2013 American Samoa Community College Combined Research and Extension Plan of Work

Status: Accepted

Date Accepted: 07/12/2012

I. Plan Overview

1. Brief Summary about Plan Of Work

American Samoa Community College (ASCC) Division of Community and Natural Resources (CNR) submits this joint Extension and Research Plan of Work Update for the period 2013-2017.

Consistent with NIFA priorities, CNR's "Planned Programs" are: 1) Global Food Security and Hunger, 2) Food Safety, 3) Families, Youth and Communities, 4) Climate Change, 5) Childhood Obesity, 6) Sustainable Energy and 7) Human Health & Well-being.

These are key priorities and new initiatives planned for 2013:

From "Small Farms" to "Food Security"

Most of the work planned in previous years in what was the "Small Farms" program remains under "Food Security." American Samoa continues to face increasing population growth, rising food prices, unstable economic conditions, climate change, high shipping costs, high fuel costs, and a heavy reliance on imported and processed foods. CNR must get a stronger understanding of the macro-economic, political, and legal forces behind food imports in conjunction with developing self-reliance in agricultural production on-island. Much work has to be done in Food Policy. Of particular promise in 2013, in collaboration with the Government of Samoa, is training for CNR staff on how to breeding taro for disease resistance.

Addressing Childhood Obesity and NCD's

2013 is important for two promising programs: First is the completion of the "American Samoa Nutrition, Exercise, Community Research Health & Wellness Center (otherwise known as the "Wellness Center"). The completion of the Wellness Center provides physical space for nutrition and exercise programs, EFNEP, and new areas such as health communications, food policy, stress reduction, and traditional healing. The urgent need to come up with community programs to help prevent non-communicable chronic diseases will be done out of the Wellness center.

Second is the USDA grant, now in its second year, awarded to the Pacific jurisdictions including American Samoa to address childhood obesity- the Children's Healthy Living Program for Remote Underserved Minority Populations of the Pacific Region (CHIL). Evidence-based interventions begin in 2012-2013.

Food Safety

Many of the food safety outputs and outcomes from previous POW's remain.

However, CNR has begun research in American Samoa's drinking water and preliminary data is available on the quality of the drinking water, in particular electrical conductivity.

American Samoa continues to feel the agricultural damage of the 2009 tsunami and the 2010 Hurricane Rene. Preparation for food emergencies became an important issue as well as food safety in the event of food-borne illnesses. CNR continues its collaboration with the National Disaster Emergency Preparedness Training Center (NDEPTC). ASCC CNR is presently reviewing an MOU with NDEPTC to set up a long-term training center at the land grant station.

CNR was visited in 2012 by representatives from USDA Region IX who informed staff of updates to the Food Safety Modernization Act and provided copies of USDA Food Codes. Training is planned in understanding how the Food Codes can be adapted to suite American Samoa's food safety needs and upgrade its standards.

Families, Youth & Communities

The 4H Program in central here. In 2012, CNR held its first 4H Youth Camp with "Operation: Military Kids". This made it clear that CNR's 4H program needed to upgrade itself. CNR will change it organization chart and hire a full-time 4H Program Manager. It will engage in better planning and seek more training for staff.

In 2013, CNR will be establishing a closer relationship with the Small Business Development Center on campus to provide training in entrepreneurial skills.

Human Health & Well-Being:

One particularly important research project under this planned program is to study "Mosquito host preferences in American Samoa villages." Dengue and Filariasis are diseases still present in American Samoa.

Understanding the relative importance of different mosquito species as vectors of human and animal diseases is critical to targeting the mosquito control efforts that aim to prevent those diseases. This information will improve our understanding of the relative importance of the different local mosquito species as vectors of human and animal diseases, and recommended control strategies will be adapted accordingly.

Climate Change

CNR has little to no expertise in this area nor does CNR have a comprehensive and systematic plan for addressing climate change.

In September 2012, CNR will be participating in a conference sponsored by ADAP (Agriculture Development in the American Pacific). This forum will discuss climate change needs in the American Pacific.

Further, CNR will review the publication "Achieving food security in the face of climate change" which is the "Final report from the Commission on Sustainable Agriculture and Climate Change." One key issue is how the "fragmentation of issues across multiple policy platforms and narrowly bounded institutional mandates ... discourages innovative leadership and inhibits development of policy actions informed by the full complexity of food security, sustainable agriculture and climate change challenges." CNR will look at how to adapt "Recommendation 1: Integrate food security and sustainable agriculture into global and national policies."

CNR will seek consultation for this effort.

Sustainable Energy

Like Climate Change, CNR does not have expertise in this area. Yet, American Samoa

is 100% dependent on imported fuels for motorized vehicles and electric power.

CNR will need to seek consultation on how to gather available and baseline data on energy sustainability in American Samoa and consult with various stakeholders.

Meanwhile, CNR continues with outputs and outcomes from previous years in energy conseration and education.

Other Key Research Projects in FY 2013

One compelling research project planned by the new Plant Pathologist is on two very important crops in American Samoa: taro and banana.

a) He will study the genetic diversity among isolates of Phytophthora colocasiae, the causal agent of taro leaf blight (TLB). b) He will study the genetic diversity among isolates of Mycosphaerella fijiensis, the causal agent of black leaf streak (BLS).

CNR's Horticulturalist will look at**"**utilizing locally sourced organic materials as components of soilless growing media to reduce reliance on imported peat."

Recruitment Efforts

ASCC CNR's successful recruitment of key professional staff makes for a promising outlook for FY 2013. In the area of food security, CNR's Horticulturalist, a former surgeon, finished his Master's degree in Horticulture December 2011 and is now back at work full-time. CNR has hired an Animal Scientist who will start in August 2012. CNR hired an outstanding Plant Pathologist out of the University of Chicago who started early 2012.

To address childhood obesity, a Community Nutritionist from off-island is expected to start in August 2012. Another staff person has been accepted into a Master's program to study Nutrition at the University of Hawaii and will do her research project on-island. CNR is close to completing negotiations for a Health Communications Researcher and Exercise Physiologist.

In 2012, CNR hired a full-time Food Policy Analyst.

The CNR Forestry Researcher will start in August 2012.

Lastly, CNR is looking at contracting short-term consultants to help with Climate Change and Sustainable Energy.

Manu'a Islands

This deserves special mention because these outer islands remain underserved and CNR must stay committed to the people of these islands in spite of travel and shipping difficulties.

These are the key priority issues and initiatives for the American Samoa 2013-2017 Plan of Work.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2013	21.5	0.0	14.2	0.0
2014	21.5	0.0	14.2	0.0
2015	21.5	0.0	14.2	0.0
2016	21.5	0.0	14.2	0.0
2017	22.5	0.0	17.2	0.0

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Combined External and Internal University External Non-University Panel

2. Brief Explanation

Research and Extension initiatives are client-driven, that is, based upon the latest stakeholder input survey. Owing to our limited number of staff, which serves a population of 65,000, each researcher and Extension agent tries to match his/her knowledge skills and expertise to a high priority client concern that also would meet federal grant requirements.

The proposal is then given to the Research or the Extension Coordinator, who distributes it to knowledgeable professionals both within and outside of the institution. If an off-island expert can also be found who is willing to review the proposal, gratis, this source of review is also sought.

The Director will be included in the final review of the proposals.

III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Not required to report

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

Not required to report

3. How will the planned programs describe the expected outcomes and impacts?
Not required to report

4. How will the planned programs result in improved program effectiveness and/or
Not required to report

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey of selected individuals from the general public

Brief explanation.

Where ever and when our stake holders gather for programs, they will be asked to evaluate and give inputs regarding followup workshops and direction . Stakeholders' participation will be encouraged through: media announcements (television stations, newspapers, radio stations); targeted invitations (letters, phone calls, personal visits) to traditional and nontraditional stakeholder groups and individuals; and surveys of the general public and selected groups and individuals..

2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Use Internal Focus Groups
- Use External Focus Groups
- Needs Assessments
- Use Surveys
- Other (formative and summative evaluations of workshops)

Brief explanation.

CNR will continue to use inputs and recommendations from advisory committees, external and internal focus groups, surveys, workshops evaluations, and needs assessments to identify stakeholders' groups and individuals. Moreover, recommendations from programs' staff and administrators will also be utilized.

All workshops conducted by CNR extension will be evaluated for information regarding What next? and Where do we go from here? Focus groups are being planned for our

underserved clients in the Manu'a Islands. All farm visits conducted by CNR Agriculture Service will be documented and will contain sections where farmers will identify their problem areas.This information will be used to direct resources in research. The CNR advisory group's responsibility is to prioritize and bring focus to the stakeholder concerns.

2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Survey of the general public
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Focus group sessions)

Brief explanation.

ASCC-CNR staff will continue to collect stakeholder inputs from clients through focus group sessions and survey questionnaires during workshops (schools, villages, community groups, government agencies, churches, CNR, other sites), demonstrations, presentations, pesticides courses, public and council meetings, exercise and physical activity sessions, field trips, summer camps and institutes, tours, school visits, science fairs, field days, career days, farm and family visitations, clients' visitations to the office, and individual consultations.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

Inputs from stake holders will be used to direct and improve programs in both extension and research, with the CNR advisory group being the means to prioritze CNR resources. Once the priorities have been determined, the information will be forwarded to CNR administration and program managers to make changes in the budgets and programming. More specifically, inputs will be considered in recruiting and hiring of new staff; acquisition of new equipments and materials and supplies; improvement of existing programs and facilities; develpment and implementation of new programs; and construction of new facilities to address stakeholders inputs and recommendations.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Families, Youth and Communities

2. Brief summary about Planned Program

For 2013, one of the organizational priorties of 4H is raise its position in the organizational chart. There are presently 3 boxes or section in Extension. 4H would make it four alongside Families & Nutrition, Forestry, and Agriculture Extension.

The 4-H Youth Program will continue to address the youth-at-risk issues with programs in 4-H village clubs and church youth organizations in the community, clubs in the schools and summer youth programs. Using and modifying the educational materials developed for US mainland youth, these lessons will be brought to the territorial youth on issues including but not limited to cigarette, alcohol, and drug use, teen pregnancy, suicide and high school dropout. Other topics will include parenting, entrepreneurship, sewing, arts and crafts, vegetable gardening, marketing, and Samoan culture and language projects. These lessons will be taught in workshops, in group discussions, one-to-one interventions, demonstrations, 4-H fairs, camps and summer programs and will reach youth and adults including parents, village and church women, farmers along with business people. TV and radio stations, newsletters and brochures will help to spread the word. These direct and indirect methods will be in both English and Samoan.

It is hoped that with youth involvement in these programs, they will acquire knowledge and develop social, leadership, entrepreneurial and job readiness skills, obtain knowledge to start their own home-based businesses to become self-reliant, productive and contributing members of society.

To address the youth at risk challenges and to align with NIFA Organizational Chart, the 4-H Youth Program will be a separate program from the Family and Consumer Science and Nutrition Program. Additionally, a 4-H Program Manager, Specialists, and additional 4-H agents need to be hired. Finding local qualified staff has been difficult. How great the outcomes and impacts will be is dependent on the ability to hire and retain qualified personnel. Program funds need to be made available for local staff to continue their studies to obtain Bachelors, Masters and PhD degrees in counseling, youth and human development, sociology and related fields.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	40%		0%	
802	Human Development and Family Well-Being	10%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%		0%	
806	Youth Development	40%		0%	
	Total	100%		0%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Resource management (poverty), parenting, culture, and youth at risk issues are major areas of concern in American Samoa. More than 58.3% of American Samoa's families are considered poor and below the U.S. poverty level (American Samoa 2000 Census). Additionally, unemployment is about 18%; cost of living is high and more than 50% of average spending goes to food and housing. With per capita income at $4357 (Population Census 2000), people need to manage family resources wisely and take advantage of economic opportunities to maintain and increase their quality of life.

Parent and child relationship is a critical issue in American Samoa. Lack of supervision for children and youth due to working or absent parents is a major concern. There is a need to help parents become better parents and for the children to remain respectful of their parents. As American Samoa becomes 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. The Samoan youth are expected to serve their elders with respect and obedience with no back-talk. However, youth who grew up in Hawaii and the mainland United States have difficulties in accommodating their American lifestyles and expectations of parents and other family members. Attitudes toward the Samoan culture or fa'aSamoa are changing and that people are losing their perspective and respect for high moral standards and ethical conduct. Therefore, learning opportunities should be provided to preserve the Samoan culture, language, and family values.

According the Population Census 2000 the median age was 21. The American Samoa 2007 Youth Risk Behavior Survey of 3,625 high school students in six public high schools reported: 22.2% of the students carried a weapon, 56.8% tried cigarette smoking, 46.6% drank alcohol, 17.6% used marijuana, 32.0% had sexual intercourse, and 19.6% attempted suicide. Juvenile crime is increasing. Addressing the youth at risk issues will help the youth of American Samoa become productive, self-reliant, and contributing members of the community.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Funding and staffing will continue.
Community coalitions and agency collaborations and partnerships will continue.
Clients will learn and change behaviors, attitudes, practices, and lifestyles.
Clients will take advantage of economic and educational opportunities.
Youth at risk issues can be prevented and treated.
Priorities will not change.
Volunteers will assist with program implementation
Program delivery will be both in English and Samoan languages
Materials will need to be translated into Samoan

2. Ultimate goal(s) of this Program

To become self-reliant, productive, and contributing members of the society
To acquire knowledge and develop entrepreneurial and job readiness skills
To become employable in the private and public sectors
To start home based and small businesses
To generate supplemental revenues
To improve parent and children relationship
To develop a sense of pride and appreciation of the Samoan culture and language
To makesuccessful transition from youth at risk behaviors to clean, healthy, and esteemed lifestyles

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	3.0	0.0	3.0	0.0
2014	3.0	0.0	3.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2015	3.0	0.0	3.0	0.0
2016	3.0	0.0	3.0	0.0
2017	4.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Entrepreneurial and job readiness workshops.
Apprenticeship and career shadowing programs.
Sewing and arts and crafts workshops and demonstrations.
Vegetable gardening and marketing projects.
Parenting and character counts workshops.
Samoan cultural and language workshops and demonstrations
4-H fairs, camps, and summer programs.
Youth at risk issues workshops, conferences, forums, and seminars.
Public awareness media (radio, TV, newspaper) programs.
Development, translation, and distribution of posters, brochures, and other educational materials.
Communicate results via accomplishment reports, brochures, presentations, seminars, TV, and individual
contacts with other agencies.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Competitions) ● Other 2 (Summer programs)	● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● Other 1 (Brochures/Handouts) ● Other 2 (videos)

3. Description of targeted audience

All residents of American Samoa are the target audience including parents, youth, village and church women and youth organization members, homemakers, farmers, students, interested individuals, children and youth program participants.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of sewing workshops and demonstrations
- Number of Samoan cultural workshops and demonstrations
- Number of 4-H fairs, camps and summer programs
- Number of youth-at-risk issues workshops, conferences, forums and seminars
- Number of new 4-H Youth village clubs
- Number of new 4-H Youth School clubs/enrichment programs.
- Number of new 4-H leaders and volunteers.

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of program participants that acquired knowledge and developed skills in resources management (poverty), parenting, Samoan culture, and youth at risk issues
2	Number of participants starting home-based and small businesses
3	Number of program participants that improved parent and children relationship

Outcome # 1

1. Outcome Target

Number of program participants that acquired knowledge and developed skills in resources management (poverty), parenting, Samoan culture, and youth at risk issues

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of participants starting home-based and small businesses

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of program participants that improved parent and children relationship

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Staff Recruitment, Culture)

Description

Natural disasters: hurricanes, cyclones, earthquakes, tsunamis, flooding and others
Changes in funding (loss of formula funds)
Changes in staffing (loss of staff)
Changes in institutional priorities and access to facilities
Changes in collaborators' abilities or willingness to continue as partners
Clients' family and church obligations
Health
Politics
Cultural Acceptance
Loss of staff reduced program capacity
Sensitive topics (premarital sex, teen pregnancy, sexually transmitted diseases)
Delay in procurement processes for materials and supplies

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Pre/Post tests
Summative and formative evaluations
Accomplishment reports
Enrollment forms
Visitation reports
Focus group sessions
Annual surveys by ASCC CNR CES
Qualitative information gathered from home and village visits and interviews
Business records and licenses
Employment records

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

For 2013, CNR will review the publication "Achieving food security in the face of climate change. Final report from the Commission on Sustainable Agriculture and Climate Change (Mar 2012)."

The key Recommendation is "to Integrate food security and sustainable agriculture into global and national policies." The problem is "fragmentation of issues across multiple policy platforms and narrowly bounded institutional mandates encourages unilateral, single-sector responses, discourages innovative leadership and inhibits development of policy actions informed by the full complexity of food security, sustainable agriculture and climate change challenges."

Freshwater quality and quantity, plus the threat of sea level rise on coastal areas, will be the primary concerns of our Planned Program. More frequent and intense rainfall will result in higher fecal coliform and E. coli bacterial loads in our streams from both natural and anthropogenic sources, plus the potential for increased soil erosion. Fecal microorganisms, along with pathogens such as leptospirochetes and viruses, will negatively impact the health of people, domestic animals, and wildlife living in and along streams, as well as those who have prolonged and extensive contact with streams, e.g., tilapia farmers and fishermen. Moreover, flooding and storm surges pose a danger to life and property and risk contamination of groundwater, the source of the Territory's drinking water. We will continue to monitor stream water and near shore waters for land-based sources of pollution from runoff. We will continue to be strong advocates for promoting watershed stewardship, especially among policy makers and schoolchildren. And we will continue to work closely with ASEPA and other local and federal agencies in protecting our natural resources from the impacts expected from global warming.

Forests are essential for addressing the impacts of climate change. American Samoa's forests has the ability to slow down water flow and absorb nutrients thus preventing flooding, soil erosion, and contamination of coral reefs, streams, aquifers, and wetlands. Moreover, forests replenish important fresh water aquifers, protect reefs, shelter and protect shorelines and coastal communities from hurricanes, storm surges, tsunamis and floods. American Samoa's traditional agricultural production comes from agroforestry systems where crops such as cocoa, coconut, breadfruit, various fruit trees, and other trees are interplant with taro, yams, bananas, giant taro, and other crops. CNR Forestry program will conduct conservation education, urban community forestry, forest stewardship, and forest health protection workshops, demonstrations, and presentations to schools, villages, organizations, clients, farmers, and the community at large. Seed collection, plant propagation, and tree distribution for community programs will be continued.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	25%		100%	
123	Management and Sustainability of Forest Resources	15%		0%	
124	Urban Forestry	25%		0%	
125	Agroforestry	25%		0%	
132	Weather and Climate	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The 141 perennial streams on Tutuila Island are contaminated with coliform bacteria and E. coli from multiple sources: leaking septic tanks, piggeries, feral pigs, and pets. Pig, rat, and dog urine are also sources of the leptospirochete responsible for the potentially fatal disease of leptospirosis. We will complement EPA's ongoing project to monitor stream water levels for coliform and E. coli bacteria. Furthermore, we will monitor for the presence of leptospirochetes using the Polymerase Chain Reaction (PCR) along with a selective filtration technique developed by a collaborator at the University of Nevada, Reno.

Storm events can lead to considerable soil erosion from steep slopes. In addition to the loss of topsoil, sediment deposition on the fringing coral reef can stress photosynthesizing symbionts that are a major component of the global carbon cycle. These reefs serve as a buffer to ocean waves and thus protect the shoreline. They are also nurseries and a refuge to a host of sealife, a vital local source of protein as well as a sustainable livelihood to many.

2. Scope of the Program

- In-State Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

With EPA's efforts to remove illegal piggeries from within 50 ft of a stream, bacterial loads will decrease proportionally.

Flooding is expected to occur more frequently and more intensely as global warming continues.

With flooding, sediment loads from runoff will threaten the fringing coral reef that protects the shoreline from erosion and supports a local fishing industry.

Clients will acquire knowlege and assist in reducing the impacts of climate change

Clients will protect the forests and other natural resources

2. Ultimate goal(s) of this Program

To reduce the bacterial loads of E. coli, coliform, and leptospirchetes in order to protect aquatic resources and reduce the threat to human health.

To reduce runoff from flooded streams in order to conserve topsoil and to protect coral reefs from being smothered by sediment.

To reduce the negative impacts of climate change.
To protect watersheds and coastal areas
To establish agroforestry projects
To plant more trees
To control invasive species
To control soil erosion
To develop GPS/GIS maps.
To develop FSP management plans.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	0.5	0.0	0.2	0.0
2014	0.5	0.0	0.2	0.0
2015	0.5	0.0	0.2	0.0
2016	0.5	0.0	0.2	0.0
2017	0.5	0.0	0.2	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Coliform and E. coli monitoring will be done monthly on selected streams not currently monitored by the EPA. The Enzyme Substrate Coliform Test from Idexx Laboratories, Inc., will be used for determining the Most Probable Number (MPN) of bacteria per 100 ml of sample.

The Polymerase Chain Reaction (PCR), together with a unique membrane filtration technique developed by a colleague at the University of Nevada, Reno, will be used to detect presence or absence of leptospirochetes.

We will collaborate with partners at the local Department of Marine and Wildlife and the EPA for monitoring and reducing sedimentation on our fringing coral reef.

Conduct conservation and climate change workshops.
Propagate trees for agroforestry, watershed, and coastal stabilization projects.
Survey areas infested with invasive tree species.
Conduct control program for invasive tree species.
Develop GPS/GIS maps.
Develop FSP management plans.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Billboards
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Other 1 (brochures)
● Demonstrations	● Other 2 (videos)

3. Description of targeted audience

Scientists involved in environmental resources protection.

Policymakers in the Executive and Legislative branches of local government.

The Public.
Students
Farmers
Forestry clients

V(G). Planned Program (Outputs)

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- Number of patents submitted
- Number of peer reviewed publications

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Technical Reports/Peer-reviewed papers/Media reports
- Number of conservation and climate change workshops completed.
- Number of plants propagated at nursery for climate change projects.
- Number of workshops' participants.
- Number of trees planted for climate change projects.
- Number of acres (infested by invasive species)surveyed using GPS/GIS.
- Review of major publication on climate change and food security

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Bacterial and sediment loads in stream runoff.
2	Number of agroforestry projects established.
3	Number of watershed projects established and protected.
4	Number of coastal stabilization projects completed.
5	Number of acres infested by invasive tree species controlled.
6	Number of GPS/GIS maps developed.
7	Number of Forest Stewardship Management plans completed.

Outcome # 1

1. Outcome Target

Bacterial and sediment loads in stream runoff.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of agroforestry projects established.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of watershed projects established and protected.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of coastal stabilization projects completed.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of acres infested by invasive tree species controlled.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of GPS/GIS maps developed.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of Forest Stewardship Management plans completed.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 123 - Management and Sustainability of Forest Resources

- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Description

Impacts of natural disasters (hurricanes, earthquakes, tsunamis, and others)
Staff or funding changes
Changes in ASCC policies
Commitment from partners
Flooding events (frequency, duration, intensity) will play the largest role in influencing both bacterial and sediment loads in streams.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Pre/Post tests
Summative and formative evaluations
Accomplishment
reports
Visitation reports
GPS/GIS maps
Enrollment forms
Management plans

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

The prevalence of obesity among Samoan children and adolescents in American Samoa is higher than in the United States, being about 34% and 17%, respectively. Healthful behaviors are difficult to follow given pervasive promotion by fast food restaurants, few healthy food choices in small neighborhood grocery stores, lack of public parks conducive to informal physical activities, and automobile-centric built environment. Together with collaborators from Hawaii, Alaska, Guam, and the Commonwealth of the Northern Marianas Islands, we plan to introduce proven and culturally acceptable dietary and physical activity interventions aimed at 2- to 8-year olds and their caregivers. We will promote affordable, nutritious, sustainably grown local fruit and vegetable crops and locally caught seafood, while discouraging overconsumption of imported red meat and sugar sweetened beverages. We will provide guidance so that individuals and families can make informed, science-based decisions about their health and well-being.

3. Program existence : Intermediate (One to five years)

4. Program duration : Medium Term (One to five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	50%		50%	
724	Healthy Lifestyle	50%		50%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Based on CDC Growth Charts of 2000, 12.0% of boys and 11.5% of girls 2 to 5 years old had a body mass index (BMI) at or above the 97th percentile. In the United States, these figures are 5.8% and 8.1%, respectively. Likewise, 23.0% of boys and 18.1% of girls 6 to 11 years old were at or above the 97th BMI percentile compared to 16.3% of boys and 12.6% of girls in the US. Experts agree that the earlier interventions are applied, the greater the chance that the child will remain at a healthy BMI as he or she ages. Because overweight and obesity underlie a host of non-communicable diseases that require costly, long-term treatment in adulthood, it is imperative to reverse childhood obesity now.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Consultations with parents, school teachers, healthcare providers, church ministers, and government policymakers to design culturally acceptable dietary and physical activity interventions for children 2 to 8 years old should have the greatest chance for success.

2. Ultimate goal(s) of this Program

The ultimate goal is to minimize children's vulnerablility to contracting a non-communicable disease in adulthood. We hope to achieve this by keeping children at a healthy weight into adulthood through a combination of healthful food choices, amount of food consumed, and daily physical activity to balance calories consumed with calories expended.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	2.0	0.0	2.0	0.0
2014	2.0	0.0	2.0	0.0
2015	2.0	0.0	2.0	0.0
2016	2.0	0.0	2.0	0.0
2017	2.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

We will select among seven primary intervention studies for children aged 2 to 8 years that show a positive effect on at least one of our primary outcomes: Body Mass Index (BMI), food intake, or physical activity. Specific interventions will be selected during 2012 based on consultations with our multi-state partners, local advisory committees, and healthcare professionals.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● TV Media Programs

3. Description of targeted audience

Children aged 2 to 8 years. Mothers and grandmothers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Decrease in BMI percentiles, changes in food intake, changes in physical activity level among children 2 to 8 years of age.
- Number of Nutrition educational workshops
- Number of different recipes using
- Number of exercise and physical activity programs completed
- Number of awareness activities with school children

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Prevalence of overweight and obesity decreasing in this cohort over time
2	Number of program participants that prepared and consumed more economical and nutritious meals
3	Number of program clients that adopted balance diets utilizing local produce and healthy foods
4	Number of program clients that increased participation in physical activities and exercises
5	Number of program clients that lived healthier lifestyles

Outcome # 1

1. Outcome Target

Prevalence of overweight and obesity decreasing in this cohort over time

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of program participants that prepared and consumed more economical and nutritious meals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of program clients that adopted balance diets utilizing local produce and healthy foods

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of program clients that increased participation in physical activities and exercises

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of program clients that lived healthier lifestyles

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Public Policy changes
- Government Regulations

Description

Food prices will affect family food choices, as will discretionary income. We hope for at least policy change to help sustain a healthful lifestyle.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

We will collect anthropometric, food intake, sleep duration, physical activity, and consumption of sugar-sweetened beverages data at baseline, at one year, and after two years of children 2- to 5-years of age. This will be done in four communities: two which are "treatments" and two which are "controls." Analysis of this data will be used to determine the efficacy of our intervention strategies.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

According to American Samoa's Governor Executive Order No. 011-2009 establishing the American Samoa Food Policy Council, "the need to strengthen food security in American Samoa is essential given the territory's vulnerability to risk factor related to the territory's geographic isolation, limited opportunities to expand export earnings, declining land available for agriculture, the price of oil, high food prices, dependency on imported food, population pressures, climate change, natural disasters, and the rise in non-communicable chronic diseases." T tThe 2003 Agriculture Census of American Samoa reported that there were 7,094 farms that generated $58,196,832 in agricultural commodities. These commodities, either sold on the local market or used for family consumption including contributions to Samoan cultural events were valued at an average of $8,204 per farm. The average farm size declined from 7.1 acres in 1990 to 2.8 acres in 2003. The number of farmers, however, increased during that period from 1,126 to 7,094, in part due to the number of native Samoans returning from the US mainland after retirement to farm their communal lands. In addition, two-thirds of the territory's 76 square miles have slopes greater than 30% and annual rainfall ranges from 125 to 300 inches. As population pressure forces farming up these slopes, issues regarding erosion, landslides, flooding, wildlife habitat destruction, and watershed loss become more important. The projects included in the Global Food Security and Hunger planned program are aimed at helping subsistence and commercial farmers and ranchers increase yields and maintain sustainability. New varieties of disease-resistant vegetables and traditional crops are being imported to reduce inputs and maximize returns. Tissue cultured sweet potatoes from the Centre for Pacific Crops and Trees of the Secretariat of the Pacific Community have been imported and are being distributed to the farming community. A fruit tree greenhouse to spearhead the "Fruits for Life" project is scheduled to be completed and dedicated this year. CNR will continue to collaborate with partners at USDA, Land Grant institutions, and the Secretariat of the Pacific Community (SPC) in conducting nutrient analysis of local specialty crops such as bananas (variety soa'a) and other local crops and food. Inbreeding of swine is a cause of low production. We will continue to reduce inbreeding by making boar services available, buying or trading stock between our extension program and the farming community and implementing artificial insemination services. In FY 2009, the ASEPA funded CNR piggery renovation was completed. Extension and NRCS staff will continue to demonstrate to farmers the three waste management options that were approved by ASEPA. A livestock specialist is being sought to spearhead the effort in addressing this issue. Work on the efficacy of reduced risk pesticides will continue along with efforts to find biological control agents for the economically important pests. Our plant clinic identifies new and existing pests and diseases and recommends integrated management tactics. We will continue to import leaf blight resistant taro breeding lines with improved taste and diverse resistance genes and to search for acceptable varieties of cooking bananas resistant to black leaf streak disease. This effort supports the development of a food security program. New focus include but are not limited to projects in food security in collaborative projects with the local Department of Agriculture, the Office of Samoan Affairs, the local Department of Education and the local Soil and Water Conservation Distinct to augment ongoing projects with other agencies.

In general, aquaculture provides a means to alleviate compromised fisheries, create opportunities for displaced fishermen, and provide a sustainable and nutritionally important staple for impoverished and traditional cultures alike. The environmental conditions in American Samoa are ideal for culturing both marine and freshwater tropical fish and invertebrates. Additionally, the availability of

fishmeal from two local tuna canneries makes the formulation of low-cost feeds for aquatic organisms feasible in order to reduce a major portion of operational expenses. There are currently efforts to produce Nile tilapia, giant clams, Pacific threadfin, and mangrove crab. The success of such ventures will rely heavily on the expertise, technical assistance and presence of a Sea Grant Extension Agent based in American Samoa.

The proposed scope of work for the Extension Agent focuses on combining research, teaching and extension activities as well as collaboration with governmental and non-governmental agencies to address the needs of the aquaculture community and college students. Support for the American Samoa Extension Project will result in the development of economically-viable, sustainable aquaculture ventures throughout American Samoa, which includes the economically-depressed outer islands of Aunu'u and the Manu'a island group. In addition, by supporting education and public outreach efforts, Land Grant demonstrates its continuing commitment to foster strong ties with educational institutions such as ASCC in the Pacific region. This ensures that high quality educational and training programs in Marine Science that build capacity are provided for the students of American Samoa.

ASCC-CNR and University of Hawaii Sea Grant Program (UH Sea Grant) staff will continue to work with the Office of the Congressman of American Samoa, Star-Kist Samoa, the Oceanic Institute, the University of Hawaii Sea Grant College Program, the American Samoa Department of Agriculture, the Samoan Family Sunfish Cooperative, Inc., and the Secretariat of the Pacific Community to:obtain fish meal from Star-Kist Samoa for use in feeds production; analyze local agriculture products/byproducts and fish meal to create recipes for tilapia feeds, and increase production and marketing of farmed fish in American Samoa. CNR has constructed a freshwater aquaculture demonstration facility and will continue to demonstrate several potential species production systems and aquaponics. The facility will also demonstrate freshwater and marine aquarium systems to demonstrate potential culture of ornamental fish and invertebrate organisms for export into the global ornamental industry. The American Samoa Environmental Protection Agency is not concerned with effluent from aquaculture farms but is concerned with piggery effluent. CNR will continue to provide technical support to help pig farms become ASEPA compliant by using pig effluent in concert with tilapia culture. Science curriculum in local high schools can be enhanced with aquaculture activities, especially in resource-poor areas like Manu'a. Aquaponics systems are easy to maintain and provide an excellent tool for learning the scientific method as well as to generate interest in agriculture, aquaculture and marine science.

For 2013, CNR will look at the Nagoya protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their utilization. Because food security begins with genetic resources and their is a wide effort across the Pacific to protect its genetic resource, CNR needs to understand the protocol and participate in meetings about protecting genetic resources.

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	5%		0%	
124	Urban Forestry	5%		0%	
125	Agroforestry	5%		0%	
133	Pollution Prevention and Mitigation	5%		0%	
202	Plant Genetic Resources	10%		0%	
205	Plant Management Systems	10%		0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		0%	
212	Pathogens and Nematodes Affecting Plants	5%		50%	
215	Biological Control of Pests Affecting Plants	5%		50%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	10%		0%	
315	Animal Welfare/Well-Being and Protection	5%		0%	
401	Structures, Facilities, and General Purpose Farm Supplies	5%		0%	
601	Economics of Agricultural Production and Farm Management	5%		0%	
604	Marketing and Distribution Practices	5%		0%	
903	Communication, Education, and Information Delivery	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

In the late FY 2006, ASCC-CNR staff assisted the American Samoa Environmental Protection Agency (ASEPA) in a territorial wide piggery survey identifying the location, the kind of operation, the total number of pigs, in addition to determining if the piggery was in compliance with the local laws. Of the 1,000 piggeries identified, 710 of them including the CNR piggery was not in compliance due to inadequate waste management system. This has necessitated a slight change in priorities. In FY 2009, the ASEPA funded CNR piggery renovation was completed. Extension and NRCS staff will continue to demonstrate to farmers the three waste management options that were approved by ASEPA. The portable pigpen that will accommodate up to two large pigs, the dry litter technology (DLT) system (using a 6% sloped floor and wood chips to compost the manure) and the wash-down system with solid waste separator and a drain-field (for feeding the liquid effluent to fruit tree and vegetable crops). These demonstrations will assist local

pig farmers bring their operations into ASEPA compliance. CNR will assist pig farmers as they adopt any of these systems that will bring their swine operation into compliance with the local laws. This will be the first priority in the animal industry. ASCC-CNR hosted the first Dry Litter Technology Educational Workshop in the Pacific for piggery operators and local government technical staff on February 24, 2011. The workshop goal is to "expand the DLT system throughout the Pacific region in order to protect water resources, maintain intrinsic cultural values tied to the pig, and increase food security through improved, locally adaptable and sustainable animal waste management production practices." A total of 62 pig operators, regulators, extension agents, researchers and private consultants representing nine countries participated in the workshop. According to workshop organizers, "American Samoa has been the leader in the deployment of the dry litter technology for Small-scale piggeries, due to commitments, innovation and resources from key partnerships." For the crop industry, cultivars of leaf blight resistant taro and black leaf resistant bananas will continue to be introduced in tissue culture, tested and released to the farming community to increase genetic variability. We will continue with the vegetable seed sales to our clients. Vegetable variety demonstrations to identify cultivars that will perform well in our hot, humid and wet tropical environment will continue. For the fruit industry, the priority is to rejuvenate the program's fruit tree orchard by introducing new fruit tree varieties. For the varieties that perform well, workshops will be conducted to teach farmers and interested homemakers the different methods of asexual propagation so that each home will have a diverse variety of fruit for the children to enjoy. Then parents will not have to purchase apples and oranges, peaches and pears to feed their children thereby affecting an import replacement scheme for the Territory. CNR staff will continue to contact and visit counterparts in Independent Samoa to collect fruit trees seeds and seedlings for multiplication and propagation in the "Fruits for Life" greenhouse. We will continue to recruit for a Fruit Tree Specialist. Because of the steep slopes and high rainfall, soil erosion studies along with contour hedgerows and other soil conservation methods will be employed in trials and demonstrations. The demonstrations of 5 different species of planting materials have been replaced by vetiver grass (Chrysopogon zizanioides), one of the five, which showed the greatest promise in reducing soil erosion and creating "natural" terraces. Pesticide efficacy tests of reduced risk chemicals are being conducted to complement the IPM strategies for the different economic crops.

Aquaculture is new this year as a formal program within ASCC-CNR. ASCC-CNR staff will continue to work with the University of Hawaii Sea Grant College Program (UH Sea Grant) Extension Agent in continuing regional aquaculture activities. UH Sea Grant has had a permanent presence in American Samoa since 2002. Major challenges on island include identifying an economical solution to procuring aqua-feeds, identifying new aquafarmers, assisting new farmers in procuring start-up funding for their farms, reducing agricultural pollution, and poor education. Off-island suppliers can provide feeds for those with sufficient funds. However, most of the farmers on island are not able to afford these feeds. ASCC-CNR has worked with UH Sea Grant and established a feeds production lab on ASCC campus. Using the lab reduces the price of 50 pounds of feed from $25 to between $12 and $17 be allowing farmers to use locally available feedstuffs like taro, breadfruit, bananas, and fishmeal.

Many local residents are interested in aquaculture, but require demonstrations of successful aquaculture that they can mimic. Off-island feeds manufacturers have been unwilling to ship their products to American Samoa leaving local feeds production as the only option for farmers that demand high quality feeds. ASCC-CNR and University of Hawaii Sea Grant Program (UH Sea Grant) staff will continue to work with the Office of the Congressman of American Samoa, Star-Kist Samoa, the Oceanic Institute, the University of Hawaii Sea Grant College Program, the American Samoa Department of Agriculture, the Samoan Family Sunfish Cooperative, Inc., and the Secretariat of the Pacific Communityto:obtain fish meal from Star-Kist Samoa for use in feeds production; analyze local agriculture products/byproducts and fish meal to create recipes for tilapia feeds, and increase production and marketing of farmed fish in American Samoa. CNR has constructed a freshwater aquaculture demonstration facility and will continue to demonstrate several potential species production systems and aquaponics. The facility will also demonstrate freshwater and marine aquarium systems to demonstrate potential culture of ornamental fish and invertebrate organisms for export into the global ornamental industry.

Interested residents quickly lose interest when they learn start-up funding is not readily available to them through Land Grant-CNR or UH Sea Grant. CNR will identify funding opportunities and broadcast them to interested clients.

The American Samoa Environmental Protection Agency is not concerned with effluent from aquaculture farms but is concerned with piggery effluent. CNR will provide technical support to help pig farms become ASEPA compliant by using pig effluent in concert with tilapia culture. Science curriculum in local high schools can be enhanced with aquaculture activities, especially in resource-poor areas like Manu'a. Aquaponics systems are easy to maintain and provide an excellent tool for learning the scientific method as well as to generate interest in agriculture and marine science.

According to the 2008 census of agriculture by the National Agricultural Statistics Services (NASS) of the U.S. Department of Agriculture (USDA), taro (Colocasia esculenta) and banana (Musa spp.) are the most important crops in American Samoa, with annual productions estimated at 13,342,054 lbs (6,052 metric tons) and 12,295,220 lbs (5,577 metric tons), respectively. The corresponding monetary values are $19,154,483 and $7,356,853. Plant pathology research activities for FY 2013 and following years will focus on these two crops, in addition to providing plant clinic services to the community and supporting CNR instructional programs.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Programs that we will implement are what the clients/farmers need and want to improve their operations.

Farmers want to improve their operations and will participate in the programs made available to them.

Farmers will invest time and money to improve their operation.

Funding for CNR activities will remain adequate.

Priorities will not change.

CNR will recruit qualified personnel necessary to maintain its activities.

There will be a need for Samoan translations.

2. Ultimate goal(s) of this Program

To increase farm production and returns, and the well-being of rural farm life, while improving sustainability and protecting the environment and human health.

To improve crop quality/crop security through pest and disease monitoring and genetic diversity.

To increase production and marketing of livestock and farmed fish.

To improve public understanding of agriculture, aquaculture, and marine science, including their impacts on the land and sea

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	7.0	0.0	4.0	0.0
2014	7.0	0.0	4.0	0.0
2015	7.0	0.0	4.0	0.0
2016	7.0	0.0	4.0	0.0
2017	7.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Multiplication, evaluation and distribution of improved taro and banana varieties.
Laboratory bioassay for foliar plant diseases.
List of plant-parasitic nematodes on taro, their distribution and management.
Vegetable variety evaluation demonstrations and workshops.
Budding, grafting and airlayering workshops for citrus and other fruit trees.
Collection of fruit trees planting materials (seeds and seedlings) from American Samoa and Independent Samoa.
Order seeds of improved fruit tree varieties
Nutrient analysis of fruits (banana variety - soa'a) and other crops and food
Pig project to reduce inbreeding of farmers' animal operations - buying/selling or trading of stock, boar services, artificial insemination (work with U.H. in re-starting this program).
Tissue culture of traditional staples and increasing genetic diversity to improve crop security.
Plant clinic diagnoses and recommendations
Pest surveys
Testing of reduce-risk pesticides
Biological control studies of important pests
Technical assistance with nuisance bee problems and assessment of apiculture
Pesticides Safety Training
Farm Safety Training
Farm visitations and demonstrations
Tilapia breeding program
Evaluation of native freshwater fish and crustaceans for intensive aquaculture
Feeds lab development
Teach ASCC courses, MSC 200: Introduction to Aquaculture and MSC 220: Introduction to Fisheries Management
Technical assistance with disease and nutrition issues for aquaculture farmers
Technical assistance with aquaponics and integrated pig-tilapia aquaculture
Technical assistance with grant writing

Technical advising for local Samoa Family Sunfish Cooperative, Inc.
Demonstration of aquarium science
Multiplication and distribution of vetiver grass (Chrysopogon zizanioides).

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Billboards
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Other 1 (Brochures, Newspapers articles)
● Demonstrations	● Other 2 (videos)
● Other 1 (Plant Clinic Diagnoses)	
● Other 2 (On-farm research plot)	

3. Description of targeted audience

Small and resource-limited farmers and ranchers, commercial farmers, aquaculture farmers, forestry clients, hobby farmers, general public, school students, 4-H members, church youth and other community group members.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of cultivars of disease resistant taro, banana,and improved varieties of sweet potato multiplied and released.
- Number of improved taro setts,banana suckers/bits, and/or sweet potato slips disseminated.
- Number of plant clinic diagnoses and recommendations made to assist clients.
- Number of vegetable variety demonstrations completed.
- Number of new fruit tree varieties introduced.
- Number of fruit tree propagation workshops.
- Number of pigs and piglets sold/traded.
- Number of pesticide efficacy tests completed.
- Number of Pesticide Applicators' Training workshops conducted.
- Number of biological control species introduced or augmented to control local pests.
- Number of Tilapia released from breeding program.
- Number of tilapia feed trials completed.
- Number of vegetable gardening workshops conducted.
- Number of vegetable gardens established.
- Pounds of Tilapia feed produced at ASCC feeds lab.
- Number of plant disease causal agents identified.
- Number of nutrient-dense traditional crop varieties disseminated
- Number of trainings in taro breeding

☐ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of farmers growing improved varieties of taro, bananas, and sweet potatoes.
2	Number of clients targeting problems according to recommendations on plant clinic form.
3	Number of farmers/clients growing improved vegetable cultivars.
4	Number of people growing improved budded/grafted or airlayered fruit trees in their back yards.
5	Number of pig farmers upgrading their stock.
6	Number of reduced risk pesticides recommended for use.
7	Number of pesticide applicators trained and certified.
8	Number of farmers growing improved genetic stocks of tilapia.
9	Number of farmers upgrading their farms to aquaponics.
10	Number of farmers making their own tilapia feeds.
11	Number of farmers integrating their piggeries with tilapia culture.
12	Number of local crops nutrient analysis completed.
13	Number of people eating more vegetables as a result of the vegetable gardening project
14	Number of nutrient analysis conducted for local crops and food

Outcome # 1

1. Outcome Target

Number of farmers growing improved varieties of taro, bananas, and sweet potatoes.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 212 - Pathogens and Nematodes Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of clients targeting problems according to recommendations on plant clinic form.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of farmers/clients growing improved vegetable cultivars.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 215 - Biological Control of Pests Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of people growing improved budded/grafted or airlayered fruit trees in their back yards.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of pig farmers upgrading their stock.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems

- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Number of reduced risk pesticides recommended for use.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of pesticide applicators trained and certified.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 8

1. Outcome Target

Number of farmers growing improved genetic stocks of tilapia.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 9

1. Outcome Target

Number of farmers upgrading their farms to aquaponics.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 10

1. Outcome Target

Number of farmers making their own tilapia feeds.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 11

1. Outcome Target

Number of farmers integrating their piggeries with tilapia culture.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation
- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 12

1. Outcome Target

Number of local crops nutrient analysis completed.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 13

1. Outcome Target

Number of people eating more vegetables as a result of the vegetable gardening project

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 14

1. Outcome Target

Number of nutrient analysis conducted for local crops and food

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 125 - Agroforestry
- 202 - Plant Genetic Resources

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management
- 604 - Marketing and Distribution Practices
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Lack of staff; procurement proc)

Description

Impacts of earthquake, tsunami, hurricanes, drought and other natural disasters hitting American Samoa

Loss of staff reduced program capacity

Staff or funding changes, i.e. loss of USDA-CSREES formula funds

Introduction of exotic pests and invasive species

Changes in institutional priorities and access to research and extension facilities, equipment and land.

Changes in ASCC and/or CNR policies detrimental to planned programs

Unresolved experiment station land boundary issues

Inability to use funds because of procurement process and procedures

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- During (during program)
- After Only (post program)
- Time series (multiple points before and after program)
- Before-After (before and after program)

All workshops, demonstrations, and field days will be evaluated for summative and formative information. Qualitative information from farm visits and interviews. Quantitative sampling data from feed trials and candidate species culture trials.

Data Collection Methods

- Unstructured
- Telephone
- On-Site
- Structured
- Sampling
- Tests

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

Forests have the potential to provide a sustainable quantity of biomass for biofuels and bioenergy production. However, because of American Samoa's limited land mass, forest areas, and available qualified human resources; therefore, our programs will focus on energy conservation education, urban tree planting, reduction of greenhouse gas emissions, and fuel wood tree species propagation. CNR will conduct community assessments to collect data on the number of households who are using modern electrical appliances and families who are still using fuel wood (traditional method) for food preparation. CNR will also collaborate with American Samoa's Territorial Energy Office (TEO) and other local and federal government agencies in conducting energy conservation education programs to schools and communities.

Moreover, CNR will conduct tree plantings around residential, church, school, and commercial property and public areas including sports fields, parks, and government lands for beautification, protection from strong winds, habitat for birds and other wildlife, and especially providing shade (reducing air conditioning costs). According to Donovan and Butry (2009), "trees influence thermal comfort, energy use, and air quality by providing shade, transpiring moisture, and reducing wind speeds." Furthermore, CNR will propagate native fuel wood tree species for distribution to the public. CNR will work with TEO in promoting the use of energy efficient materials and items such as electric cars, appliances, windows, light bulbs, solar panels, electronics and others. There is a need to recruit scientist(s) to conduct research on sustainable energy in American Samoa.

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	10%		0%	
124	Urban Forestry	40%		0%	
125	Agroforestry	40%		0%	
132	Weather and Climate	10%		0%	
	Total	100%		0%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The total land area of American Samoa is 76 square miles, with a population of 69,200. The topography is rugged and steep with about 42% of the land having slopes of 45% and higher. The main island of Tutuila contains 34,082 acres of land, which is 70% of the total land area for American Samoa. Out of the 34,082 acres, only 18,626 acres have less than 45% slope, so areas for development and agriculture are limited (SWARS, 2010). The 2009 vegetation mapping by ASCC CNR and USFS estimated 81% of land area was forested (SWARS, 2010). The high world prices of oil impacted American Samoa in terms of high costs for fuel/gasoline, electricity, and water. Consequently, the impact of the greenhouse gas emissions to the environment is high. According to the Governor of American Samoa's August 2007 Executive Order 10A-2007, in order to reduce greenhouse gas emissions, the American Samoa Government (ASG) must adhere to the following: all ASG vehicles must have a minimum fuel efficiency rating of 20 miles per gallon (MPG); begin purchasing hybrid vehicles rate of 5% increasing to 50% by model year 2017; prohibit the importation of vehicles more than 10 years old; replace incandescent light bulbs with compact florescent bulbs; ASG appliance and electronic purchases must have an USEPA Energy Star approval; and prohibit the importation of high phosphorous detergents, effective October 1, 2007. Many households in American Samoa are using modern electric appliances for cooking meals. However, some families are still cooking especially the Sunday meals in a traditional Samoan earth oven, or umu, fired by fuel wood purchased or obtained locally (SWARS, 2010). Energy conservation is paramount in terms of reducing financial obligations for gas and utilities but also provides a healthier environment. There is a need to recruit scientist(s) to conduct research on sustainable energy in American Samoa.

2. Scope of the Program

- In-State Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Greenhouse gas emissions will be reduced
Energy costs will be reduced
Funding for program activities will be adequate

Scientists will be recruited to conduct research on sustainable energy
Program participants will learned new knowledge and practice new skills

2. Ultimate goal(s) of this Program

Reduced production of undesirable emissions.
Reduced dependence on fossil fuels

Reduced energy costs
Cleaner and healthier environment

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	3.0	0.0	1.0	0.0
2014	3.0	0.0	1.0	0.0
2015	3.0	0.0	1.0	0.0
2016	3.0	0.0	1.0	0.0
2017	3.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Energy conservation workshops
Community assessments/surveys
Tree plantings in urban areas
Collaboration with partner agencies
Propagation of trees in greenhouse and nursery for urban tree plantings
Collect native fuel wood tree seeds and seedlings for multiplication
Display and put up energy efficient items and materials
Recruitment for scientist
Site visitations to clients
Distribution of fuel wood tree planting materials

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods

● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Displays)	● Billboards ● Newsletters ● TV Media Programs ● Other 1 (videos) ● Other 2 (brochures)

3. Description of targeted audience

Students
Farmers
Forestry clients
4-H members
Church youth
Community groups
General public
Policy makers in the Legislature and Executive branches of the American Samoa government
Business people
Construction people
Car dealers

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of energy conservation workshops completed.
- Number of trees propagated at nursery for urban tree plantings.
- Number of fuel wood trees propagated for project.
- Number of collaborative projects with other government agencies and non-government organizations.
- Number of printed educational materials distributed.
- Number of energy efficient materials and items demonstration and display.
- Study on level of energy sustainability in American Samoa

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of workshop participants who acquired knowledge about energy conservation.
2	Number of workshop participants who adopted energy conservation practices.
3	Number of trees planted for energy conservation projects.
4	Number of community assessments completed.
5	Number of trees planted for fuel wood projects.
6	Percentage of savings in electricity bills.
7	Number of participants who purchased and installed energy efficient materials and items at the work place or home.
8	Number of participants who are now using fuel wood for food preparation/cooking.

Outcome # 1

1. Outcome Target

Number of workshop participants who acquired knowledge about energy conservation.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of workshop participants who adopted energy conservation practices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of trees planted for energy conservation projects.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number of community assessments completed.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of trees planted for fuel wood projects.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Percentage of savings in electricity bills.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Number of participants who purchased and installed energy efficient materials and items at the work place or home.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

Number of participants who are now using fuel wood for food preparation/cooking.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Staff Recruitment)

Description

Impacts of natural disasters (hurricanes, earthquakes, tsunamis, and others)
Staff or funding changes
Changes in ASCC policies
Commitment from partners

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Pre/Post tests
Summative and formative evaluations
Accomplishment
reports
Visitation reports
Enrollment forms

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Food safety issues such as food-born-illnesses, safe food handling, sanitation, water quality, pesticides residues on produce, human pathogens in the environment, safe handling of tools and chemicals in school and community gardens, and associated environmental risks are major concerns in American Samoa.

In 2011 CNR collaborated with the National Emergency Preparedness Training Center and began developing guidelines with members of the Food Policy Council in the event of food-borne illnesses.

CNR will increase public awareness about best practices in food safety not only on the farm but in school gardens and community gardens, the home, the workplace, and even at church and village functions. The community must understand the human pathogens in the environment and how to reduce risks found in the different environments.

CNR staff will develop procedures and conduct workshops and demonstrations on food safety issues. Furthermore, food safety audits will be prepared and policies to address food-borne illnesses will be developed. Demonstrations will be provided to school age children and adults on the correct way to wash hands to prevent food borne illness.

CNR staff will distribute food safety procedures, publications, brochures, and educational materials to students, teachers, food handlers, food vendors, homemakers, cooks, farmers, and the general public. ASCC CNR will collaborate with the local departments of public health, education, agriculture, LBJ, ASPA, EPA, and other government agencies and non-government organizations (village councils and churches) in planning, developing, and implementing programs to address food safety issues in American Samoa.

3. Program existence : New (One year or less)

4. Program duration : Medium Term (One to five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%		10%	
111	Conservation and Efficient Use of Water	10%		10%	
132	Weather and Climate	10%		10%	
212	Pathogens and Nematodes Affecting Plants	10%		10%	
216	Integrated Pest Management Systems	10%		10%	
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	10%		10%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	10%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	15%		15%	
723	Hazards to Human Health and Safety	15%		15%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Food safety issues such as food-born-illnesses, safe food handling, sanitation, water quality, pesticides residues on produce, human pathogens in the environment, safe handling of tools and chemicals in school and community gardens, and associated environmental risks are major concerns in American Samoa.

Improper food handling and storage contributed to 1,299 cases of unspecified diarrhea reported in 1994. Furthermore, 14 cases of salmonellosis and six cases of food poisoning reported by LBJ (2004) could be attributed to improper food handling. Many cases of food borne illness are self treated and are not reported.

In 2011 CNR collaborated with the National Emergency Preparedness Training Center and began developing guidelines with members of the Food Policy Council in the event of food-borne illnesses.

CNR will increase public awareness about best practices in food safety not only on the farm but in school gardens and community gardens, the home, the workplace, and even at church and village functions. The community must understand the human pathogens in the environment and how to reduce risks found in the different environments.

CNR staff will develop procedures and conduct workshops and demonstrations on food safety issues. Furthermore, food safety audits will be prepared and policies to address food-borne illnesses will be developed. Demonstrations will be provided to school age children and adults on the correct way to wash hands to prevent food borne illness.

CNR staff will distribute food safety procedures, publications, brochures, and educational materials to

students, teachers, food handlers, food vendors, homemakers, cooks, farmers, and the general public. ASCC CNR will collaborate with the local departments of public health, education, agriculture, LBJ, ASPA, EPA, and other government agencies and non-government organizations (village councils and churches) in planning, developing, and implementing programs to address food safety issues in American Samoa.

2. Scope of the Program

- In-State Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Program participants/Clients will acquire knowledge, develop skills, and change behaviors.
Program participants/Clients will adopt food safety best practices.
Food-borne illnesses can be prevented.
Community coalitions and agency collaborations and partnerships will be established.
Program delivery will be both in English and Samoan languages
Materials will need to be translated into Samoan
Funding and staffing will be in place
Priorities will not change

2. Ultimate goal(s) of this Program

To reduce exposure to physical dangers in the environment
To consume safe water and food
To reduce the incidence of food-borne illnesses
To reduce the risks of getting hurt/injure from handling farm tools and chemicals
To develop policies to address food safety issues
To complete food safety audits

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2013	3.0	0.0	1.0	0.0
2014	3.0	0.0	1.0	0.0
2015	3.0	0.0	1.0	0.0
2016	3.0	0.0	1.0	0.0
2017	3.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Develop procedures for safe food handling.
Develop procedures for safe handling of tools and supplies.
Watch out for physical dangers in the environment such as plants with toxins or overexposure to sun.
Determine safe use of fertilizers and pesticides.
Develop plans for Integrated Pest Management.
Implement good sanitation and protection practices.
Understand soil and water quality safety.
Determine relationship between school garden and school cafeteria.
Prepare for food safety audits.
Develop policies needed to address foodborne illnesses.
Develop public awareness activities and media.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Billboards
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Other 1 (Newspaper articles)
● Demonstrations	● Other 2 (Brochures)
● Other 1 (Public meetings)	
● Other 2 (Visitations)	

3. Description of targeted audience

All residents of American Samoa are the target audience including students, teachers, food handlers, food vendors, homemakers, cooks, farmers, village residents, church members, children and youth program participants.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of procedures developed for safe food handling.
- Number of procedures developed for safe handling of tools and supplies.
- Number of workshops on physical dangers in the environment such as plants with toxins or overexposure to sun.
- Number of workshops on safe use of fertilizers and pesticides.
- Number of workshops on Integrated Pest Management.
- Number of demonstrations on good sanitation and protection practices.
- Number of soil and water quality safety workshops.
- Number of schools with safe drinking water sources and facilities for washing hands.
- Number of school gardens established.
- Number of food safety procedures/publications/brochures/educational materials distributed.
- Review of USDA Food Codes

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of participants who completed food safety workshops and demonstrations.
2	Number of participants who acquired knowledge and developed skills in food safety issues
3	Number of participants who adopted food safety best practices.
4	Number of participants who adopted safe handling of tools and chemicals best practices.
5	Number of food handlers who are certified and received health permits/cards.
6	Number of schools with safe drinking water.
7	Number of schools with hand washing facilities.
8	Number of schools preparing and consuming vegetables from their gardens.
9	Number of food safety audits completed.
10	Number of food policies developed to address food safety issues.

Outcome # 1

1. Outcome Target

Number of participants who completed food safety workshops and demonstrations.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of participants who acquired knowledge and developed skills in food safety issues

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of participants who adopted food safety best practices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of participants who adopted safe handling of tools and chemicals best practices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of food handlers who are certified and received health permits/cards.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of schools with safe drinking water.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of schools with hand washing facilities.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 8

1. Outcome Target

Number of schools preparing and consuming vegetables from their gardens.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 9

1. Outcome Target

Number of food safety audits completed.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 10

1. Outcome Target

Number of food policies developed to address food safety issues.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 132 - Weather and Climate
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems
- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Staff Recruitment)

Description

Impacts of natural disasters (hurricanes, earthquakes, tsunamis, and others)
Staff or funding changes

Changes in ASCC policies
Commitment from partners

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Pre/Post tests
Summative and formative evaluations
Accomplishment
reports
Visitation reports
Enrollment forms
Government Agencies' Records

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Human Health and Well-Being

2. Brief summary about Planned Program

For 2013, CNR aims to understand the relative importance of different mosquito species as vectors of human and animal diseases is critical to targeting the mosquito control efforts that aim to prevent those diseases. American Samoa has two species of mosquitoes known to be responsible for transmission of dengue during occasional outbreaks that occur in the territory. Four of the territory's twelve mosquito species are known to carry filariasis. In addition to dengue and filariasis, American Samoa is at risk for introduction of arboviruses such as chikungunya, West Nile, Ross River, and others not currently present in the territory. Other mosquito-vectored pathogens such as Dirofilaria immitis and avian malaria may threaten American Samoa's domesticated and wild animals.

For some of these diseases, the local vector species are known. For others it is unclear which species could carry these diseases locally. Even for dengue and filariasis, the relative importance of the different species which can carry these diseases is not known. Past work has looked at the relative abundances of the different species, their biting rates on humans, and their ability to uptake, develop and propagate some of these pathogens. But other factors factors that are less well-understood are important in determining the importance of a mosquito species as a disease vector. One of these factors is host preference. Mosquitoes may blood feed on numerous vertebrate species in addition to humans. Species that feed more frequently on humans are likely to be more important vectors of human pathogens than those that feed more frequently on other vertebrate species. Also, for species that readily feed on other animals besides humans, the presence of animals (such as pigs) in an area may even reduce biting frequency on humans.

3. Program existence : New (One year or less)

4. Program duration : Medium Term (One to five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
721	Insects and Other Pests Affecting Humans	15%		40%	
722	Zoonotic Diseases and Parasites Affecting Humans	15%		40%	
724	Healthy Lifestyle	70%		20%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

1) Mosquito host preferences in American Samoa villages

Understanding the relative importance of different mosquito species as vectors of human and animal diseases is critical to targeting the mosquito control efforts that aim to prevent those diseases. American Samoa has two species of mosquitoes known to be responsible for transmission of dengue during occasional outbreaks that occur in the territory. Four of the territory's twelve mosquito species are known to carry filariasis. In addition to dengue and filariasis, American Samoa is at risk for introduction of arboviruses such as chikungunya, West Nile, Ross River, and others not currently present in the territory. Other mosquito-vectored pathogens such as Dirofilaria immitis and avian malaria may threaten American Samoa's domesticated and wild animals.

For some of these diseases, the local vector species are known. For others it is unclear which species could carry these diseases locally. Even for dengue and filariasis, the relative importance of the different species which can carry these diseases is not known. Past work has looked at the relative abundances of the different species, their biting rates on humans, and their ability to uptake, develop and propagate some of these pathogens. But other factors factors that are less well-understood are important in determining the importance of a mosquito species as a disease vector. One of these factors is host preference. Mosquitoes may blood feed on numerous vertebrate species in addition to humans. Species that feed more frequently on humans are likely to be more important vectors of human pathogens than those that feed more frequently on other vertebrate species. Also, for species that readily feed on other animals besides humans, the presence of animals (such as pigs) in an area may even reduce biting frequency on humans.

Recently, methods have been developed to use PCR to amplify DNA from blood meals in the guts of mosquitoes and use the DNA sequence to identify the species that was the source of the blood meal. When information about the frequency of feeding on a range of local vertebrate species is combined with information about the relative abundances of those potential host species, an index of host preference can be obtained for each mosquito species. Combining this host preference information with information about a species' abundance, biology, and behavior can help elucidate the relative importance of the species in human pathogen transmission and inform efforts to reduce disease transmission.

2) Understanding Stress in American Samoa

There is a paucity of research available on stress in American Samoa as it relates to family, church, and work-related stress. Yet many claim to be under a great deal of stress and often talk about its impact on one's health and well-being. CNR will conduct community discussion and seek stakeholder input on their perceived causes of stress and ideas on how to manage stress in the particular context of American Samoa. CNR will seek to understand the economic, political, and social stress factors in American Samoa. A literature review and methoddology will be developed with the help of an intern from East Tennessee State University during the summer of 2012.

2. Scope of the Program

- In-State Extension
- In-State Research

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

1) For some of these diseases, the local vector species are known. For others it is unclear which species could carry these diseases locally. Even for dengue and filariasis, the relative importance of the different species which can carry these diseases is not known. Past work has looked at the relative abundances of the different species, their biting rates on humans, and their ability to uptake, develop and propagate some of these pathogens. But other factors factors that are less well-understood are important in determining the importance of a mosquito species as a disease vector. One of these factors is host preference.

2) Stress is a real problem in American Samoa. It is a problem that is not well-understood and that the community will express a strong need to understand this problem and desires to seek a way to cope with stress.

2. Ultimate goal(s) of this Program

The mosquito research project will improve our understanding of the relative importance of the different local mosquito species as vectors of human and animal diseases, and recommended control strategies will be adapted accordingly.

The stress management project will improve our understanding of the unique factors causing stress in American Samoa and recommendations on how to measure, deal with, and lessen stress.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

V(F). Planned Program (Activity)

1. Activity for the Program

1) We propose to collect mosquitoes from six villages in American Samoa and use PCR and sequencing to identify the sources of their blood meals. At the same time, we will estimate densities of likely vertebrate hosts in the vicinity of those villages. Mosquito-to-host forage ratios will then be calculated to determine if mosquitoes show biases in host selection.

2) To conduct community focus groups on stress in American Samoa.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion	● TV Media Programs

3. Description of targeted audience

Residents of American Samoa because anyone can be affected by dengue or filariasis.

For the stress management project, the audience is primarily adults, either employed or non-employed, male or female, who participate in traditional village or church activities.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
  - Direct Adult Contacts
  - Indirect Adult Contacts
  - Direct Youth Contacts
  - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- number of modquito to host forage ratios calculated
- number of discussions held on stress

☑ Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number to determine relative importance of the species in human pathogen transmission and inform efforts to reduce disease transmission.
2	Listing of stress factors identified in American Samoa

Outcome # 1

1. Outcome Target

Number to determine relative importance of the species in human pathogen transmission and inform efforts to reduce disease transmission.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 721 - Insects and Other Pests Affecting Humans
- 722 - Zoonotic Diseases and Parasites Affecting Humans

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Listing of stress factors identified in American Samoa

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

- Populations changes (immigration, new cultural groupings, etc.)
- Other (Staff time)

Description

Natural disasters can impact mosquito collection.
The economy impacts the degree of stress people can feel.
Public policy changes and government regulations can help bring about postivie changes in human health.
Competing public priorities and competing programmatic challenges can impact staff time.
Population changes impact lifestyles.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

For the mosquito research project, a research and monitoring plan will be developed to track the progress of the project.

For the "Stress in American Samoa" project, 4 community discussions will be considered positive. The discussion will be compiled and reviewed by selected participants and staff.