

American Samoa Community College (ASCC)

Division of

Community and Natural Resources (CNR)

FY 04 Annual Report of Accomplishments & Results

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I. 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 new 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. Moreover, American Samoa received a Risk Management Grant award from Washington State University in 2004. In FY 2004, 50 FTE were supported by Hatch, Smith Lever, 3-d, Forestry and other federal funds.

II. GOAL 1: AN AGRICULTURAL SYSTEM THAT IS HIGHLY COMPETITIVE IN THE GLOBAL ECONOMY
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OVERVIEW

Cooperative Extension continued to use an integrated approach to disseminate information to the Territory through a biweekly 30-minute television program, publications, workshops, demonstrations, meetings, farm visits and press releases. Collaboration with agencies and non-governmental organizations like the American Samoa Resource Conservation and Development Council and Soil and Water Conservation District continued to be effective in launching new programs, such as the recent promotion and endorsement of agroforestry and other practices as sustainable farming methods. The community continues to look to Cooperative Extension Service (CES) 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 in seeking financial assistance, innovative marketing opportunities, and developing entrepreneurial management strategies that can help maximize farm profits.

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

- Marketing
- Vegetable Production
- Traditional Crop Production
- Swine Management
- Waste Management
- Risk Management
- NxLevel® Agricultural Business/Entrepreneurship
- Medicinal Plants
- Pesticide Safety
- Farm Safety
- Forest Health
- Urban Community Forest
- Conservation Education
- Forest Stewardship
- Forest Legacy Program
- Agroforestry Systems
- Inter-Agency Partnership
- Greenhouse Projects
- Forest Research Projects
- Le tausagi Environmental Education

The CES and AES 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 collaboration and partnership, CES and AES have achieved the following outputs in 2004:

- 19 appearances and programs on local television news
- 499 farmers visited
- 604 farmers served in the Ag. Extension Office
- 35 educational programs and workshops (National Agriculture Day, Arbor Week, ASCC Career Day, field trips and tours)
- 9 Extension/Research non-scientific publications

. 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	865

The high demand for fresh vegetables from the school lunch program promoted the interest in vegetable farming. Moreover, the associated high market prices of fresh vegetables led to more new farmers participating in vegetable farming demonstrations. AES also continued to work with partner agencies such as Department of Agriculture, EPA, American Samoa Power Authority Wastes and Water Divisions, Department of Commerce and the USDA Natural Resource Conservation Service to lead helpful waste management workshops and shared publications. Water contamination and bacterial-related illnesses coupled with increased enforcement by EPA and Public Health of environmental regulations resulted in large numbers of pig farmers and villagers attending waste management workshops. These participants continued to work with Agriculture Extension to implement better management system 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	62

The Cooperative Extension has been fortunate to use the public television station as a primary means of disseminating information, through its biweekly “Laufanua ma Atina’e” 30 -minute television program. The Extension non-scientific publications will be available on-line at the Agricultural Development in the American Pacific (ADAP) website. Agriculture Extension also collaborated with the EPA and Department of Commerce to finalize the brochure about waste management that will be distributed to attendants of future swine waste management workshops.

2. 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	27

The loaning of tools and equipment decreased over the years as a result of the availability of a small tractor owned by the Department of Agriculture. The tractor assisted the farmers with soil tillage and field preparation. The Department of Agriculture provided this beneficial service for medium-scale vegetable farmers on flat lands, thus reducing labor time.

Lending of tools and equipment to vegetable farmers was a common practice to motivate groups and individuals to farm. By using Extension tools, new vegetable farmers were able to begin their farms without waiting to buy the needed tools. The program has enabled individuals and groups to purchase their own tools and equipment after their first harvest of vegetables.

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	512

More than 400 farmers visited the Extension office to purchase vegetable seeds as well as bananas and taro planting materials. This number does not include the farmers who purchased pesticides, fertilizers, and vegetable seeds from ACE American Industries and the Department of Agriculture. Over 4000 vegetable seedlings were used for schools and on-farm demonstrations in an effort to promote the production of locally produced vegetables.

Results from the cabbage and spinach cultivar trials are shared with the local hardware stores that supply gardening seeds, as well as Department of Agriculture, in an effort to ensure that local businesses sustain a consistent supply of the top 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	320

Extension agents continued to conduct 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 the Marketing Directory also conducts surveys regarding production and marketing from each farmer-entry. Agriculture Extension received a Risk

Management grant from Washington State University to develop farmers' skills in record keeping, business plans and marketing strategies in addition to the NxLevel® courses taught by the Small Business Development Center.

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	34

Agriculture Extension Service continued to work with ten Early Childhood Education Centers, three elementary schools and one vocational high school to develop vegetable gardening projects that could be integrated into their learning experiences. The agents provided assistance in the preparation of seedbeds, providing seedlings, initial planting, and continued technical assistance until harvest. Agriculture Extension Service is expecting more schools to join in the campaign of growing local vegetable produces to improve nutrition.

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	11

Five farmers were successful in obtaining WSARE Farmer-Rancher grants to do educational research on farm. Agriculture Extension Service agents guided and assisted these WSARE applicants to prepare proposals for funding. Other farmers were able to obtain assistance through veterans' loan program. The extension agents assisted these farmers in developing their agribusiness plans.

b. Financial and Human Resources

Please refer to Appendix 1

A. KEY THEME: DIVERSIFIED/ALTERNATIVE AGRICULTURE

a. Activity: Completed renovation of the laboratory, formulated and tested new media. Initiated 5 leaf blight resistant taro cultivars, 5 local banana varieties, and 3 Dendrobium orchid spp. into tissue culture. Received and multiplied 11 leaf blight resistant taro breeding lines and 6 black leaf streak banana hybrids from the Secretariat of the Pacific Community, Regional Germplasm Centre, Suva, Fiji.

b. Impact: The new taro lines will add variety to the diet and diversify genetic resistance of existing taro cultivars. Every leaf streak resistant banana hybrid planted will reduce fungicide use in American Samoa. Developing new techniques of micro propagation enhances its benefits to agriculture and to the profession.

Deleted: plantlets from material collected on-station, including: taro 'Semi', 'Fili', 'Palau-10', 'Seve', 'Suga'; banana varieties 'Tausoa', 'Misi luki', 'Kalua', 'Fa'I Samoa', and 'Va'a'; several

Deleted: New media are formulated and used to test and observe the response of these on-station plantlets.

Deleted: the

Deleted: replacements of *in vitro* cultures

Deleted: (SPC-RGC)

Deleted: The different stages of plant materials and the variety of media were used for the presentation of a new plant propagation method (Plant Tissue Culture) to the Princess of Toga, student, farmers, co-leagues, and general public.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

B. KEY THEME: BIOTERRORISM

a. Activity: Participated as Coordinator for National Plant Diagnostic Network (NPDN) in monthly NPDN conference calls with Western Region states and territories. Trained in Hawaii as First Detector Educator/Trainer. Provided First Detector training (NPDN) to four agriculture extension agents. Updated laboratory cameras and microscopes to allow linkage with NPDN. Presented NPDN to American Samoa in three seminars, a newspaper article and on TV.

b. Impact: Threats to American Samoa agriculture, either intentional or accidental, can be contained and possibly eradicated. Important interceptions are reported to the NPDN, offering crop protection to all US states and territories. Membership in the NPDN is an important linkage between CNR, American Samoa, and the USDA.

c. Source of Funding: Hatch, NPDN

d. Scope of Impact: Regional

C. KEY THEME: INVASIVE SPECIES (I)

a. Activity: As part of the Forest Health program, the staff has been participating with the American Samoa Invasive Species Team (ASIST). The Team has been conducting a preliminary invasive plant species survey and has detected several new species including giant reed, strawberry guava, and golden dodder. A dodder control project was the first field action taken by ASIST. Repeated visits have been made to one of the two infested sites where affected vegetation has been cut or sprayed and burned.

b. Impact: These activities have generated attention onto the invasive species problem through media coverage. Public awareness of the risks of invasive and the means of dealing with them has been increased.

c. Source of Funding: USFS State and Private Forestry Cooperative Forest Health Protection Grant

d. Scope of Impact: State specific

D. KEY THEME: INVASIVE SPECIES (II)

a. Activity: American Samoa is at risk for accidental introduction of exotic fruit fly pests from Hawaii and other places with which it has air and sea links. Accidental introduction and establishment of a new fruit fly species could be devastating to the territory's capacity to produce fruits and vegetables. The ASCC CNR entomology laboratory continues to maintain a network of male-attractant-baited fruit fly traps to detect any exotic flies that may enter the territory. Early detection increases the likelihood that eradication measures can be implemented in time to prevent establishment and spread of a newly introduced exotic species.

b. Impact: No exotic fruit flies were detected during the year. It is difficult to estimate the economic impact of the surveillance program, but the value of preventing establishment of a new species of fruit fly is potentially enormous. Beneficiaries include local fruit and vegetable producers and consumers as well as other countries/states/territories with air and sea links to American Samoa who would be placed at greater risk if an exotic species became established in the territory.

c. Source of Funding: Hatch Act, Smith-Lever Act

d. Scope of Impact: State specific

E. KEY THEME: INVASIVE SPECIES ((III) RESEARCH FORESTRY

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, the American Samoa Selective Invasive Species Task (ASSIST) was established to coordinate the management of invasive species and outreach to the public about the unique nature of the problem. Representatives of various natural resource agencies supported the taskforce and worked collaboratively to increase community awareness about invasive species in American Samoa. ASSIST met four times in 2003 and worked on several public education projects during 2004. One of the members, Eric Hanson, presented a paper on the Taskforce at the EMAPI-7 Conference in Florida during November 2004.

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 150 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.

c. Source of Federal Funds: Forest Health

d. Scope of Impact: State specific

<p>III. 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</p>

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.

IV. Goal 3: A HEALTHY, WELL-NOURISHED POPULATION

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 demonstration, 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 participating in the programs.

a. Outcomes

- In 2004, 3 Nutrition agents provided nutrition education lessons to 445 adults and 1516 youth. Upon completing the program, 280 adults completed the 12 basic lessons and received certificate of completion.
- 600 students, parents and teachers participated in gardening activities through school workshops, school vegetable gardening projects, and during the Ag in the Classroom projects.
- 445 additional people have participated in gardening programs including early childhood education children and teachers
- 4,200 people completed fruit and vegetable related food, nutrition, and food safety education programs.
- 2,500 people increased their knowledge of the importance of fruit and vegetable consumption, selection and preparation, and safe handling and storage
- 70% ate one or more fruits each day.
- 72% increased knowledge of the essentials of nutrition.
- 3,500 educational handouts on the Pacific Food Guide Pyramid, 1,000 recipe books in English and Samoan, "Team" Nutrition and "Five A Day" materials to 430 teachers at nutrition workshops in the classrooms.
- More new small-scale vegetable farmers are now providing fresh produce about once a week to the school lunch program.
- The Nutrition Coalition sponsored two Health Fairs.

c. Impacts

- Many food stamp clients continued to use 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.
- 20% of single mothers and their children no longer eat out at fast food places after participating in nutrition programs. They are now preparing nutritious meals for their families.
- 30% of food stamp participants with diabetes now practice selecting food from the five food groups and the food guide pyramid. Participants also bake or boil foods rather than frying.
- About 80 % 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, 70% of participants eat one or more fruits each day and 73% eat two or more vegetables a day.
- 25% of 1516 youth now eat a variety of foods.
- 72% of homemakers showed improvement or increased knowledge of the essentials of nutrition.
- 94% of homemakers improved food behavior practices: (i.e. plans meals, compares prices, budget.)
- 85% improved food safety practices: (i.e. thawing and storing foods properly)
- 25% of 1,516 youth increased knowledge of the essentials of human nutrition.
- 24% of 1,516 youth increased their ability to select low-cost, nutritious foods.
- 25% of 1,516 youth improved practices in food preparation and safety.

e. Financial and Human Resources

Please refer to appendix 1

A. KEY THEME: VEGETABLE AND FRUIT PRODUCTION INCLUDING PEST AND WEED CONTROL AND FRUIT TREE PROPAGATION (I)

- . **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:** In 2004, 260 FSP clients' and 45 UCF clients visited the greenhouse and requested trees for projects. Similarly, 15 schools and 400 students visited the greenhouse for science and geography studies during the celebration of arbor week in American Samoa. Each visitor who entered the greenhouse was given 2 or more tree seedlings to plant at his/her home as requested. A total of 3,500 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. Most schools have requested the Forestry Section to conduct a pruning demonstration for trees at their compounds. Forestry agents conducted 2 pruning demonstrations for the Tafuna Junior High School and Lupelele Elementary School.
- . **Source of Funding:** Smith Lever and Urban Forestry Funds
- . **Scope of Impact:** Territory Specific

B. KEY THEME: VEGETABLE AND FRUIT PRODUCTION INCLUDING PEST AND WEED CONTROL AND FRUIT TREE PROPAGATION (II)

- a. **Activity:** Approximately 20% of the trees in the greenhouse are fruit trees selected from 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 70 fruit trees of assorted kinds being issued to the FSP clients, and others who requested fruit trees for their backyards or in their plantations.
- b. **Impact:** About 46 program participants requested fruit trees from the greenhouse as a result of the EFNEP nutrition education program and 4-H gardening workshops. EFNEP agents prepared local fruit drinks using local fruits and serve the fruit drink to more 500 youth participants. Ninety percent of the participants indicated that they would make their own nutritious fruit drink at home using local fruits.
- c. **Source of Funding:** Smith Lever and Other Federal Funds
- d. **Scope of Impact:** Territory Specific

C. KEY THEME: VEGETABLE AND FRUIT PRODUCTION INCLUDING PEST AND WEED CONTROL AND FRUIT TREE PROPAGATION (III)

- b. **Activity:** In order to foster better eating habits among the American Samoan population, it is essential to encourage these habits in the young people. The Agriculture Extension Service conducted a special training on vegetable gardening for over 50 Early Childhood Education (E.C.E.) teachers. Workshop topics included information on seedbed preparation, plant propagation, irrigation, pest and disease control, fertilization, harvesting, and nutritional information on the various vegetable varieties that grow well in American Samoa.
- c. **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 the Extension office to integrate the gardens into their learning activities. The ECE administrators showcased the gardening program as one of their most successful activities in a special television program. The participants display the harvested produce from their gardens during the “Thanksgiving Day Harvest Festival” for their teachers, parents, public, and fellow students.
- d. **Source of Funding:** Smith-Lever
- e. **Scope of Activity:** State-specific

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

- b. **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, WIC participants, and food stamp clients. 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". A Food Safety video played on T.V. as a reminder for children and adults the importance of Hand Washing and proper storage of food.

. **Impact**

- Of the 1516 youths that participated in food safety education, 90% knew that unsafe food should be thrown away
- 77% reported that they wash between their fingers. 39% wash under their nails, and 93% use soap
- Evaluation findings from a workshop for food handlers indicated:
80% increased their understanding of how to help others prevent food-borne illness
- 80% increase awareness of personal and others' food safety practices.

There was an average of 500 Food Stamp clients who attended the FY2004 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 78% of participants were using the recipes to reduce the fat in their meals. About 65 % of the students have started eating more nutritious snacks and drinking more water instead of soda.

An estimated 2,300 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 2,650 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 500 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 45 schools whose students learned correct hand washing techniques along with "Five a Day" Nutrition lessons. The total number of participants is estimated at about 3,500 people for the reporting time. According to food recalls and verbal responses, 69% of them eat one or more fruits each day and 75% eat two or more vegetables each day.

. **Source of Funding:** Smith Lever

- **Scope of Impact:** Territory Specific

E. KEY THEME: HUMAN NUTRITION

- **Activity:** American Samoa is participating in the program “Healthy Lifestyle in the Pacific”, a PAC TRAC program aimed at preventing overweight and obesity on children. 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 workshop 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:** Data has been compiled on anemia, BMI, iron deficiency as defined by zinc protophyrin, glucose levels, and cholesterol levels. This data was 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. The EFNEP agents shared the data with more than 50 village mayors (pulenu’us) and 150 community participants during village workshops. The data was also shared to the community through the television evening news program and a newspaper article. Village mayors and community participants stated that the data is alarming and they are committed to spread the information to family members and take action themselves to reduce obesity. Programs are set in schools and villages for HLPI project to continue presentations in 2005. Community participants echoed the need to promote community awareness of obesity and overweight. Workshop participants supported the schools and village groups exercise programs as an alternative to reduce the numbers of children that are in the borderline of being obesity and overweight.
- **Source of Funding:** Hatch
- **Scope of Impact:** State Specific

V. 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.

Comment [MSOffice1]:
 Comment [MSOffice2]:

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.

a. Financial and Human Resources

Please refer to appendix 1

A. KEY THEME: PLANT GERmplASM

a. Activity: Accessioned 25 local and introduced taro and banana cultivars and three difficult to propagate native forest tree species into the germplasm collection. Introduced the tissue culture laboratory to students, farmers, and the general public through school tours, television, newspaper, and on-station seminars.

Deleted: new

Deleted: genetically diverse

Deleted: breeding lines has been stored in the Plant Tissue Culture laboratory. Initiated forestry plantlets.

b. Impact: Preserving native plants in vitro are a hedge against environmental disaster. For example, the loss of traditional taro varieties during the 1993 leaf blight epidemic could have been avoided. Informing American Samoans of the only tissue culture laboratory in the Territory is a first step in promoting its value and increasing its effectiveness.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

B. KEY THEME: PLANT HEALTH

a. Activity: Our Plant Clinic continues to serve the community. Attended annual meeting in Hawaii as Co-PI and participant/diagnostician in the Pacific Island Distance Diagnostics and Recommendation System (PIDDRS). Two peers reviewed plant disease articles published and three new pest and disease brochures, available on the internet. Updated website http://www2.ctahr.hawaii.edu/adap2/ascc_landgrant/technical_papers/htm

b. Impact: Access to PIDDRS increases the diagnostic capability of the Land Grant Plant Clinic, which services the island. Rapid identification of plant pests, diseases, and invasive species is the first step to containment. Sharing plant disease information between states and countries assists in local diagnostics and prevention.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

C. KEY THEME: TROPICAL AGRICULTURE

a. Activity: Accepted Cooperator status on vermiculture project with Ohio State University. At a one-week training in Columbus, OH, I will evaluate the use of vermicomposting in American Samoa.

b. Impact: There are very few management tactics for control of soilborne pests and diseases. Using worms to biodegrade plant, animal, and other wastes produces a nutrient-rich, disease suppressive compost for animal food or agriculture. It can also decrease input to the local landfill.

c. Source of Funding: Hatch

d. Scope of Impact: Regional

D. KEY THEME: INTEGRATED PEST MANAGEMENT (I)

a. Activity: American Samoa suffers from two serious mosquito-borne diseases: endemic filariasis and occasional outbreaks of dengue. The primary vectors for these diseases in the territory breed in water holding containers such as discarded tires, buckets, cans, etc. ASCC entomology conducted research in four villages to determine which such containers are important mosquito producers and which are not. It was determined that drums, tires, tin cans, discarded appliances, buckets and discarded plastic are important breeding sites. Other containers, while very abundant, produce almost zero adult mosquitoes. The research results will be used in educational programs promoting community based efforts to control dengue and filariasis vectors by eliminating critical breeding sites.

b. Impact: Eliminating all water-holding containers in villages would be virtually impossible. Community-level vector control efforts will be more efficient if they can ignore unproductive containers and focus on the container types that are producing almost all of the vector mosquitoes. American Samoa has joined the worldwide effort sponsored by the World Health Organization to eliminate filariasis as a public health problem. The backbone of the program is annual administration of antifilarial medicines to all eligible individuals in the territory. However the territory's high initial infection rate and lower than expected compliance may preclude success. Supplementing the medicines with effective vector control can help ensure that the program is able to eliminate this horrible disease from American Samoa. Another outbreak of dengue is virtually inevitable due to travel to the territory by individuals from dengue-endemic areas. Implementation of community-based vector control can cut short any future dengue outbreaks, potentially saving lives and reducing suffering from this painful disease.

c. Source of Funding: Smith-Lever Act

d. Scope of Impact: State specific

E. KEY THEME: INTEGRATED PEST MANAGEMENT (II)

- a. Activity:** Any mosquito control program requires some means to measure effect on adult mosquito populations. There is currently no safe, efficient means to measure populations of biting adults of the major dengue and filariasis vector in American Samoa. The ASCC entomology laboratory conducted tests of several new trap designs and chemical attractants as monitoring tools for vector mosquitoes in the territory. One trap design was identified, as the most effective and this trap will be used in assessing efficacy of upcoming community-based vector control programs. Efforts continue to identify even more efficient traps.
- b. Impact:** An effective trap provides us for the first time with a tool for monitoring vector populations. Having the means to efficiently monitor adult populations is an essential prerequisite to evaluating and improving control measures.
- c. Source of Funding:** Smith-Lever Act
- d. Scope of Impact:** State specific

F. KEY THEME: INTEGRATED PEST MANAGEMENT (III)

- a. Activity:** Imported 11 taro-breeding lines for the Taro Evaluation Program. Developed laboratory method for growing sporulating colonies of the taro leaf blight pathogen in culture. Developing inoculation protocol to test taro lines for leaf blight resistance and assess the pathogen for fitness.
- b. Impact:** Most leaf blight resistant taro growing in American Samoa today are varieties from Palau introduced in the late 1990s. This project will increase the genetic diversity among taro varieties, reducing the risk of all taros being destroyed by a modified strain of the leaf blight pathogen, or by a new disease. Farmers will grow and evaluate the new breeding lines, selecting the characteristics they want, including palatability. Findings on biology and ecology of the pathogen will add to our scarce knowledge of this organism.
- c. Source of Funding:** Hatch
- d. Scope of Impact:** State specific

G. KEY THEME: BIODIVERSITY

- a. Activity:** Documentation of the diversity of plant-parasitic organisms in American Samoa is an important responsibility of the Plant Pathology laboratory. Added to and maintained the herbarium collections of micro- and macrofungi, plant disease herbarium sheets, and preserved nematode species. Published articles on plant-parasitic nematodes of banana and plant-parasitic alga in the order Trentepohliales.
- b. Impact:** Knowing which plant parasites are present, or not present, in American Samoa can effect crop selection on a local and regional level. Quarantine decisions may also be influenced by this information. Species extinction worldwide continues at a high rate, especially in the tropics, and knowledge of what exists in American Samoa could be important in the future.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

H. KEY THEME: WATER QUALITY (I)

a. Activity: Monthly water samples were taken from the mouths of 43 permanent streams on Tutuila Island and tested for several water quality parameters.

b. Impact: Data from these three months was added to data taken since May 2003 in order to build up a database that will help determine which streams are impacted by human activity. This is a necessary first step towards developing indicators of biological integrity for American Samoa.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

I. KEY THEME: WATER QUALITY (II)

a. Activity: Kristel and Sharon attend joint meeting of Region IX Water Quality Group and US Environmental Protection Agency, Sacramento, CA.

b. Impact: This meeting (October 26 & 27) was to help shape areas of cooperation between the USDA and EPA on regional water quality issues. For instance, our Hatch research project, SAM-019, and our Cooperative Extension Service project are of great interest to ASEPA and the AS Coastal Management Program in helping them to fulfill their Wetland/Stream Restoration and Enhancement Plan.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

J. KEY THEME: WATER QUALITY (III)

a. Activity: Periphyton workshop conducted by Cathy Kilroy of the National Institute of Water & Atmospheric Research Limited, New Zealand.

b. Impact: This workshop (November 2 – 4) taught us how to identify freshwater algae in our streams. Periphyton, especially diatoms, are excellent indicators of stream health. As a consequence of this workshop, we are including periphyton as one of our bioindicators of stream health.

c. Source of Funding: Hatch

d. Scope of Impact: State specific

K. KEY THEME: WATER QUALITY (IV)

- a. Activity:** Walked Leafu (December 22) and Malota (December 28) Streams to collect water quality parameters at various elevations.
- b. Impact:** Ammonium-N and reactive phosphate were shown to vary little with change in elevation, while electrical conductivity decreased with elevation and cation concentrations, i.e., calcium, magnesium, potassium, and sodium, weakly correlated with conductivity. The other parameters were more-or-less randomly variable. This confirms that our choice of reactive phosphate as a guide in establishing levels of human impact is sound.
- c. Source of Funding:** Hatch
- d. Scope of Impact:** State specific

L. KEY THEME: WATER QUALITY (V)

- a. Activity:** Submitted AD-421 Progress Report to USDA CSREES CRIS.
- b. Impact:** By submitting this annual report to the Current Research Information System, the public has access to our research.
- c. Source of Funding:** Hatch Grant, Region 9 Water Quality Coordination Project
- d. Scope of Impact:** State specific

M. KEY THEME: WATER QUALITY (VI)

- . 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 Program is environmental 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 15 elementary schools and teachers of grades 6,7,8 continued with presentations and field visits at the watersheds in Nu'uuli and behind ASCC-CNR Land Grant Station.
- . Impact:** The 15 teachers and 250 students who attended four presentations and four field-visits received better understanding of the watershed concept and its application to their lives in the island. Each student and teachers took a tree home to plant in remembering of the field visits. Twenty percent of the students involved and interested, returned to research more information for their science fair projects.
- . Source of Funding:** Urban & Community Forestry
- . Scope of Impact:** State Specific

N. KEY THEME: NICHE MARKET

- a. Activity:** Testing of 3 varieties of spinach bred for production in the tropics (Dynasty, Orient and New Orient, all from Sakata Seed Company in Japan) began. The taste test was conducted a day after

harvesting where flavor, texture and color were evaluated using a likert scale of 1- poor to 4 - excellent. 43 people evaluated the varieties. Although the climate in American Samoa is hot and humid, the results of the taste test were encouraging with all varieties scoring 3 or better.

b. Impact: Identifying healthy, flavorful vegetable varieties adapted to tropical conditions will encourage farmers to enter this underdeveloped market. Local markets and consumers are chronically short of fresh vegetables, encouraging reliance on a traditional high-starch and high-fat diet.

c. Source of Funding: Smith-Lever

d. Scope of Impact: State specific

O. KEY THEME: AGRICULTURAL PROFITABILITY

a. Activity: Conducted a cost-of-production study for pak choy cabbage comparing tilled and terraced and no-tillage cultivation methods. Compared selling price for cabbage in the local market. Breakeven prices were \$.47 and \$.48 for tilled and terraced and no-till respectively. Farmers are making at least \$.10 per pound over the breakeven price.

b. Impact: By submitting this annual report to the Current Research Information System, the public has access to our research.

c. Source of Funding: Smith-Lever

d. Scope of Impact: State specific

P. KEY THEME: SOIL EROSION

a. Activity: Soil erosion data was collected in a spinach variety trial, which compared no-till, tilled, and tilled and terraced soil management practices. Although not significantly different, the analysis shows that the tilled and terraced plots had less relative soil erosion than the other two cultivation practices. This supports the two other trials conducted comparing no-till and tilled and terraced treatments where tilled and terraced had less relative soil loss.

b. Impact: Results were presented in a seminar in which 15 members of NRCS, Agriculture Extension, Land Grant Research, EPA and other government agencies participated. With population pressure forcing farming onto steep hillsides, the need for alternative planting practices increases in importance.

c. Source of Funding: Smith-Lever

d. Scope of Impact: State specific

Q. KEY THEME: TROPICAL SILVICULTURE

b. 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.

c. **Source of Funding:** McIntire-Stennis

d. **Scope of Impact:** State Specific

R. KEY THEME: HEALTHY FORESTS FOR THE ENVIRONMENT (I)

a. **Activity:** The severity of Cyclone Heta in early 2004 had caused tremendous destruction on agricultural crops, trees and the forests in the island of Tutuila. Approximately 65% of the rainforests were damaged in pockets at mountain ridges and slopes on ground level depending on the wind direction and wind velocity. In addition, about 50% of homes and other belongings were destroyed. The FEMA was helping out with monetary assistance for housing reconstruction, and tools for the clean up of the trees and debris throughout the entire island. The forestry program had borrowed 4 chainsaws from FEMA to assist us with our general clean up of the client's properties and homes. This activity took eight weeks to complete clearing and clean up. The 4 chainsaws were returned to the ASG Procurement Officer who was responsible for FEMA equipments and tools.

. **Impact:** The Forestry Program offered an immediate response after the cyclone Heta to all its clients in cleaning and clearing of trees been blown down as well as re-staking of trees and crops that had the potential to survive. A seed collection of trees that were available at the time of the clean up was made and the seeds were sent to the greenhouse for seed processing awaiting propagation. There were 250 forestry clients provided with assistance to their properties and plantations. These forestry clients had been issued with trees to plant at their field lots, in replacement of the fallen and the destructive trees. More seeds were collected for rearing at the greenhouse to meet the demand for planting materials.

. **Source of funding:** UCF/FSP

. **Scope of Impact:** State Specific

R. KEY THEME: HEALTHY FORESTS FOR THE ENVIRONMENT (II)

- . **Activity:** The Arbor Week Celebration 2003 was held in November 17-21 and the theme was “Educate, Plant, Maintain, and Preserve” the forests in American Samoa. This theme was to portray the highest respect, for protection and conservation of the forests, trees, and vegetation of Islands. The Arbor Week celebration is an annual event spearheaded by Forestry Section and its associated allies from other agencies of the government. The purpose of Arbor celebration is to educate students in schools and people in the community about the importance of maintaining our forests as a healthy home for wildlife and people. Tree presentations and tree planting in schools grounds and villages were the main activities of the week. Fifteen (15) schools were invited to participate and involve with arbor week activities.
- . **Impact:** Out of 15 elementary schools invited, 300 students and 30 teachers, 150 guests, and 20 parents attended our closing ceremony on the last day of the festivity. The 15 schools displayed art works, drawings, paintings, and poetries. The 15 schools also presented skits, songs and plays (faleaitu) based on the theme of the Arbor Week 2003. The schools were also given prizes and certificates for participation as well as the songs, skits, displays in addition to the overall maintenance of their tree projects at school sites. At the end of the ceremony each student was given a tree to plant at home in recognizing the arbor week. About 500 trees were issued to participants on the final day.
- . **Source of funding:** UCF/FSP
- . **Scope of Impact:** State Specific

R. KEY THEME: HEALTHY FORESTS FOR THE ENVIRONMENT (III)

- s. **Activity:** The forestry greenhouse at CNR Land Grant Station becomes the focal point of site visits by schools, clients, and the public in American Samoa. The students and teachers are interested in studying and learning various aspects of greenhouse technology, management as well plant propagation and multiplication. Similarly, the forest stewardship clients and agricultural farmers pay frequent visits from time to time to obtain information on planting materials or technical assistance to help improve their farm production. The greenhouse project becomes a site attraction for clientele to find what new innovation in plant species, for quick benefits and for land management practices. Having realized the great interest among our clients the forestry program planned to de-centralize the greenhouse idea into various parts of the islands.
- s. **Impact:** In June 2004 the forestry program constructed a greenhouse at Malo Moafanu’s land at the village of Aoa. Malo who is our forestry stewardship clients operates the greenhouse, and Malo is assisting the clients and schools on the eastern side of Tutuila for greenhouse visits and providing planting materials. The previous arbor week held in November 17-21, 2004, Malo hosted 25 ECE students and 12 parents at the greenhouse site for presentation and observation of the project. Each student and parent attended the visit was given pot plants and food crops to take home form Malo’s project.

In July 2004 the forestry program installed a greenhouse in Manu’a High School (MHS) in Manu’a Islands. Since Manu’a Islands is 90 miles away from the main island of Tutuila where the forestry program is located, it is important to move the program to the under-served population. The purpose of the greenhouse establishment is to provide forestry/agriculture education for the students of MHS and elementary schools, and to serve the community needs. The construction of the greenhouse is completed and it is ready to provide its intended service of assisting the schools in education and working with the community. The Manu’a people are looking forward to visit the greenhouse for plant materials and to

seek advices for forestry and agricultural developments. The same with teachers and students to use the greenhouse for field class and to experiment science projects in mind.

VI. Goal 5: ENHANCED ECONOMIC OPPORTUNITY AND QUALITY OF LIFE FOR AMERICANS
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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 2004, 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, 2003 and 2004. These included cultural arts and crafts, nature art and *siapo* (tapa) making.
3. 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.
4. To increase economic opportunities for homemakers, farmers, and workers, Entrepreneurship and Home-Based Business courses were offered.
4. 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.

b. Outcomes

- a. 70% of the parenting participants actually adopted one or more principles, behaviors, or practices within six months after completing one or more programs.
- b. Over 700 youth, teachers and parents participated in Culture Awareness programs.
- c. 60% plan to use the skills learned in keeping their culture strong.
- d. Seven F4HN Agents spent about 100 hours each with over 800 youth in the elementary schools completing the reading literacy programs.
- e. 15 parents took the 3 credit hour parenting course taught by the Family and Consumer Sciences program. All 15 said they used at least 10 of the principles, behaviors, or practices as they worked with their children.

- f. Four elementary schools and 1 High School having after hour sewing program with the enrollment of 60 students.
 - . 225 participants enrolled in the sewing program
 - . Each participant student learned how to make their own clothes using the tape measure, patterns, sewing machines and other equipment.

a. **Impacts**

- 85% 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.
- Ten teachers have added more hands-on experiences in their Samoan History classes.
- Collaboration among government agencies and non-government organizations sustained CYFAR program activities.
- 88% of the childcare providers have requested additional training from the F4HN Program Manager.
- All 15 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, and help their family members in decorating using the skills they had learned from the program.
- 50% of the sewing program participants sew their own and their children's clothes.
- Ten mothers bought their own sewing machines since they had learned basic sewing from the program.
- 5 ladies started their own sewing and elei (fabric) small businesses.
- 16 homemakers reported with the skills and knowledge taught by FCS agent, they are making money from their small business selling elei-printing fabrics.

a. **Financial and Human Resources**

Please refer to appendix 1

A. 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 were 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 800 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 800 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.

During fiscal year 2004, 2575 youth enrolled in 4-H Youth programs. More than 1000 4-H members showcased their projects during the Annual Summer program. More than 80% of 4-H members acquired knowledge in one or more program areas and developed at least one-life skills.

A 4-H member commented, “the summer workshop gave him a lot of hands on learning experience, especially learning the basic sewing skills, now he learns how to sew a short for himself and also for his siblings.”

A teacher commented, she really appreciated the help from the 4-H agents, especially the workshops provided during X-Mas with making crafts and X-Mas cards.

. **Source of Funding:** Smith Lever and Other Federal Funds

. **Scope of Impact:** Territory Specific

B. KEY THEME: CHILDCARE & YOUTH DEVELOPMENT

. **Activity:** A six month training program for 45 centers is a continuing effort of providing Day Care providers on the ages and stages of child development, nutrition and food safety, running business, developing curriculum, organizing facility and setting up learning centers, arts and crafts, behavior management, power of play and storytelling.

Participants representing all of the 45 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. 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:** Forty-two childcare providers were certified during a graduation ceremony, in FY2004. It is planned to certify many more after the completion of the new MOU activities. Thirty-eight Day Care Providers completed twelve basic nutrition and food safety lessons and received certificates from F4-HN program.

The 42 childcare providers reported that they learned how to discipline the children without hitting them. They applied so many skills they learned to their day care centers, and decorating a more organized learning center for the children. Seventy Percent of the childcare providers have requested additional training.

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 15 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

C. **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 35 Mental Health clients during FY2004. 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:** Eight mental health clients showed improvements on hands on learning activities on making crafts, each of them sold picture frames and fans to staff members.

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.

- . **Source of Funding:** Smith Lever and Other Federal Funds

. **Scope of Impact:** Territory Specific

VII. STAKEHOLDER INPUT PROCESS

The following is a summary of the stakeholder inputs:

A. Agriculture Extension Section (AES)

The Agriculture Extension Section's personnel collected stakeholders' inputs from 640 clients through surveys during workshops, farm visitations, focus group sessions, meetings and visits to the AES office. Of the 640 stakeholders, 95% are Samoan, 3% are Tongans, and 2% represent the Asian farmers. Sixty youth camp participants represent the non-traditional clients. The surveys results indicated the following program priorities for AES to address:

- Need to acquire farm loans for farmers to relocate piggeries and expand agricultural production (more information on lending institutions to enable farmers to secure farm loans)
- Need to acquire more grants for farmers
- Need to develop agricultural value-added products
- Need for government to subsidize agricultural supplies such as pesticides, pig feeds and fertilizers especially
- Need for government to develop access roads to farms
- Need to conduct marketing and financial management trainings
- Need more information on organic crop production
- Need assistance in identifying and exploiting new marketing outlets
- Need more workshops on production and management of traditional and vegetable crops
- Need reliable suppliers of seeds and other farm materials and capital
- Need to conduct workshops on grading, packaging, and storing of vegetables for the school lunch program
- Need more swine management information
- Need to increase program exposure on the media for community awareness
- Need to improve working relationship with the Department of Agriculture in program coordination
- Need more workshops on marketing to develop local produce to better marketable and competitive levels

Aligning with the results of the stakeholders' input, AES hired a new Risk Management Extension Agent. The Risk Management Agent is now conducting workshops covering topics such as record keeping, farm management, agribusiness plan, marketing, and financial management. Moreover, a new Extension Agent who was recently hired is now addressing questions relating to organic farming, and crop production, distribution, and marketing. AES personnel continued to participate on the biweekly television program, news spots, community presentations, and visitations to inform the community about the functions and services provided by ASCC-CNR. The ASCC President and the ASCC-CNR Director met with the Director of the local Department of Agriculture to work on joint projects and to improve agricultural programming for the people of American Samoa. The AES personnel continued to collaborate and partner with both government agencies and non-government organizations in addressing other issues indicated in the stakeholders' inputs.

B. Forestry Extension Section (FES)

The Forestry Extension Section (FES) personnel solicited stakeholders' inputs from 1,700 participants through survey questionnaires during forestry task force and council meetings, schools presentations, village meetings, forestry inventory, teachers' workshops, conferences, arbor week celebration, *Le Tausagi*

(environmental group) summer camps, greenhouse tours, Parent-Teacher-Association meetings, television programs, school visits, science fairs, field days, greenhouse projects, student internship, and individual consultations. Of the 1700 stakeholders, 90% are Samoan and 10% represent other ethnic groups. One hundred (100) participants in the stakeholders' input process are physically and mentally challenged individuals. Seven hundred (700) stakeholders are non-traditional clients who randomly participated in the programs because of interest and accessibility. The survey outcomes indicated the following priorities for FES to address:

- Need to organize more greenhouse tours to meet the demand from schools
- Need to provide more information on forestry and environmental science
- Request the establishment of greenhouses in schools and client's sites
- Need more fruit tree planting materials
- Need to implement coastal stabilization projects
- Need to make available more native medicinal plants propagating materials
- Need to make available more shade and beautification trees for landscaping
- Need to make available more nitrogen fixing trees to improve soil fertility and control soil erosion
- Increase propagation and multiplication of all native tree species
- Need to make available more *ava* (*Piper methysticum*) planting materials
- Need to promote agroforestry practices
- Request FES personnel to serve as resource people on topics such as forestry, wet lands, water sheds, coastal protection, agroforestry, agriculture, and natural resource management

In response to the stakeholders' inputs, the FES personnel extended greenhouse tour hours to accommodate the high demand from local schools. More personnel are involved in providing information on forestry and environmental science during the tours and school presentations. Moreover, the FES personnel built two greenhouses, one at Manu'a High School, one at Malo Paleso'o site in Aoa. The third greenhouse is at the custody of the Forestry Program waiting for the Department of Education's approval for the appropriate construction site. The FES has allocated more time and personnel on collecting seeds and planting materials plus the actual plant propagation to meet the demand from clients. The forestry program in partnership with villages has developed 5 coastal stabilization projects to provide protection from strong winds and heavy salt spray from the ocean. The FES has maintained the medicinal garden plot and made specimens available to local *taulasea* (Samoan healers) for preparing traditional medicines.

Furthermore, the FES program established two agro-forestry and eight wetland demonstration sites for clients' observation and field visits. The FES also developed a work-study project where 12 students and two teachers from two local high schools (Nu'uuli Poly Tech High School and Kananafou High School) gained work experience and acquired knowledge about forestry and related sciences. In collaboration and partnership with government agencies, villages, churches, schools, sport clubs, environmental groups and interested individuals, the FES program is prepared to address other issues indicated in the stakeholders' inputs. The forestry program personnel continued to coordinate the biweekly television show to inform the community about the programs and services provided by FES.

C. Families, 4-H & Nutrition Section (F4HNS)

The F4HN Section personnel collected stakeholders' inputs from 1300 clients through the surveys and focus group sessions during workshops, presentations, volunteers leaders' meetings, church and village group sessions, Food Stamps training and exercise sessions, field trips and group visits to the F4HN offices. Of the 1300 clients who participated in the stakeholder input sessions, 800 are adults and 500 are youth participants. Moreover, all 1300 stakeholders are of Samoan ancestry and also represent the traditional target audience. The F4HN Section personnel strived to include more clients and other community members who never participated in this effort before. The results of the surveys and focused group sessions provided the following program priorities for F4HN Section to address:

- Need to develop and implement nutrition and exercise programs for children and teachers to overcome obesity
- Need to expand the nutrition education program in the school system to include health activities or health fairs
- Need to conduct more workshops for teachers on healthy lifestyle programs
- Need to develop and extend financial and parenting programs to village clients
- Need to offer more trainings for Day Care Providers
- Need to revive 4-H youth development programs in the villages
- Need to continue “Sewing for kids” after school program.
- Request after hour Sewing programs for adults
- Request the availability of more sewing machines for adult programs
- Need to conduct workshops on flower arrangements, printing, and other related topics
- Need to strengthen the working relationship with other government agencies that offer similar programs
- Request F4-HN program to do more programs in the Manu’a islands.
- Need to improve program visibility through media campaign
- Need to revive the radio program on “Taumafa Samoa” or Samoan Food
- Need to develop and implement after-school enrichment programs for youth
- Need to established a Youth Center at ASCC-CNR station

In responding to some of the stakeholders’ inputs, the F4HN program agents are now conducting more basic “Sewing for Kids” programs in schools and villages targeting youth 10-14 years of age. Participants of the program will not only learn how to sew for themselves but will also develop sewing entrepreneur skills. Also, the F4HN program secured two new sewing machines for the sewing program.

The F4HN program is currently collaborating with the University of Hawaii on the Healthy Living in Pacific Islands (HLPI) project to address obesity, hypertension, diabetes, heart disease, stroke and other lifestyle diseases. The F4HN program will continue to collaborate with other agencies and non-government organizations to improve clientele recruitment and services to the people of American Samoa. The F4HN agents continued to participate in the biweekly television program to inform the community about the various program offerings. The F4HN Section continues to adjust its programs to meet the community needs as identified in stakeholders’ inputs reports.

VIII. 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

VIX. PROGRAM REVIEW PROCESS

No changes have been made in the programs review process. The guidelines as outlined in the 2005-2006 Plan of Work Update are being followed.

IX. 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.