Territory, including television spots, a biweekly ½ hour broadcast on various extension programs, press releases, workshops, farm visits and publications. Collaboration with agencies and non-governmental organizations like the American Samoa Resource Conservation and Development Council was effective in launching new programs, such as a recent promotion of agroforestry as a sustainable farming method. The community continues to look to Cooperative Extension for not only education, but also for the best seed cultivars, breeding pigs, and disease-resistant planting materials for traditional crops. Extension also continues to work with farmers to look for innovative marketing opportunities, and to assist with financial management strategies that can help maximize farm profits.

The Cooperative Extension Service and Agricultural Experiment Station (AES)-Research led programs in the following areas:

- Marketing
- Vegetable Production
- Traditional Crop Production
- Swine Management
- Waste Management
- NxLevel® Agricultural Business/Entrepreneurship
- Medicinal Plants
- Pesticide Safety
- Farm Safety
- Forest Stewardship
- Forest Health
- Urban Community Forest
- Conservation Education
- Forest Legacy
- Agroforestry

The CES and Research of the American Samoa Community College (ASCC) Division of Community and Natural Resources (CNR) have successfully accomplished many of the activities outlined in Goal 1 of the 5-Year Plan of Work. Through their collaboration on a variety of approaches, they have achieved the following outputs in 2002:

- 50 appearances and programs on local television news
- 525 farmers visited
- 37 educational programs and workshops (National Agriculture Day, Arbor Week, ASCC Career Day, field trips and tours)
- 7 Extension/Research non-scientific publications

- 2 marketing directories for producers and local stores

**. Outputs & b. Outcomes**

1. Number of farmers completing all forms of non-formal education programs and presentations and adopting new practice or technology.

Non-formal Ed		
Baseline	Target	Actual
2000	120	355
2001	150	378
2002	180	554
2003	190	635
2004	250	

The increased interest in vegetable farming coupled with high market prices has led to high levels of interest and participation at vegetable farming demonstrations. AES also continued to work with partner agencies such as EPA, Department of Commerce and the USDA Natural Resource Conservation Service to lead beneficial waste management workshops. Incidents of bacterial-related illnesses coupled with increased enforcement of environmental regulations has resulted in greater numbers of farmers attending waste management workshops and then continuing to work with Agriculture Extension to implement sound management strategies on their farms.

2. Number of materials, including newspaper articles, fact sheets/brochures and television programs produced on topics related to improving productivity and global competitiveness.

Baseline	Target	Actual
2000	20	28
2001	24	36
2002	29	49
2003	35	52
2004	42	

Cooperative Extension continued to use the public television station as a primary means of disseminating information, especially through its biweekly “Laufanua ma Atina’e” ½-hour television program, coordinated by the Forestry Extension. Two market directories were published and distributed, and are available on-line at the Agricultural Development in the American Pacific (ADAP) website. Agriculture Extension also worked with the EPA and Department of Commerce to develop a draft brochure about leptospirosis that was distributed to attendants of their swine waste management workshops, but will have wider distribution in FY '04.

3. Total number of farmers loaned tools/equipment from local businesses, Department of Agriculture and ASCC Land Grant.

Baseline	Target	Actual
2000	12	23
2001	14	19
2002	17	30
2003	20	17
2004	24	

Loaning tools and equipment to the farming community is not a favored Extension practice for many reasons. However, the Agriculture Extension agents found out that buy using Extension tools to help with community seedbed preparation, they were able to groups begin their farms without having to wait to buy the needed tools. The program has enabled individuals and groups to purchase their own tools and equipment during this transitional period and after their first harvest of vegetables.

The Department of Agriculture has provided assistance to local farmers via the availability of a small tractor to help with tilling and field preparation. For medium-scale vegetable farmers on flat lands, this has greatly expanded their capacity while reducing labor time.

4. Number of farmers buying seed cultivars, fertilizers and pesticides from local businesses, Department of Agriculture and ASCC Land Grant.

Baseline	Target	Actual
2000	25	120
2001	30	153
2002	36	255
2003	43	400
2004	52	

Over 400 farmers visited the AES office to purchase vegetable seeds, as well as planting materials for bananas and taro. This number does not include the over 2000 papaya seedlings that were freely distributed to the public as an effort to increase production of the fruit.

Results from the vegetable cultivar trials collected during FY '03 is being given to the local hardware stores that supply gardening seeds, as well as Department of Agriculture, in an effort to ensure that local businesses maintain a consistent stock of the preferred varieties.

5. Number of farmers interviewed regarding their attitude towards marketing and their marketing practices.

Baseline	Target	Actual
2000	40	53
2001	48	61
2002	58	73
2003	69	275
2004	83	

Extension agents conducted face-to-face interviews with farmers during farm visitations. Farmers were also surveyed on the spot when they visited the extension office on a weekly basis. The Agriculture Economist responsible for compiling information for his Marketing Directory also conducts surveys regarding production and marketing from each farmer-entry. Extension agents also work with participants in the NxLevel® courses as they develop their business plans regarding current and potential marketing practices.

6. Number of Organizations/groups given assistance in developing gardens.

Baseline	Target	Actual
2000	2	5
2001	3	4
2002	4	6
2003	5	11
2004	7	

AES worked with nine Early Childhood Education Centers and two elementary schools to develop vegetable gardening projects that could be integrated into their learning activities. Agents assisted in seedbed preparation, providing seedlings, initial planting, and continued technical assistance until harvest.

7. Number of farmers receiving financial assistance to develop existing enterprise and increased production.

Baseline	Target	Actual
2000	3	3
2001	5	6
2002	7	16
2003	8	14
2004	10	

Seven farmers received micro loan funds from the SBA-funded Women’s Business Center for the start-up and development of tilapia ventures. An additional seven farmers were also successful in obtaining WSARE Farmer-Rancher grants, three of whom worked with AES on their grant proposals, including a farmer starting a pilot vermicomposting project. AES also worked with seven WSARE applicants to prepare proposals for the FY ’04 funding.

**c. Territorial Assessment**

The AES is currently participating in the USDA Ag Census, led by the Department of Commerce. This effort was delayed until FY ’04 due to several natural disasters that affected the territory. This instrument will provide some limited feedback as to the efficacy of extension programs, but the need for a comprehensive needs assessment still exists. However, in July of ’03, an employee of ASCC conducted over 300 face-to-face interviews with local farmers in Tutuila and Manu’a. Feedback from these interviews is being integrated into stakeholder input.

**c. Financial and Human Resources**

9 FTE

Hatch Federal	\$121,115
Hatch Local	\$ 40,080
Smith Lever Federal	\$118,394
Smith Lever Local	\$ 33,118
Multistate Research Funds Federal	\$ 3,868
Multistate Research Funds Local	\$ 3,868

**IIA. KEY THEME: AGRICULTURAL COMPETITIVENESS**

**. Activity**

Information for the American Samoa Local Producers’ Directory (LPD) was collected at the Women’s Agribusiness Fair, extension workshops and many one to one visits to farmers and producers at their farms or at the Farmers’ Market. The commodities produced, the farmer’s name village and phone numbers are published in the bilingual American Samoa Local Producers’ Directory with headings for a total of 140 locally produced commodities and value-added products. Retailers, hotel/motels, fast food establishments and other business use this directory to make direct contact with farmers, fishermen and producers of value-added products.

In the March 2003 mailing, a return addressed stamped evaluation form was enclosed to get user feedback on the utility and effectiveness of the LPD along with suggestions for improvement. Using a Likert scale of 1 – 4 (1 – not useful and 4 – very useful), the respondents rated the usefulness of the LPD

with a 3.6 with comments and suggestions for improvement: need to be updated every 6 months, highlight story on a farmer or producer because people like to buy from people that they know, better advertising of the directory to let more people know about it.

- **Impact**

Because of the limited arable land for agriculture, producers frequently run out of crops to sell resulting in shortages at the retail level. Instead of waiting for their suppliers until, they once again have produce to sell, retailers use the American Samoa Local Producers' Directory to make contact with other growers to restock their shelves. To increase circulation and awareness, the mailing list for the American Samoa Local Producers' Directory Volume III (2) included retailers, producers, the High Court of American Samoa, the Legislature, the Executive offices of the American Samoa Government including the village mayors, the American Samoa Power Authority, the American Samoa Medical Authority, the American Samoa Telecommunications Authority, the administration, faculty and staff of the American Samoa Community College and the local USDA offices.

- **Source of Funding**

Hatch

- **Scope of Impact**

State Specific

## **IIB. KEY THEME: AGRICULTURAL PROFITABILITY**

- **Activity**

As land pressures increase, American Samoan farmers are finding it difficult to make a viable income on less and less arable land. Community leaders have begun looking for innovative ways to increase income opportunities with relatively low inputs. One such way that has been identified is aquaculture. The Agriculture Extension Service partnered with UH-Manoa Sea Grant Extension Agent Dr. Darren Okimoto to offer a financial management course for start-up tilapia agents. Sea Grant developed plans for small-scale fish tanks and assisted AES in determining the cost of production of tilapia. 25 farmers participated in a 8-hour business planning class that covered cash flow, risk management, marketing and financing opportunities, with the goal of assisting them in managing their new tilapia ventures more effectively.

- **Impact**

Of the 25 farmers who initially attended the course, 11 completed both Saturday sessions, and six completed business plans. Five participants used to their plans obtain financing from a pilot micro loan project that provided enough capital to build two tilapia tanks per farm, estimated to provide about \$3,000 in additional farm income per year. Since the original training was offered two more tilapia farmers have worked with AES on these targeted business plans, and have successfully obtained financing from the micro loan program.

- **Source of Funding**

Smith-Lever

- **Scope of Impact**

State Specific

## **IIC. KEY THEME: SMALL FARM VIABILITY**

. **Activity**

Businesses are visited and surveyed as to what commodities they currently purchase from local producers and what they would like to purchase in the future. The findings, specifically the business name, the purchasing manager's name, location of the business and their telephone number, were consolidated into a bilingual American Samoa Marketing Directory (MD) with headings for each of 95 locally produced commodities and value-added products. Farmers, fishermen, and producers of value-added products use this directory to contact retailers, hotel/motels, and fast food businesses directly to market their products.

In the mailing of March 2003, a return addressed stamped evaluation was enclosed to get user feedback on the utility and effectiveness of the MD along with suggestions for improvement. Using a Likert scale of 1 – 4 (1 – not useful and 4 – very useful), the respondents gave the MD a 3.7 for usefulness with comments and suggestions for improvement including publishing a Samoan Directory for dissemination to the US, including more vendors, and keeping it updated.

. **Impact**

Rather than sit at the Farmers Market all day to market their produce or drive around from store to store to inquire whether a store wants to purchase produce, farmers have another option. By utilizing the Marketing Directory and calling retailers, farmers save time and make more money because they are able to sell more of their produce. Because they operate more profitably, producers are more likely to remain in farming.

To increase circulation and awareness, the mailing list for the American Samoa Local Producers' Directory Volume III (2) included retailers, producers, the High Court of American Samoa, the Legislature, the Executive offices of the American Samoa Government including the village mayors, the American Samoa Power Authority, the American Samoa Medical Authority, the American Samoa Telecommunications Authority, the administration, faculty and staff of the American Samoa Community College and the local USDA offices.

. **Source of Funding**

Hatch

. **Scope of Impact**

State Specific

**IID. KEY THEME: PLANT HEALTH (I)**

a. **Activity**

Bananas are the most highly valued crop in American Samoa, worth an estimated US\$20 million in 1998. The two known pests of greatest importance are the black leaf streak (black Sigatoka) fungus and banana scab moth. Root-parasitic nematodes, however, may be causing unknown reductions in yield and plantation life. Since most growers in American Samoa are unaware of nematodes and their damage potential, a survey of over 20 banana farms was conducted in 2002-2003. Plant-parasitic nematodes were extracted from roots and soil, identified, and estimates made of population densities and root damage. The number of nematodes per plant exceeded the most conservative damage threshold (2,000/100g roots) and total root necrosis averaged 25% for 16 commercial plantations. The damage was attributed to populations of spiral (*Helicotylenchus* spp.) and burrowing (*Radopholus similis*) nematodes exceeding 25,000/100g roots. Two lesion nematodes (*Pratylenchus* spp.) were also identified in smaller fields during this study; both were first reports for American Samoa. Identification of *P. gibbicaudatus* was only the second record of this nematode on bananas worldwide. A manuscript based on this study has been submitted to *Nematropica* for consideration. A brochure for the "Pests and Diseases of American Samoa" series is in preparation and a workshop is planned for May 2004.



- **Impact**

Growers cannot effectively manage a pest they are unaware of. Contact with plantation owners in their fields during the survey was an opportunity to introduce the concept of nematodes and the root damage they cause. A joint research/extension workshop to present survey results and IPM options has been postponed due to destruction caused by Hurricane Heta (5 January 2004). Some management options are already in practice, however, and include propping, ratoon selection, mulching and fertilization. The rescheduled workshop will reinforce these management strategies, with special emphasis on possible nematode-resistant banana hybrids that tested well in our study. Nematode management can improve yield by increasing the effectiveness of applied fertilizers and mulch, and extending the productive life of a plantation.

- **Source of Funding**

Hatch

- d. Scope of Impact**

State Specific

### **III. KEY THEME: PLANT HEALTH (II)**

- **Activity**

Black leaf streak (BLS), or black Sigatoka, is a major disease of banana worldwide. Cavendish-type “Chiquita” bananas are very susceptible to this fungus disease, including the ‘Williams’ cultivar grown commercially in American Samoa. BLS reduces the functional leaves on a plant, which at flowering should number between 8 and 12. With fewer than eight leaves, fruit quality and quantity decline, fruit tends to ripen prematurely, and individual fruits do not fill properly. Untreated plantations decline more rapidly than those using fungicides and become uneconomic as fruits fail to meet local or export standards. In April 2003 the American Samoa EPA enforced laws banning illegal importing of non-EPA registered pesticides. Growers made their concern known to Research and Extension divisions, and so a BLS workshop was held in May to explain the disease cycle and offer management strategies. Some of these techniques were already in use by many growers, including propping of fruiting plants, ratoon management, mulching, detrashing (deleafing), scheduled fertilizer application, and BLS-resistant cultivars. We discussed the difference between protectant and systemic fungicides and how to safely apply those available to local growers. These recommendations stressed rotation of pesticides for optimum disease control with the least risk of developing fungicide resistance in the pathogen population. The May seminar was followed in October by a three-day banana production workshop. This grant-funded presentation (S.A.R.E.) by Dr. Scot Nelson, plant pathologist from the University of Hawaii, underscored the IPM practices mentioned earlier. We continue to recommend BLS-resistant cultivars, including ‘Ducasse’ and hybrids from *Fundacion Hondurena de Investigacion Agricola* (FHIA), to all growers. FHIA-01 and FHIA-25 were introduced to American Samoa during the past decade, produce very large bunches (>30 kg), and need no fungicides. We are currently importing virus-indexed plantlets for multiplication in our newly opened plant tissue culture laboratory. Following well-advertised taste tests, these BLS-resistant cultivars will be made available at a nominal cost to interested growers.

- **Impact**

Shortly after the AS EPA ban on illegal pesticides was imposed, the president of the Farmers’ Cooperative (bananas) told us import and use restrictions had been lifted and growers were again importing unregistered pesticides from Samoa. Regardless, if banana growers adopt our pesticide use and application recommendations, (1) applicator exposure will be reduced, (2) coverage of the critical cigar leaf will be more effective, and (3) currently available pesticides will be effective over a longer

period of time. A move away from the susceptible ‘Williams’ to a BLS-resistant hybrid could end fungicide use in American Samoa. In spite of this incentive, FHIA-01 has not been adopted due to inferior eating quality. FHIA-25 scored well in a recent taste test against ‘Williams’ but local growers remain opposed to change.

- **Source of Funding**

Hatch

- **Scope of Impact**

State Specific

### **IIIF. KEY THEME: PLANT HEALTH (III)**

- a. Activity**

Farmers and homeowners faced with plant pest problems need access to objective, science-based advice that can help them solve their pest problems in ways that will not damage the fragile island environment nor endanger human health. In many cases plant health problems can be diagnosed and field extension agents can make recommendations. Sometimes additional investigation by a specialist is needed. The ASCC CNR Plant Pathology and Entomology Laboratories have teamed up to offer a plant clinic service to all the islands’ residents. When extension agents are unable to make a diagnosis or are unsure about recommendations, the problem can be submitted to the ASCC Plant Clinic for further examination. Often a diagnosis and recommendation can be made on the spot. Some problems require a field visit. If the problem cannot be resolved locally, the Clinic participates in regional and nation-wide networks of professional diagnosticians who can provide further assistance.

- b. Impact**

Correct diagnosis is the essential first step for effective pest management. All American Samoa’s farmers and homeowners now have access to expert assistance with difficult pest problems, both from scientists in the territory and, if needed, from regional and national experts.

During this fiscal year most problems were diagnosed by extension agents who made recommendations in the field; however 21 more difficult cases were submitted to the plant clinic by 14 different individuals who were able to obtain expert diagnoses and sound recommendations.

- **Source of Federal Funds**

Hatch Act, Smith-Lever Act

- **Scope of Impact**

State specific

### **IIIG. KEY THEME: PLANT PRODUCTION EFFICIENCY**

- a. Activity**

Variety trials of *Brassica chinensis* were conducted to compare yields of 3 cultivars available locally. Because increased population pressures are pushing agriculture up the mountain slopes, these trials incorporated soil erosion assessments of two cultivation methods – no-till and tilled and terraced on 10 – 19% slopes. Both no-till and tilled and terraced plots were sprayed with glyphosate to clear the field. The tilled and terraced plots were tilled and 3 feet wide beds constructed across the contour with a foot walkway between beds. The *Brassica* seedlings were transplanted a foot apart within the rows with 4 rows per bed. Yield data was collected in addition to relative soil erosion data on the two methods.

The three cultivars evaluated were Gracious (Known-You Seed Company, Taiwan), available at the agriculture extension office, Joi Choi (Sakata Seed Co, Japan) available at the local department of agriculture, and Pak Choy White (Tropica Seeds, Vietnam), available at Ace - American Industries, a local hardware store. Joi Choi very significantly out yielded the other two cultivars in the two trials conducted. A flyer encapsulating the first trial, developed to include pictures of each cultivar and a chart of the yield information was sent to the local seed sources.

**b. Impact**

In a workshop conducted, with 20 participants, the yield findings were discussed. Joi Choi seeds are now available in two of the three local sales outlets.

**. Source of Federal Funds**

Smith Lever

**. Scope of Impact**

State specific

**III. KEY THEME: INVASIVE SPECIES (I)**

**a. Activity**

The territory of American Samoa in affiliation with other U.S. Pacific islands, is working to find ways to address this concern, as its tropical island ecosystems are especially sensitive to pests. In 2002, American Samoa Selective Invasive Species Task (ASSIST) was established to coordinate the management of invasive species and outreach to the public about the uniqueness nature of the problem. Representatives of various natural resource agencies supported the taskforce and increase awareness of invasive species in the territory of American Samoa. ASSIST has meet quarterly during 2003 and worked on several public education projects. One of the members, Eric Hanson, presented a paper on the Taskforce at the EMAPI-7 Conference in Florida during November.

**b. Impact**

Though there has been some disagreement between local government agencies regarding what defines a species as being “invasive,” ASSIST members have continued to work together with periodical meetings, workshops, and research to identify the top 10 invasive species of plants in American Samoa. Upon the finding of the 10 problematic species in the territory, the extension service of the forestry section distributed 200 invasive species leaflets and continued with awareness of invasive species to the communities, schools, and church organizations. A booklet that contains the 10 invasive species was distributed to agencies, teachers and students for information and education. A total of 5 schools and 7 communities have responded positively to the issue of controlling and managing invasive species, and most of them have reinforced community regulations for protection.

**b. Source of Federal Funds**

Forest Health

**b. Scope of Impact**

State specific

### III. KEY THEME: INVASIVE SPECIES (II)

#### a. Activity

A network of traps baited with insecticide-impregnated male attractants was maintained throughout the main island of Tutuila. The trapping program is designed to serve as a second line of defense against exotic fruit flies which could cause enormous damage to the islands' agriculture should they be accidentally introduced and established. The first line of defense against exotic pests is the quarantine regulations and inspections at the ports of entry. But only a single infested fruit that bypassed inspection could contain enough exotic fruit fly individuals to establish a population. Should such an event occur, the trapping network could allow early detection of an incipient population so eradication measures could be taken before widespread establishment occurs.

#### a. Impact

Fortunately no exotic fruit flies were detected. Introduction and establishment of an exotic species could have enormous adverse impact. Establishment of a new species could make production of certain fruits and vegetables virtually impossible under the low input systems favored by the territory's farmers. American Samoa could also serve as a stepping stone for introduction of exotic fruit fly species from the rest of the Pacific into Hawaii or vice versa. Annual damage resulting from such a range expansion could easily run into the millions of dollars.

#### b. Source of Federal Funds

Hatch Act, Smith Lever Act

#### b. Scope of Impact

State specific

**Goal 2: A SAFE AND SECURE FOOD AND FIBER SYSTEM. TO ENSURE AN ADEQUATE FOOD AND FIBER SUPPLY AND FOOD SAFETY THROUGH IMPROVED SCIENCE BASED DETECTION, SURVEILLANCE, PREVENTION, AND EDUCATION**

### EXTENSION

The programming for this goal in American Samoa is covered under the 3-d Food Safety and Quality (FSQ) initiative and EFNEP (Expanded Food and Nutrition Education Program). Since there are no formula funds used for this goal, this goal was not addressed in the plan of work, and therefore, not reported on here. At this point in time, there are no researchers having responsibilities relating to food safety and food security.

**Goal 3: A HEALTHY, WELL-NOURISHED POPULATION**

### I. OVERVIEW

The traditional American Samoa culture is a communal society. This means the extended family is prevalent, and people share their resources. Normally, food benefits from federal food programs and family garden produce are shared within family groups, which means most people have access to food. The traditional diet consisted of fish, pork, chicken, root crops, greens, and fruit with coconut cream for flavor. Today, animal protein and starches make up most of the diet with a lot of imported food.

The goal of the 5-Year Plan of Work is to increase the production and consumption of locally grown nutrient dense fruits and vegetables through demonstrating, offering workshops, assisting with gardening, developing and promoting recipes; touring CNR plots and gardens; providing seeds, seedlings, tools, and fertilizers to church groups, farmers, food stamp and Women, Infants, Children (WIC) clients, schools and other youth groups.

### **a. Outputs**

An integrated approach to fruit and vegetable production incorporating locally grown produce in the diet was used to help accomplish this goal. During the reporting period, programs have been presented in villages, schools and appropriate government offices. Food demonstrations used recipes with locally grown produce. Using local produce as part of the food stamp allocation was promoted with demonstrations of recipes using fruits and vegetables. Educational handouts on the Pacific Food Guide Pyramid, new published English/Samoan recipe book, "Team" Nutrition and "Five A Day" materials were given to food stamp recipients, students, teachers and other clients. In-school programs emphasized the production and the consumption of local fruits and vegetables with gardening projects. Seeds and seedlings were free for the people taking the programs.

### **b. Outcomes**

- 498 students, parents and teachers participated in gardening activities within their classrooms and schools with the Ag in the Classroom projects.
- 563 additional people have participated in gardening programs including early childhood education children and teachers.
- 3,540 people completed fruit and vegetable related food, nutrition, and food safety education programs.
- 2,100 people increased their knowledge of the importance of fruit and vegetable consumption, how to select and prepare, and how to safely handle and store them
- 65% ate one or more fruits each day.
- 70 % ate two or more vegetables counting corn and cabbage.
- 3,000 educational handouts on the Pacific Food Guide Pyramid, 550 recipe books in English and Samoan, "Team" Nutrition and "Five A Day" materials to 230 teachers at nutrition workshops in the classrooms.

### **c. Impacts**

- Many food stamp clients commented that they are using the recipes and nutrition ideas to reduce the amount of fat in their family meals, increase the use of local foods (fruits and vegetables), and get more from their food stamp dollars.
- There are now many small-scale vegetable farmers in American Samoa. They have been providing produce about once a week to the Department of Education for the school lunch program.
- The Nutrition Coalition has been revised and continues to work on education and policy development. They have sponsored several successful Health Fairs over the past months and have gathered baseline data on the children of American Samoa.
- About 60 % of the students in Food Safety workshops have started washing their hands more and eating more nutritious snacks and drinking more water instead of soda.
- According to food recalls and verbal responses, 66% of them eat one or more fruits each day and 72% eat two or more vegetables each day.
- With a change in the administration of the DOE school lunch program, changes have been evident in the nutrition and safety of the school lunches. Observers have noticed kitchens are cleaner, food storage units are cleaner without signs of rats, all schools have access to freezers and coolers, and preparation areas are kept more sterilized. The director of the school lunch program is working with the F4-HN program manager to improve the school lunches.

**e. Financial and Human Resources**

6 FTE

Hatch Federal	\$70,743
Hatch Local	\$21,720
Smith Lever Federal	\$80,202
Smith Lever Local	\$22,482
Multistate Research Funds Federal	\$ 1,934
Multistate Research Funds Federal	\$ 1,934

**IIA. KEY THEME: VEGETABLE AND FRUIT PRODUCTION INCLUDING PEST AND WEED CONTROL AND FRUIT TREE PROPAGATION**

**. Activity**

The Greenhouse under the management of the ASCC Forestry Program is a fieldtrip site for students from various schools and the community to spend their leisure and obtain timber trees, fruit trees, flower trees, medicinal trees, etc. The purpose of having a greenhouse is to propagate different kinds of planting materials for forestry research and extension projects. The greenhouse is a nucleus for forestry work and to assist students and clients in providing special training in various aspects of plant propagation, seed technology, soil preparation, plant health, maintenance, and distribution of trees to clients and partners. The holding capacity of the greenhouse is 10,000 seedlings at any time.

**. Impact**

The greenhouse manager has experienced and reported that during the FY03, 200 FSP clients' 38 UCF clients visited the greenhouse for request of trees for projects. Similarly with 15 schools and 300 students visited the greenhouse for science or geography studies and during the celebration of arbor week in American Samoa. Each visitor who entered the green was given 2 tree seedlings to plant at his/her home as requested. A total of 3500 seedlings have been issued to clients and visitors during this period. The tree projects at client' sites and school compounds are well maintained and secured. The schools have requested the Forestry Section to conduct a pruning demonstration for trees at their compounds.

**. Source of Funding**

Smith Lever and Other Federal Funds

**. Scope of Impact**

Territory Specific

**. Activity**

Approximately 25% of the trees in the greenhouse are fruit trees, selected from excellent fruit bearing trees of high yielding and nutritional values. The selection of fruit trees includes sour sop, mango, avocado, golden apple, black sapote, Star apple, pickle fruit, orange, lime, jack fruit, mountain apple, seasea etc. These trees have been treated with special propagation techniques such as air layering, and grafting to improve their genetic potential and improve the quality of fruit vigor, and resistance to pests and diseases. There were 100 fruit trees of assorted kinds being issued to the FSP clients, and others who requested fruit trees for their backyards or in their plantations.

**. Impact**

About 53 of the clients who requested fruit trees from the greenhouse have been motivated by the education program provided by the Nutrition and 4H Program. The biggest impact on the program was the fact that the nutritionists had demonstrated various fruit recipes to serve their clients.

- . **Source of Funding**

Smith Lever and Other Federal Funds

- . **Scope of Impact**

Territory Specific

- . **Activity**

In order to foster better eating habits among the American Samoan population, it is essential to encourage these habits in the young. The Agriculture Extension Service conducted a special training on vegetable gardening for over 50 Early Childhood Education (E.C.E.) teachers, including information on seed-bed preparation, assistance that AES can offer, and nutritional information for various vegetable varieties that grow well in the humid tropics.

- . **Impact**

As a result of the initial workshop, 9 Early Childhood Education centers around the island have started vegetable gardens, and continue to work with AES to integrate the gardens into their learning activities with the ECE students (ages 3-4 years). The ECE administrators showcased the gardening program as one of their most successful activities in a special KVZK program, and held a Thanksgiving harvest festival, where participating schools displayed their produce to parents, teachers and students.

- . **Source of Funding**

Smith-Lever

- . **Scope of Activity**

State-specific

## **IIB. KEY THEME: PROPER SELECTION, SAFE HANDLING, STORAGE, AND PREPARATION OF NUTRITIOUS FRUITS AND VEGETABLES**

- . **Activity**

The Food Stamp Program is one of many long-running nutrition programs in American Samoa. The first five working days of each month, Nutrition Agents continue to provide services for the clients. Through lessons, songs, games, fact-sheet handouts, recipes and cooking demonstrations containing local ingredients from each of the five food groups, clients are receiving nutrition education. Emphasis is placed on eating more fruits and vegetables, reducing fat and salt consumption and eating a variety of food. Educational handouts on the Pacific Food Guide Pyramid, recipes, "Team" Nutrition and "Five A Day" materials were given to food stamp recipients, students, teachers and other clients. When the Food Stamp Staff distribute the coupons immediately following each nutrition session attendance rises tremendously.

Presentations about safe food handling, storage and preparation were part of the training for childcare providers and food stamp clients. At least 50 demonstrations were given to school age children on the correct way to wash the hands to prevent food borne illness. September was "Food Safety Month". The food safety video, developed for American Samoa by the food safety agent, was played on TV several times each week and continues to be shown about twice each month. This is an English and Samoan language production.

- **Impact**

The Nutrition Coalition that was organized in 2001 includes nutrition representatives from ASCC Land Grant (F4-HN), Public Health, DOE (School Lunch), LBJ Medical Center, ASCC Nursing Department, WIC, Food Stamps, and the Diabetic Association. This coalition continues to work on projects to increase the health and well being of the people. They are sponsoring “Health Fairs” with the Theme: “*Taumafa Tatau – Soifua Maloloina*,” or “Eat Well – Live Well! Develop a Healthy Lifestyle”. Activity in the lifestyle is encouraged.

There was an average of 465 Food Stamp clients who attended the FY2003 nutrition classes during the first week of each month. Many clients commented that they are using the recipes and nutrition ideas to reduce the amount of fat in their family meals, increase the use of local foods (fruits and vegetables), and get more from their food stamp dollars. A verbal survey showed that 75% of participants were using the recipes to reduce the fat in their meals. About 60 % of the students have started eating more nutritious snacks and drinking more water instead of soda.

An estimated 2,000 viewers watched the food safety video on TV. There were at least five letters to the editor of the *Samoan News* during that time commenting about food safety and the concepts covered in the video. Now that awareness has increased, more people are calling the paper, radio and F4H-N about cases of food poisoning and requesting information.

Approximately 2,150 educational handouts on the Pacific Food Guide Pyramid, recipes, “Team” Nutrition and “Five A Day” materials were given to food stamp recipients, students, teachers, and clients. In addition, some food safety fact sheets and hand washing posters were also distributed. A four-fold brochure on the four steps of food safety has been distributed in all the villages of American Samoa. The LBJ Tropical Medical Center has seen fewer food borne illnesses over the last year.

The number of people completing fruit and vegetable related food, nutrition, and food safety education programs and increasing their knowledge of the importance of fruit and vegetable consumption, how to select and prepare, and how to safely handle and store fruits and vegetables was an average of 326 food stamp recipients each month. Women, Infants, and Children (WIC) clients also completed information and activity lessons related to food safety for infants and children and the “Five A Day” Nutrition program. There were also another 35 schools whose students learned correct hand washing techniques along with “Five a Day” Nutrition lessons. The total number of participants is estimated at about 2,500 people for the reporting time. According to food recalls and verbal responses, 66% of them eat one or more fruits each day and 72% eat two or more vegetables each day.

- **Source of Funding**

Smith Lever

- **Scope of Impact**

Territory Specific

## **II.C. KEY THEME: HUMAN NUTRITION**

- **Activity**

American Samoa is participating in the program “Healthy People 2010,” a nutritional program aimed at eliminating health disparities among racial and ethnic populations. As part of this program, a project entitled “Nutrition Assessments in Children Living in the Pacific Islands: A Capacity Building Approach,” was initiated by the UH Nutrition Department, with support from the CDC. A training was conducted for staff from ASCC EFNEP staff, Lyndon B. Johnson Tropical Medical Center Dietary Services, Public Health, and Samoan Affairs. A survey of 424 children between the ages of 1 and 10



years of age was conducted to provide baseline data in order to determine the prevalence of obesity and related blood parameters and their association with other health indicators.

. **Impact**

Though the final analysis of this data has not been completed, initial data has been compiled on anemia, BMI, iron deficiency as defined by zinc protophyrin, glucose levels, and cholesterol levels. This data will be compiled with demographic data to support the “Health Living in the Pacific Islands Initiative” program in the development and promotion of long-term public health initiatives.

. **Source of Funding**

Hatch

. **Scope of Impact**

State Specific

<p><b>GOAL 4: GREATER HARMONY BETWEEN AGRICULTURE AND THE ENVIRONMENT. ENHANCE THE QUALITY OF THE ENVIRONMENT THROUGH BETTER UNDERSTANDING OF AND BUILDING ON AGRICULTURE'S AND FORESTRY'S COMPLEX LINKS WITH SOIL, WATER, AIR, AND BIOTIC RESOURCES.</b></p>
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**I. OVERVIEW**

American Samoa comprises seven oceanic islands with tropical rainforests and fringing coral reefs. Fragile ecosystems, limited landmass and resources, plus isolation from outside sources of input make harmony between agriculture and the environment of utmost importance.

As the only land grant institution south of the equator, ASCC occupies a unique position in the USDA CSREES family. It successfully maximizes its modest resources by developing partnerships with other on-island federal agencies and with local government agencies. ASCC’s leadership role in initiating such partnerships is recognized and appreciated by policy makers and the public. One prime example of such inter-governmental agency cooperation is the Interagency Piggery Management Council. Under the leadership of the ASCC CES, the following agencies coordinate efforts to reduce the amount of effluent discharged by piggeries into streams: NRCS, ASEPA, Coastal Management Program (CMP), and ASDOA. Their efforts served as a catalyst in implementing and expanding existing programs.

Biological control has long been the cornerstone of integrated pest management (IPM) in American Samoa. When new crop pests arrive on the archipelago, usually through the action of commerce, they initially cause severe damage. Natural enemies and abiotic factors may help reduce their populations. The success of natural enemies in American Samoa is due, in part, to traditional farming methods, such as intercropping and agroforestry. The limited use of expensive imported pesticides by subsistence farmers and the proximity of plantations to virgin rainforest, where alternative hosts and suitable habitats for natural enemies, also contribute to the success of IPM. Sometimes, though, additional biological control agents are needed.

Outputs and outcomes of projects undertaken at the ASCC are directed towards impacts that help ensure that ecosystems achieve a sustainable balance of agricultural activities and biodiversity. To accomplish this, the AES, CES, Forestry Service, and their partners focus on protecting, sustaining, and enhancing soil and water resources--goals that are in accord with those of our stakeholders. As long as this spirit of intra-governmental agency cooperation continues to enjoy administrative support, ASCC’s impact on the community and on the environment will contribute towards a healthier, more self-sufficient lifestyle for all.

The Cooperative Extension Service and Agriculture Experiment Station have collaborated on the following efforts in order to disperse their research efforts to the public:

- . One 10-minute video on mosquito control, aired on local TV.
- . One article in a refereed journal.
- . Two marketing and producers' directories.
- . Two research-led production workshops on banana and taro.

**e. Financial and Human Resources**

10 FTE

Hatch Federal	\$144,574
Hatch Local	\$ 49,534
Smith Lever Federal	\$119,852
Smith Lever Local	\$ 31,406
Multistate Research Funds Federal	\$ 5,805
Multistate Research Funds Local	\$ 5,805

**IIA. KEY THEME: INTEGRATED PEST MANAGEMENT (I)**

. **Activity**

The people of American Samoa continue to suffer from two devastating mosquito-borne diseases: filariasis and dengue. Dengue is not endemic in the territory, but outbreaks in American Samoa are increasing in frequency and severity as they are elsewhere in the world. Filariasis continues to be a problem, causing elephantiasis and accompanying disability and social stigmatization. ASCC CNR has assisted experts from the U.S. Centers for Disease Control and Prevention (CDC) in promoting community level mosquito control through elimination of breeding sites. The most important mosquito species vectoring these diseases in American Samoa are container-breeders, which have limited dispersal ability. Therefore, communities can protect themselves by eliminating tires, discarded cans, buckets, and other water-holding containers in the community and surrounding area. ASCC CNR assisted CDC in hosting a workshop on mosquito biology, ecology, and control with participants from the environmental inspections staffs of the American Samoa Environmental Protection Agency (ASEPA), the Department of Public Health (ASDoH), and village leaders. ASCC CNR also produced a 10-minute video in Samoan with English subtitles that describes the biology of the principle vectors and promotes control at the village level through breeding site elimination. The video is being aired regularly on the local government-owned television station.

. **Impact**

ASDoH environmental health officers and ASEPA village inspectors are now able to identify principle mosquito vectors, spot their breeding sites, and advise communities on breeding site elimination. Village leaders can incorporate mosquito breeding site identification and elimination into their usual village inspection and clean up activities. Almost every house in American Samoa has a television, and the sets are often tuned to the government-owned channel. As a result, at least some members of most families in the territory now understand basic mosquito biology and know what must be done to control mosquito vectors in the villages. Communities now possess the knowledge they need to protect themselves from these two terrible diseases.

. **Source of Funding**

Smith-Lever Act

. **Scope of Impact**

State Specific

## **IIA. KEY THEME: INTEGRATED PEST MANAGEMENT (II)**

### **. Activity**

The banana scab moth is cited by farmers as the most important insect pest impediment to growing high quality commercial bananas. Traditionally, commercial growers have relied on two organophosphate insecticides imported from independent Samoa to control this pest. These insecticides are not registered by U.S. EPA. ASCC CNR conducted trials with three U.S. EPA registered, reduced-risk insecticide products and demonstrated that these products are as effective and economical as the imported products that local farmers have been importing and using illegally.

### **. Impact**

Farmers now know they have effective, economical, legal, environmentally-sound ways to control scab moth, and they should no longer feel they must break the law to produce the high-quality bananas demanded by the market.

### **. Source of Funding**

Hatch

### **. Scope of Impact**

State Specific

## **IIA. KEY THEME: INTEGRATED PEST MANAGEMENT (III)**

### **. Activity**

Since it was introduced to the territory in the late 1970s, the giant African snail has remained a serious threat to vegetable production. Farmers usually must apply metaldehyde baits to protect their crops. Barriers of ash obtained from the traditional Samoan ovens have often been touted as an alternative way to protect plants from these snails. We assisted a local farmer leader test the efficacy of this method in an experiment with yams, an important traditional vegetable crop. In the experiment, snail damage to yams within ash barriers was as great as that on plants without barriers. It proved impractical to maintain the ash barriers, because the frequent rains that dominate American Samoa's weather repeatedly washed them away.

### **. Impact**

As a result of the experiment, extension agents can recommend that farmers not waste their time and energy trying to protect vegetable crops from snails using ash barriers. The search continues for an effective alternative to metaldehyde baits.

### **. Source of Funding**

USDA SARE Farmer and Rancher Research Grant

### **. Scope of Impact**

State Specific

## **IIB. KEY THEME: TROPICAL SILVICULTURE**

### **. Activity**

In 1998, a research project was conducted to examine regeneration of eight potential commercially useful hardwood tree species on an abandoned agricultural plantation. Regeneration success varied among the species with the fast-growing species performing well without canopy cover and the slower ones growing better with it. Moreover, weedy species especially vines, are a serious

vegetation management problem with little to no canopy cover. A restocking study has been designed where seedlings of the same eight species will be under planted in the existing forest stand, where they will be exposed to a range of light conditions. A portion of the seedlings will receive monthly weeding, other will be mulched for weed control, while some will receive both and other no weed control. Propagation of seedlings for this study is nearly complete. The initial weeding and clearing of the site is underway and planting/treatment installation should begin in Spring 2004.

- **Impact**

This project will have two primary impacts. First, it will provide information about the light conditions required to grow various commercially useful trees on land that would otherwise not be available for economic production. When agricultural plantations are abandoned, trees can be planted for commercial use to derive economic benefit from the land while it is fallow. The species selected in this project have traditionally been used for Samoan craftwork and construction. The second impact is that the project will provide information about regenerating forest trees for environmental purposes. Reforestation efforts in areas such as the National Park of American Samoa or those disturbed by hurricanes would benefit from a better understanding of how these tree species, most of which are native, respond to differing levels of canopy cover. Even in undisturbed stands, a better understanding of the light requirements of tree seedlings would allow for the acceleration of succession processes in the forest. It will also provide a comparison of the effects of traditional hand weeding to alternative techniques for vegetation management around tree seedlings.

- **Source of Funding**

McIntire-Stennis

- **Scope of Impact**

State Specific

## **II.C. KEY THEME: SUSTAINABLE AGRICULTURE**

- **Activity**

Three workshops were held October 21 – 23, 2003, for agriculture professionals to learn current best management practices for banana production and protection, as well as marketing. The instructor, Dr. Scot Nelson, is professor of plant pathology at the University of Hawaii at Manoa.

- **Impact**

Forty-four participants learned a new rotation schedule for applying fungicides. It comprises the inclusion of the latest fungicide products and the sequence of their application in order to minimize pesticide resistance. They also learned how to force-ripen bananas in order to provide the market with a steady supply of dessert bananas.

- **Source of Funding**

Sustainable Agriculture Research and Education Professional Development Program

- **Scope of Impact**

State Specific

## **IID. KEY THEME: WATER QUALITY (I)**

- **Activity**

Each month water samples from 49 permanent streams on Tutuila Island are analyzed for pH, conductivity, turbidity, dissolved oxygen, temperature, salinity, soluble phosphate, nitrate-N, ammonia-

N, calcium, magnesium, potassium, and sodium in order to assess their levels of human impact, especially from agricultural activities. Fishes, crustaceans, mollusks, and algae are surveyed in select reaches of 15 of these streams in a search for potential bioindicators of stream water quality.

- **Impact**

Chemical data are shared with the American Samoa Environmental Protection Agency to aid in its reporting under Section 319 of the Clean Water Act. Based on an analysis of variance of phosphate concentrations, the streams are assigned to one of four levels of human impact. Comparing the composition of the biological communities against phosphate concentrations is necessary and sufficient to construct a multimetric index for quickly assessing water quality.

- **Source of Funding**

Hatch

- **Scope of Impact**

State Specific

### **IID. KEY THEME: WATER QUALITY (II)**

- e. **Activity**

In a close relationship with water quality, Adopt-a-Watershed is a leadership program for educators in environmental education curriculum development. Adopt-a Watershed Curriculum is environmental program designed to use watersheds, streams or water catchments areas as field laboratories for students and teachers to study and learn many scientific aspects of water, trees and soils, which can integrate into teaching other subjects aside from science. The American Samoa Forestry Program in partnership with the National Adopt-a-Watershed Program in California sponsored a 5-day workshop for 35 elementary teachers (Grades 6,7,8) in June of 2003. The science curriculum coordinator from American Samoa Department of Education (DOE) was our contact partner and she attended the workshop as well. The teachers were introduced to three Adopt-a-Watershed curricula on water, trees, and soil. The purpose of the program is to train the teachers so that they could increase their teaching capacity and be confident of their special skills within the curricula.

- e. **Impact**

The 35 teachers who attended the training received their certificates of participation in the program and earned 4 credits for ASCC-UH degree program for teacher's certification. The teachers were overwhelmed with the program content and the applicability of the activities to the learning and teaching model for American Samoa. All the teachers committed to participate in a similar workshop in the summer of 2004. Six of the teachers who attended the workshop were guests to our TV talk show; focus on Forests and Wetlands Preservation where they spoke highly of the workshop content and the scientific knowledge they acquired from it. During the Island Wide Science Fair sponsored by Curriculum Department of DOE, in March 2004 approximately 50% of the projects displayed for the competition originated from the Adopt-a Watershed program. All of the participating teachers have integrated activities of Adopt-a Watershed curricula into the current DOE one. In fact the overall winner of the Science Fair for 2004 was a student with a project entitled, "Natural Way to Multiply Orchards in American Samoa".

- e. **Source of Funding**

Urban & Community Forestry

- e. **Scope of Impact**

State Specific

### **III. KEY THEME: WASTE MANAGEMENT**

#### **b. Activity**

The Agriculture Extension Service continued its involvement in the Interagency Piggery Management Council, an inter-governmental agency partnership between AES, USDA-NRCS, American Samoa EPA, the American Samoa Coastal Management Program, and the American Samoa Dept. of Agriculture. The IPMC's goals are to reduce the amount of effluent being discharged from local piggeries into streams, and to promote better swine husbandry among local farmers. The IPMC conducted a swine waste management workshop in Matu'u after a construction worker working in a stream fell ill with leptospirosis. Over 30 villagers attended. AES then continued follow-up site visits in the village to provide technical assistance to landowners wishing to adopt new management techniques. The IPMC also produced a leptospirosis brochure that explains transmission and symptoms of the disease.

#### **c. Impact**

Eight months after the Matu'u workshop, all piggeries that were not in compliance with EPA and Public Health regulations have been removed entirely or moved back from their stream. Four families have also started adopting new methods of waste management that are considered "beneficial use," included the addition of dry litter to pig pens, and modified composting systems. The CDC has also responded to IPMC's request for assistance with the public perception that leptospirosis is not prevalent in the Territory, and will be conducting a serum survey to determine its occurrence in the human population.

#### **d. Source of Funding**

Smith Lever & NRCS

#### **e. Scope of Impact**

State Specific

## **Goal 5: ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS**

### **I. OVERVIEW**

There are many economic and social challenges that face Samoan families. One that seems to underlie almost every issue is the confrontation of two very different cultures. As American Samoa becomes more and more westernized, families are forced to reconcile their traditional culture of respect for elders and communal living with the often directly opposite western value of individualism. There is a need to help ease the transition for the youth and assist them with valuing their Samoan Culture. Another challenge is the changing population as it affects the inhabitable land and family values. With about 18% unemployment, ever-increasing cost of living, almost 61% with incomes at or below the U.S. poverty level, and more than 50% of average spending going to food and housing, the people need enhanced economic opportunity to maintain and increase their quality of life.

#### **a. Outputs**

To address this goal during FY 2003, programs were offered in the following areas: Entrepreneurship and Home based businesses, Youth at Risk issues, Samoan Culture and Arts/Crafts, Clothing Construction, Farm Safety, *Elei* Fabric Art Printing, Self-care for Mental Health Clients and Youth Development Issues. Samoan Culture has been included in program development and delivery of all areas.

2. To help ease the difficulties created during social transition, the Family, 4-H, and Nutrition staff have increased workshops in Culture Awareness. Pilot projects were successful in FY2001 so have

continued during 2002 and 2003. These included cultural arts and crafts, nature art and *siapo* (tapa) making.

0. To increase social stability, Childcare Provider training and Parenting Education programs were updated and adapted to American Samoa. The instructor is a technical advisor for the Day Care Centers, is working with the Childcare Social Service Office to improve training and will be offering village workshops on parenting issues.
0. To increase economic opportunities for homemakers, farmers, and workers, Entrepreneurship and Home-Based Business courses were offered.
0. To increase social stability, the number participating in the Children Youth and Families at Risk programs increased even though the funding for CYFAR has been completed and is now on sustainability.

To increase the economic base and knowledge of the American Samoans, a financial management coalition has been organized.

**a. Outcomes**

- . 65% of the parenting participants actually adopted one or more principles, behaviors, or practices within six months after completing one or more programs.
- . Over 600 youth, teachers and parents participated in Culture Awareness programs.
- . 56% plan to use the skills learned in keeping their culture strong.
- . Seven F4-HN Agents spent about 100 hours each with over 500 youth in the elementary schools completing the reading literacy programs.
- . 12 parents took the 3 credit hour parenting course taught by the Family and Consumer Sciences program. All 12 said they used at least 10 of the principles, behaviors, or practices as they worked with their children.
- . A financial brochure, “Get a Grip on Your Money”, was developed and translated into Samoan. It will be used in the villages with financial workshops.

**a. Impacts**

- Business start-ups at the completion of the NxLevel courses included:
  - (Laura may have this information)
- Eighty percent of the CYFAR participants changed attitudes towards the Samoan culture and have developed a sense of pride in their identity as Samoans and appreciate the cultural uniqueness and diversity.
- 5 teachers have added more hands-on experiences in their Samoan History classes.
- Collaboration of agencies has ensured program sustainability for CYFAR activities.
- 85% of the childcare providers have requested additional training from the F4-HN Program Manager.
- All 12 of the parents said they used at least 10 of the Parenting principles, behaviors, or practices as they worked with their own children.
- The Mental Health workers have reported that the clients are helping with their family meal preparation in their homes. They are showing more pride in their looks and in the clothes they are making and the completed craft items. Family members are making positive comments to the workers about the differences they see in their family member.

**a. Financial and Human Resources**

4.1 FTE

Hatch Federal

Hatch Local

Smith Lever Federal

\$63,470

Smith Lever Local \$19,993  
Multistate Research Funds Federal  
Multistate Research Funds Local

## **IIA. KEY THEME: CHILDREN, YOUTH & FAMILIES AT RISK**

### **. Activity**

4-H Cross Culture Awareness Project --- The purpose of this project is to promote Samoan traditional costumes, art, crafts, language, music, culture, sports and agricultural practices. The importance of the identity and the appreciation of the uniqueness of the culture was always emphasized through the workshops offered. Workshop topics included Samoan Music, dance, oratory, legends and myths, *siapo* (tapa making) *elei* (fabric printing), carving and respectful language and behavior. Their understanding of the culture was enhanced through the activities offered. There have been many requests from the schools (both public and private) for this program so it was continued in FY2003 and into 2004.

Reading Readiness Project -- The purpose of this project was to instill in young children a love and interest for reading. The project staff designed activities to build self-confidence and equip children with behavioral skills needed for the successful completion of this activity. In addition, on-going tutorial sessions were on site for children who were school dropouts or slacking behind in the project. Puppets were used to get the children interested in the stories.

Children and Youth At Risk-- Program materials are being developed, translated, and/or adapted for the American Samoa Territory. Some have been pilot tested and changes are being made so they can be adopted and used with all youth development programs. These materials include science and math applications, clothing/sewing information, and Samoan cultural project materials.

### **. Impact**

More than 600 youth were involved in 45 cultural workshops and activities. Eighty percent of the participants changed attitudes towards the Samoan culture and have developed a sense of pride in their identity as Samoans and appreciate the cultural uniqueness and diversity. Collaboration with the Department of Education, ASCC Samoan & Pacific Studies, Amerika Samoa Humanities Council, and Village Councils has ensured program sustainability.

More than 600 school age children participated in more than 40 in-school reading and enrichment programs using the "Read to Me Samoa" approach and Samoan reading materials along with English materials. Parents have also started reading more to their children, hence spending quality time as a family.

### **. Source of Funding**

Smith Lever and Other Federal Funds

### **. Scope of Impact**

Territory Specific

## **IIB. KEY THEME: CHILDCARE & YOUTH DEVELOPMENT**

### **. Activity**

A new MOU is being developed to build on the six-month training program (52 contact hours) that was offered to the childcare providers employed in the 16 licensed centers on Tutuila during FY2002. Participants representing all of the more than 22 centers will be involved in the training. The training



will be a joint effort with the Department of Human and Social Services. The F4-HN Program Manager will be the main instructor for the training with assistance from members of the staff. In the past the providers demonstrated a lot of commitment in giving up every other Saturday and time with families to take the training. Training sessions will include the following topics: In depth study of ages and stages of development, nutrition and food safety, running the business, CPR training, developing curriculum, organizing the facility and setting up learning centers, arts and crafts, positive behavior management, power of play and storytelling. The instructor is now a technical advisor for the Day Care Centers and will be offering workshops on issues requested by the providers. Youth Development issues have been involved with the Parenting Education course offered at ASCC by the Program Manager. Parenting Education workshops are being taken to the villages.

- . **Impact**

Thirty-two childcare providers were certified during a graduation ceremony, in FY2002. It is planned to certify many more after the completion of the new MOU activities.

Providers were heard to say: “I learned how to discipline the children without hitting them.” “I learned so much and had such fun going through the whole thing, I’d do it again.” “I attended all the sessions and we need more seminars, workshops and continuous training in the future so we can maintain and continue to improve the skills that we have just learned.” “We are applying the many principles of food safety and nutrition to our daycare center.” “Our center is so much more organized and is a learning center for the children.” “There is such power in using play and storytelling with the children.” “I enjoyed the hands-on experiences that helped us apply the ideas.” Seventy Percent of the childcare providers have requested additional training.

All 12 of the parents said they used at least 10 of the Parenting principles, behaviors, or practices as they worked with their own children. Parenting workshops are being planned for the villages, Faith Community, and for DOE Teachers as a result of stakeholder input.

- . **Source of Funding**

Smith Lever and Other Federal Funds

- . **Scope of Impact**

Territory Specific

## **IIC. KEY THEME: DEPENDENT CARE OR SELF-HELP**

- . **Activity**

The Mental Health Program continues to be an on-going program for the F4HN and the Mental Health Services. The F4HN program will continue to work with mental health clients in different varieties of hands-on learning activities. Nutrition Education and cooking demonstrations were the first activities used with the 28 Mental Health clients during FY2002. They were in attendance every Wednesday for their weekly activity. Each visit was always a success due to the response and support of the clients who are always patient and very cooperative with the lessons, nutrition games and songs, and the different recipes demonstrated. There were opportunities for clients to become involved in assisting with preparing and serving delicious and nutritious meals! Other lessons have been on clothing care, sewing easy projects and cultural arts and crafts.

- . **Impact**

One staff member said, “It is a great feeling of sharing and caring for these people, we are able to share what they hear, feel and think. Sometimes they share with us their feelings of joy because they know that there are people who really want to help them.”

The Mental Health workers have reported that the clients are helping with their family meal preparation in their homes. They are showing more pride in their looks and in the clothes they are making and the completed craft items. Family members are making positive comments to the workers about the differences they see in their family member.

The group of clients held a bazaar in December 2002 to sale their arts and crafts and some food items. The staff said how successful it was. The clients stood a little taller when people purchased their products.

• **Source of Funding**

Smith Lever and Other Federal Funds

• **Scope of Impact**

Territory Specific

### **III. STAKEHOLDER INPUT PROCESS**

The following is a summary of the stakeholder inputs:

#### **Families, 4-H & Nutrition (F4HN) Community Survey FY2003**

The F4HN has made a lot of improvements to include more clients and other community members who never participated in this effort before. A total of 750 adults and 250 youth contributed to the stakeholder input process. The surveys and focused group discussions provided the following program priorities for CNR to address:

- More nutrition education in the school systems with more health fairs including the private schools
- Need Healthy lifestyle programs that include nutrition and activity or exercise
- Develop short financial and parenting programs that can be offered in the villages
- Train the Health teachers in Sexuality Education so they can incorporate it into their curriculum
- Develop a new MOU to offer more training for the child care providers
- Get a stronger youth development program going with a variety of projects, more village clubs and more after school programs (to accommodate students and working parents)
- Continue “Sewing for Kids” after school program and revive basic sewing program for adults
- Strengthen collaboration with other government agencies and civic organizations who do similar programs
- Increase all exposure to the media for community awareness of programs
- Review and reorganize nutrition education for American Samoa to include experiential learning

Families, 4H and Nutrition (F4-HN) Program is now extending to include basic sewing education as a result of many requests. The program “Sewing for Kids” is teaching 10 – 12 year olds to sew and entrepreneur skills to earn money for purchasing their own sewing machines. The schools as well as the village community have a chance to once again enjoy making their own clothing. F4HN anticipates including more civic groups (youths and adults) in the community to get involved in some of the programs. They are taking advantage of the media (TV, radios & newspapers) to promote public awareness. In fact this process has already begun. The American Samoa Financial Coalition was organized after obtaining the results of the stakeholder input. F4HN keeps adjusting its yearly programs depending on the community need being addressed as a result of program evaluation and stakeholder input contribution.

## **Agriculture Extension Service (AES)**

The Samoan traditional leaders, who are also farmers and powerful decision makers in the villages control the way the customary lands are used by each family. However, the extension staff are very sensitive to the culture to ensure they approach the community leaders in a very respectful and comfortable manner in order to accept their visitations and programs in the community. Last year, Agriculture Extension continued to keep this open communication to allow the free flow of information between the Land Grant Program and the community. This created a close partnership with other minority groups such as Korean, Filipino, Tongan and Chinese farmers. Regardless of language barriers with these groups, the extension staff tried their best to serve these nationalities as well.

### **Agriculture Extension Community Survey FY2003**

AES relies on both information collected at workshops and at individual farm visits. More than 500 individuals contributed to the stakeholder input process. The surveys and focused group discussions provided the following program priorities for CNR to address:

Increase targeted financial management trainings, such as that conducted for local Tilapia farmers

Increase information about organic crop production

Assistance for farmers in exploiting new marketing outlets

Assistance in obtaining access to land (e.g. plantation roads)

More workshops about management of specific crops, e.g. workshops on banana production, cabbage production.

Help in seeking financial assistance for farmers.

Increased seed sales.

Help farmers obtain standardized information about product quality standards, especially with School Lunch.

More swine management information.

Increase all exposure to the media for community awareness of programs.

Strengthen collaboration with the Department of Agriculture.

AES has responded to this input by collaborating with the Resource Conservation and Development Council, the Small Business Development Center and the Women's Business Center to plan a series of trainings in business planning for agriculturalists, organic farming, value-added processing and conservation planning. In addition, AES will be hosting a workshop on organic vegetable production in FY 04.

One of Land Grant's extension staff, Aufa'i Ropeti Areta, who is also a graduate student at Colorado State University, conducted an agricultural survey for his thesis research last year for 300 people that were randomly selected. He kindly authorized Agriculture Extension to use part of his data, especially the last page to contribute to the stakeholder input process. The final page includes a question that states, "Please list the **top three issues** that Agriculture Extension Programs should address to benefit Community and Natural Resources in its stakeholder input efforts?" Even though Research and Agriculture Extension debated the survey results, they still tried to interpret the data due to the way the survey was presented.

- About 80% of the people surveyed responded to "extension visitations." It wasn't clear if extension visits was not enough, or if these people were not visited or whether these families have any requested assistance or not, but Research and Extension divisions would assume that extension visits need to be continued and expanded to improve future services.
- About 78% felt that "workshops and field demonstrations" should be addressed. The extension has come to a conclusion that these activities need to do more frequently so that the clients can have access to meeting sites. In other words, extension needs to do more workshops and demonstrations, and to expand these activities to the isolated villages.

- 50% of the respondents said “pesticide safety training” was another issue to address. It wasn’t clear whether this training was not accessible by the community but the extension has come to an assumption that this activity needs to be accessible by the community due to transportation problems and isolation.
- 37% suggested “pests and diseases control” need to be addressed. Extension would assume that this issue refers to both plants and animals.
- 18% recommended “vegetable production” is another issue that needs to be addressed by the extension.
- About 15% responded to “Stop the use of pesticides/herbicides”

### **Forestry Extension Service:**

The forestry extension service continued in partnership with government agencies, villages, churches, schools, sport clubs, and interested individuals to ensure the success of the program. In addition the forestry program maintained the coordination of the television talk show that allowed our constant exposure to the general public in service of information dissemination for use by our clients. 1,500 participants contributed to the forestry stakeholder input process through forestry council meetings (FSP, UCF, CE, (Invasive Species Task Force), presentations in schools, village meetings, forestry inventory, teacher’s workshops, conferences, arbor week celebration, *Le Tausagi* Environmental Group, summer camps, ASCC students, Parent’s and Teacher’s Association, student’s/teacher’s tours of the greenhouse, and individual discussion. The following feedback from the community was received:

- There was a great demand from government and private schools to visit the greenhouse at ASCC-CNR as field laboratory for students to learn forestry and environmental science. And some of the teachers requested greenhouses at their respective schools.
- Our forestry clients expressed their needs to have a wide selection of fruit trees in the greenhouse so they can obtain sufficient trees for planting at their plantations.
- Village communities around the coastal areas have requested more trees for coastal stabilization projects and protection from strong winds and salt spray.
- Our Samoan healers, or *taulasea*, made many visits to learn of our medicinal garden at the Land Grant station and to confirm the knowledge of species use in addition to harvest specimens for preparing medicines.
- Some of the public who visited the greenhouse requested to provide flowers and other beautiful flower trees for shade and beautification of their home properties.
- Faleasao and Fitiuta villages in Manua Islands have requested more coastal stabilization trees to complete the projects that are in progress.
- The greenhouse that was planned for Manua High School is now at the site of the school ready to be installed.
- The golf players have expressed the desire to see a variety of beautiful trees planted at the sites of the 19 holes at Iliili Golf Course.
- Many hillside clients have requested the availability of nitrogen fixing trees for replenishing soil fertility and control soil erosion. They have experienced low crop yielding and productivity in addition to heavy soil loss even to the point of mud slides.
- Our people have now realized the importance of having our historic tree species at their land sites. The focus of the forestry greenhouse is the propagation and multiplication of all native species so that we can give them back to our landowners.
- The summer camps offered by *Le Tausagi* for students in Tutuila and Manua had stimulated more students and parents to participate and be involved with hands-on activities to protect the environment.

More tree plantings and watershed walks, and sharing of our Samoan legends, cultural exchange lessons were discussed and shared during these expeditions.

- Clients are still in need of having planting materials of ava (*Piper methysticum*) at their plantation sites. Since the world markets for ava has declined, the Samoan people would like to grow them in their lands for the promotion of the Samoan ava to welcome guests.
- More clients are interested in agroforestry practices in their lands.
- The stream restoration projects and wetlands projects in 8 wetland sites were introduced in the respected places through community workshops and meetings.
- Many elementary schools and high schools requested resource people from forestry section to speak about different subjects on forestry, agroforestry, and natural resource management.
- Some of our off-island visitors inspected the greenhouse and they complimented the activities that are done by the forestry crew and student internship program, regarding propagation, species collection, labeling of tree species, soil preparation, release of trees for clients, and greenhouse presentations.

## ASCC Partnerships

Many of the ASCC Division of Community & Natural Resources staff members serve as members of councils and committees of external organizations. Inputs are generated through these interactions with collaborating agencies and organizations. The following government and non-government stakeholder organizations have regular opportunities to provide input:

- American Samoa Community College (ASCC) Board of Higher Education
- Community & Natural Resources (CNR) Advisory Council
  - ⇒ Urban and Community Forestry Advisory Council
  - ⇒ Forest Stewardship Advisory Council
  - ⇒ Conservation Education Council
  - ⇒ ASCC Small Business Development Center
  - ⇒ ASCC Department of Samoan & Pacific Studies
  - ⇒ American Samoa Small Business Development Network
- Interagency Piggery Management Council
- American Samoa Soil & Water Conservation District
- Natural Resources Conservation Service (USDA-NRCS)
- American Samoa Resource Conservation and Development Council
- U.S National Park Service
- Department of Commerce (DOC)
  - ⇒ Coastal Zone Management Program
  - ⇒ Fagatele Bay Marine Sanctuary
  - ⇒ Office of Tourism
- Department of Agriculture (DOA)
- Public Health Department (PH)
- Department of Marine & Wildlife Resources (DMWR)
- Governor's Office
  - ⇒ American Samoa Historic Preservation Office American Samoa Historic Preservation Office
  - ⇒ Office of Protection & Advocacy for Disabled
  - ⇒ American Samoa Environmental Protection Agency (ASEPA)
  - ⇒ Office of Samoan Affairs (OSA)
- Department Parks & Recreation
- Territorial Administration on Aging (TAOA)
- Department of Port Administration
- Territorial Emergency Management Coordinating Office (TEMCO)

- Department of Public Works
- American Samoa Power Authority
- Office of Public Information
- Samoa News and Samoa Post
- Private and Public Schools
- Church Organizations (youths, women, men)
- Village Councils
- Village men and or women's groups
- Le Tausagi Environmental Group
- Boys and Girls Scouts of America
- 4H school & village clubs
- Women's Business Center
- Diabetic Association
- Humane Society
- Taputimu Farmers' Cooperative
- American Samoa Farmer's Cooperative
- American Samoa Vegetable Farmer's Federation
- Tongan Community
- American Samoa Nutrition Coalition
- American Samoa Coalition for Teen Pregnancy Prevention
- Star Kist Samoa
- Samoa Packing
- Private business community

#### **IV. PROGRAM REVIEW PROCESS**

No changes have been made in the programs review process. The guidelines as outlined in the 2000-2004 Plan of Work are being followed.

#### **IV. EVALUATION OF THE SUCCESSFUL MULTI AND JOINT ACTIVITIES**

The multi-state and integrated research and extension requirements do not apply to the formula funds received by American Samoa. American Samoa, the only Land Grant Institution south of the equator, is somewhat isolated. The University of Hawaii is the closest Land Grant Institution and is approximately 2,500 miles away. However, ASCC does participate in joint projects with partners in the American Pacific through Agricultural Development in the American Pacific (ADAP) projects, multistate research projects, and research coordinating committees. The work supported by Hatch and Smith Lever funds included multidisciplinary and joint research and extension projects. The following questions are addressed focusing on multidisciplinary and joint research and extension.

Did the planned programs address the critical issues of strategic importance including those identified by the stakeholders? Where feasible, the stakeholder-input process is included in the programs and projects. Some of the issues that continue to be identified by the stakeholders are already being addresses while others are outside the scope of our mission.

Did the planned programs address the needs of the under-served and under-represented populations of the Territory? The population of American Samoa is 88% Samoan with 58% of the population living below the poverty level. A large majority of the population consists of second language English speakers. The programs and projects have been designed with these demographic facts in mind. The extension agents are bilingual (English and Samoan). Almost all of the extension programs are conducted in Samoan with a few in English with Samoan translation. Printed materials are Samoan/English, as is television programming.

Researchers visiting clients make use of translators when necessary. All persons requesting programs, information, technical assistance from research and extension receive assistance.

Did the planned programs describe the expected outcomes and impacts? The programs did achieve the expected outcomes. The programs/projects were designed to meet the needs of the people of American Samoa and for the most part were on target.

Did the planned programs result in improved effectiveness and/or efficiency? There is increased communication between research and extension and among disciplines. This is resulting in more joint programs/projects and better utilization of expertise of the staff, which allows for better service to the community. The program managers are also revising program delivery for better utilization of staff time and more effective programming.