

2017 American Samoa Community College Combined Research and Extension Plan of Work

Status: Accepted

Date Accepted: 07/19/2016

I. Plan Overview

1. Brief Summary about Plan Of Work

2017 Plan of Work:

The American Samoa Community College (ASCC), Agriculture, Community & Natural Resources Program (ACNR) will continue with its planned programs from 2016: Families, Youth and Communities; Food Security; Health & Wellness; and Ecosystem. In 2017, ACNR will continue to serve the clientele through its education, research, and extension programs in partnership with government agencies and non-government organizations at the local, territorial, regional, national, and federal levels.

Families, Youth and Communities:

ACNR will explore options to revive the 4-H Foundation. The 4-H Foundation was active in the 1980s and 1990s in providing private support to the 4-H program. In addition to the traditional 4-H projects, emphasis will be placed on programming in the following areas: youth at risk, agriculture, health, nutrition, obesity, Samoan culture and language, STEM (Science, Technology, Engineer, & Math), and volunteer development and retention.

Food Security:

ACNR will continue to serve the people of American Samoa through education, research, and extension programs in crops (vegetable, fruit, and traditional), livestock (poultry & swine), and aquaculture (tilapia) production and protection. Furthermore, ACNR will continue to collaborate with the American Samoa Environmental Protection Agency (ASEPA) in offering the Pesticides Safety Training Course. Programs in food safety, waste management, and mapping of the American Samoa Food System will continue in 2017.

Health & Wellness:

ACNR will continue to serve its clientele through education, research, and extension programs in nutrition, diet, exercise, childhood & adulthood obesity, food safety, healthy lifestyles and environment, and health communications. Moreover, ACNR will continue to collaborate with the local Department of Health (DOH) and the Centers for Disease Control and Prevention (CDC) to address the recent outbreaks (2014-2015, 2016) of chikungunya, dengue, and Zika viruses. ASCC ACNR will continue to research the biology and control of disease-carrying mosquitoes and communicate results via research reports, brochures, seminars, TV, and individual contacts with other agencies.

Ecosystem:

ACNR will continue to collaborate with local and federal partners in extending education, research, and extension programs to the people of American Samoa to protect the forest ecosystems (watersheds, forests, agroforestry), alleviate the negative impacts of climate change (invasive species, flooding, soil erosion, water contamination), and sustain energy resources. ACNR will recruit a policy analyst to develop policy or ordinances to prevent inappropriate tree cutting in government and public lands. Further, ACNR will acquire new remote sensing technologies (unmanned aerial vehicle to reach inaccessible land areas) to develop more efficient vegetation mapping protocols to support research and program planning and evaluation. ACNR will continue to collaborate with local and federal partners in conducting research on the Samoan swallowtail butterfly, a natural treasure that is now found only on the island of Tutuila, American Samoa.

Staffing/Challenges:

One of the challenges we encountered internally is the lack of professional staff. ACNR will recruit for a food scientist, exercise physiologist, Samoan language translator, policy analyst in the areas of: food,

agriculture, environment (climate change, forestry, & energy), and youth development. Additionally, ACNR will collaborate with the American Samoa Environmental Protection Agency (ASEPA) in recruiting a translator to teach the Pesticides Safety Training Course for Asian farmers as mandated by NIFA's "Persons with Limited English Proficiency" (LEP) policy. Moreover, there is a need for Extension Agents and Research Assistants with Bachelors and Masters Degrees. ACNR will explore opportunities through scholarships and professional development assistantship to help staff acquire degrees and build capacities. ACNR will seek opportunities for staff development training locally, in neighboring island nations, Secretariat of the Pacific Community (SPC) region, and the United States.

Communication Efforts:

ACNR will continue to publish and produce documents (reports, papers, power point presentations, posters, flyers, sandwich boards, banners) on the four planned programs. Moreover, ACNR will continue to use the social media and advanced technology and other avenues to publicize and promote program events and activities, raise awareness, and implement programs. Staff participation in conference calls and webinars will continue in 2017. Social Media will be used to obtain stakeholders input. Improved wireless service technology (iphone, ipads, or android) will be used to record statements, conduct surveys and assessments, and collect other important data. The Extension Program will develop a central database to compile the collected data and information from 4-H, Agriculture, Forestry, EFNEP, and Family and Consumer Sciences programs.

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	22.5	0.0	17.2	0.0
2018	22.5	0.0	17.2	0.0
2019	22.5	0.0	17.2	0.0
2020	22.5	0.0	17.2	0.0
2021	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 inputs. Owing to our limited number of staff, which serves a population of over 55,000, each Researcher and Extension Agent tries to match his/her knowledge, skills and expertise to high priority client concerns according to federal grant requirements. All Researchers have joint research-extension responsibilities, which also helps ensure research remains focused on addressing important community needs.

An investigator proposing a new research project is required to submit a project outline detailing the justification, objectives, procedures, and other pertinent information that would allow someone with relevant experience to adequately evaluate the proposal. The Research Coordinator then distributes this project outline to three or more appropriate scientists, extension professionals, or other staff within the college and to scientists and others with suitable expertise in other agencies. A cover letter explains the necessity for a merit review, lists three criteria by which to judge the proposal, and gives an assurance of anonymity. The three criteria are: 1. How important is the proposed activity to advancing knowledge and understanding of agricultural or health-related issues in American Samoa and other Pacific islands? 2. Is the project based on sound scientific principles? Are the proposal's arguments supported by verifiable facts? 3. Are sufficient resources available to bring the project to a successful conclusion? How well qualified is the individual or team to conduct the project? Are sufficient funds, facilities, equipment, and assistance available? The Research Coordinator collects the reviews and returns them to the investigator. The investigator may then choose to modify the proposal, based on the reviews, before resubmitting it to the Research Coordinator. The Research Coordinator accepts or rejects the proposal. If the latter, the investigator may appeal to the Director, who makes the ultimate decision. If the Research Coordinator accepts the proposal, it is forwarded to the Director for final approval or rejection.

Merit review of extension programs is an ongoing process. As described in the Stakeholder Input section, formal and informal solicitation of feedback is a part of extension workshops, activities, meetings, trainings, and farm visits. These inputs help Extension Agents and Program Managers assess the effectiveness of programs and identify ways to improve them. The Agriculture, Forestry, Family and Consumer Sciences, and 4-H Extension Program Managers oversee ongoing programs and evaluate new initiatives to ensure they are effectively addressing client needs. Annual performance reviews provide additional opportunities for Program Managers to evaluate programs and provide useful feedback to the Extension Agents. Ongoing programs and new initiatives must be approved by the Extension Coordinator and responsibility for final approval of all proposed extension activities rests with the Director.

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?

ASCC-ACNR will continue with existing programs and implement appropriate and relevant new ones to address the critical issues identified by stakeholders. Moreover, existing and new collaborations and partnerships with local, regional, national, and federal partners will be sustained to ensure that the critical issues identified by stakeholders are addressed.

Planned programs will be available to all residents and villages in Tutuila, Aunu'u, Swains, and the Manu'a islands. Appropriate formal and non-formal program delivery methods

will be used. Program activities will be conducted in both English and Samoan languages. Moreover, program materials will be translated into Samoan and other languages as requested and needed. Program evaluation will be conducted to determine if issues are addressed and to improve program.

Funding is needed to hire more qualified staff, provide staff development capacity building opportunities, build infrastructures, and purchase vehicles, equipment, materials, and supplies to effectively deliver programs to address issues identified by stakeholders and clients. Recruitment of Scientists, Specialists, and other professionals is a major challenge because of the salary gaps.

Partners

1. American Samoa Government Departments and Agencies
2. ASIST (American Samoa Invasive Species Team)
3. RC&D (American Samoa Resource Conservation and Development Council)
4. LeTausagi Environmental Group
5. NCD (Non Communicable Diseases) Coalition
6. ASCCC (American Samoa Community Cancer Coalition)
7. American Samoa Food Policy Council
8. CRAG (American Samoa Coral Reef Advisory Group)
9. ECE (Early Childhood Education) Policy Council
10. ASSWCD (American Samoa Soil & Water Conservation District)
11. Forestry Advisory Council
12. Catholic Social Services
13. Village Councils
14. Women's Groups
15. Youth Groups
16. 4-H Village Clubs
17. TAMM (Toe Afua Mai Matua) -Senior Citizens' Group
18. Women's Group Against Domestic Violence
19. Star Kist Samoa
20. SWCD (Soil and Water Conservation District)
21. NOAA (National Oceanic Atmospheric Administration)
22. NPAS (National Park of American Samoa)
23. NRCS (Natural Resources Conservation Service)
24. USGS (US Geological Survey)
25. CHL (Children Healthy Living Program) for Remote Underserved Minority Populations in the Pacific Region
26. PLGA (Pacific Land Grant Alliance)
27. IPIF (Institute of Pacific Islands Forestry)
28. PIC (Pacific Islands Forestry Council)
29. PII (Pacific Invasives Initiative)
30. SPC (Secretariat of the Pacific Community)
31. SPREP (South Pacific Regional Environmental Programme)
32. SMAF (Samoa Ministry of Agriculture and Fisheries)
33. Pacific Island Health Officers Association (PIHOA)
34. Western Plant Diagnostics Network
35. WFLC (Western Forester Leadership Council)
36. USAR (United States Army Reserve):Child, Youth and School Services (CYSS)

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

The target audience for the planned programs is all residents of American Samoa from children to senior citizens. Therefore, under-served and under-represented populations in American Samoa are included. Moreover, other ethnic minority groups (Polynesians, Asians, Caucasians, others) beside Samoans (majority) will be served. Program activities will be conducted in both English and Samoan languages. Moreover, program materials will be translated into Samoan and other languages as requested and needed. Also, the above mentioned minority groups and other underserved and under-represented populations will be encouraged to participate in stakeholders' inputs sessions for future program planning, implementation, and evaluation.

Planned programs will be extended to all villages in Tutuila, Aunu'u, and the Manu'a islands. ASCC-ACNR will collaborate with the Governor's Office, Manu'a and Swains islands Representatives and Senators, Office of Samoan Affairs, ASPA, DOE, DMWR, DPW, DPA, and others to assist with the surface and air transportation challenges to Manu'a and Swains islands.

ASCC-ACNR will collaborate with DOE's Special Education Division and DHSS's

Vocational Rehabilitation program to address program accessibility for the special needs population. Furthermore, ASCC-ACNR will collaborate with TAOA to address the needs of Senior citizens, and DYWA and other agencies to address youth and women's needs. Funding is needed to hire more qualified staff, provide staff development capacity opportunities, and purchase vehicles, equipment, materials, and supplies to effectively deliver programs to clients.

3. How will the planned programs describe the expected outcomes and impacts?

Planned programs accomplishment reports will include not only outputs but also changes in knowledge, actions/behaviors, and conditions as a result of the planned programs. Success stories with quantitative measures and qualitative descriptions of results will be used to describe the outcomes and impacts.

4. How will the planned programs result in improved program effectiveness and/or

Sharing of the vision, mission, goals, values, and especially resources (human, financial, and physical) among the collaborative partners will reduce costs and avoid duplication of efforts, thus resulting in improved program effectiveness and efficiency. For example, ASCC-ACNR's Plant Pathologist, Entomologist, Horticulturalist, Soil Scientist, Tissue Culture Specialist, Extension Specialists, and other staff will collaborate with local partners (GO, OSA, DOA, DMWR, DOC, ASPA, ASEPA, DHL, NRCS, NPAS, NOAA, DOH, DHSS, others), regional partners (SPC, SPREP, SMAF, others), and federal partners (NIFA, USDA, USFS, others) to address Food Security, Ecosystem (Climate Change, Energy, Invasive Species), and Human Health and Well Being planned programs.

Additionally, ASCC-ACNR will collaborate with local partners (DOE, DOH, OSA, GO, Church Denominations, Catholic Social Services, Village Councils, Women's Groups, Youth Groups, 4-H Village Clubs, others), regional partners (UAF, NMC, FAS, UOG, UH-Manoa, others), and federal partners (NIFA, USDA, others) to address Childhood Obesity under the CHL (Children Healthy Living Program for Remote Underserved Minority Populations in the Pacific Region) project and Youth, Families, & Communities planned program.

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
- Other (Focus groups)

Brief explanation.

All Extension Programs will be coordinated to have stakeholders feedback during or after workshops, activities and training for the community. Wherever and when our stakeholders 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.

One-on-one consultation, group meetings, and community workshops are some of the types of direct contact with Stakeholders in which they will be asked to evaluate the programs and make suggestions for needs and improvements after activities and workshops. The Stakeholders are expected to be from a wide range of groups/individuals who are traditional and non-traditional constituents, non-governmental agencies, community-based organization, and government agencies.

Social Media will be used to obtain stakeholders input. With improved wireless service around the territory, iphone, ipads, or android can easily be used to record statements, surveys, assessment or any form of data. The Extension Program will need to develop a central database to compile all the collected data and information from all the different Programs.

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.

ACNR 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 ACNR 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 ACNR Agriculture Extension 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 ACNR 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-ACNR 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, ACNR, 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 ACNR advisory group being the means to prioritize ACNR resources. Once the priorities have been determined, the information will be forwarded to ACNR 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 equipment and materials and supplies; improvement of existing programs and facilities; development and implementation of new programs; and construction of new facilities to address stakeholder inputs and recommendations.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Families, Youth and Communities
2	Food Security
3	Health and Wellness
4	Ecosystem

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Families, Youth and Communities

2. Brief summary about Planned Program

The 4-H Youth Development and Family Consumer Science (FCS) Programs will continue to serve the youth of American Samoa by providing educational workshops, programs, and camps for the families and youth. The 4-H Workshops and programs will assist the youth in acquiring knowledge and developing lifelong skills, forming positive adult relationships, and leadership experiences. In addition, the programs will continue to address the youth-at-risk issues. In order to reach the youths in the community, the 4-H and FCS staff will travel to the villages to deliver the programs. Most parents do not have time or means of transportation to take their children to the programs. Therefore, 80% of the programs will be delivered at the 4-H village clubs, church youth groups, and clubs in the schools. About 20% of the programs will be at the college campus. The existing programs include entrepreneurship, sewing, vegetable gardening, cooking, exercising, physical activity/playing games, farm animals, pets, swimming, hiking, fishing, biking, community service, carpentry, baking, computer, ipad and online activities and usage, arts & crafts, nutrition, childhood obesity, healthy food, healthy lifestyle, internet monitoring, farm safety, water safety, ATV safety, sewing, designing, camping, and traditional reading, singing, and dancing. Workshops will include topics on citizenship, parenting, home economics, Samoan culture, textile design, survival skills training (First Aid/CPR), volunteer development and retention, partnership/collaboration, wellness and healthy lifestyle education, physical education, animal farm/livestock, entrepreneurship, food security, STEM, forestry, and Samoan culture, and language/reading projects.

The long-term goal is for the youth to become self-reliant, productive and contributing members of society. The 4-H will continue to provide poultry and swine projects.

For community awareness, promotional items will be used to convey the program mission statement and educational messages. Extension will continue to take the programs to the villages, churches, community and schools. Promotional items such as posters, banners, cups, and t-shirts will be used as delivery methods for healthy and positive messages to the community and in the homes.

4-H and FCS workshops and activities are popular and the demand has increased throughout the years. There is a need to hire more professional and support staff. As of 2016, 90% of the staff have only Associate (AS/AA) degrees. There is also a need for safe reliable vehicles to transport staff and program materials/resources to the villages since 80% of the Extension programs are conducted in the community.

The Programs activities will continue to look at advanced technology and social media for announcements, promotional messages, feedback comments, and awareness. This will involve activities to develop skills in communication, technology, online safety, and parenting to monitor children's online activities. Currently there is no 4-H Foundation, therefore, the 4-H Foundation will be revived for it is a very important non-profit component in supporting the 4-H program.

3. Program existence : Mature (More than 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
724	Healthy Lifestyle	20%		0%	
801	Individual and Family Resource Management	30%		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	30%		0%	
	Total	100%		0%	

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

1. Situation and priorities

According to the 2010 Census, the population in American Samoa is 55,519. About 34.4% of the people are between the ages of 5 and 19. In 2000, the estimated number of family households was around 8,706 and about 72% had a child or children age 18 or under. In 2000, the median household income was \$18,219. About 50% of families were below the national poverty level. The local economy is 90% dependent on US and foreign imports, and average prices of selected commodities throughout the years have increased due to oil price increases and other factors. There is a need for families to manage resources wisely and take advantage of opportunities to maintain and increase their quality of life. There is also a need for children to be updated with educational information and resources that are available in the mainland US.

Parent and youth relationship is a critical issue in American Samoa. One of the major concerns is the lack of supervision of youth due to parents' busy schedules. In 2011, about 11% of birth mothers were between the ages of 15 and 19. The local Youth Risk Behavior Survey (CDC, 2011) found that 32% of high school students had sexual intercourse. Parents and youth need to find a balance between the traditional cultural lifestyle and the American lifestyle. The youth are facing difficulties in accommodating the American lifestyle and meeting the expectations of parents in relation to the Samoan culture. Therefore, learning opportunities should be provided for the youth to preserve the Samoan culture, language, and family values. At the same time, parents should be provided with resources to better

manage their families and understand the youth.

The school enrollment from school year 2008 to 2010 was about 22,000, but it decreased to 17,000 in 2011(DOC, 2011 Statistical Yearbook). The Youth Risk Behavior survey (CDC, 2011) indicated that 7% of students used a needle to inject an illegal drug, and 47% tried smoking cigarettes. Over the years, juvenile crimes have increased in American Samoa. About 52% of family, drug and alcohol cases filed were juvenile delinquents. The offenses committed by juveniles increased by 1.9% in 2011. About 13% for assault, 14% for burglary, 5% for robbery, 27% for disorderly conduct, 4% for property damage, 7% for runaways, 1% for weapons, and 26% for others. There is a great need to address youth-at-risk issues so the youth have a better chance of becoming productive, self-reliant and contributing members of society.

References

- American Samoa Department of Commerce. 2011 Statistical Yearbook.
- Centers for Disease Control and Prevention (2011). HIV, other STD, and Teen Pregnancy Prevention and American Samoa Students. Adolescent and School Health. Retrieved 03/04/2013 from http://www.cdc.gov/healthyyouth/states/territories/american_samoa.htm
- Centers for Disease Control and Prevention (2011). Tobacco Use and American Samoa Students. Adolescent and School Health. Retrieved 03/04/2013 from http://www.cdc.gov/healthyyouth/states/territories/american_samoa.htm

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
- Programs will continue to educate and promote a healthy lifestyle
- Programs will to continue to educate and promote safety

2. Ultimate goal(s) of this Program

- To improve learning for youth through innovative programs and workshops.
- To improve health education for youth in relation to healthy eating, obesity, physical fitness, early pregnancy and substance abuse.
- To improve safety education in all areas, e.g., farm, water, ATV, seat belt, boat, natural disaster
- Assist youth to develop life skills that can lead to long-term employment and economic self-sufficiency, and provide opportunities to connect with adults and peer mentors.
- Strengthen families through participation in educational and recreational activities.
- To develop a sense of understanding and appreciation of the Samoan culture and language.
- To reduce at-risk behaviors and to enhance their potential for becoming productive members of society.

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
2017	6.0	0.0	5.0	0.0
2018	6.0	0.0	5.0	0.0
2019	6.0	0.0	5.0	0.0
2020	6.0	0.0	5.0	0.0
2021	6.0	0.0	5.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The Extension Programs will continue to work with families and youth in the community through school and after-school programs, camps, summer sessions, site visits, presentations, workshops and trainings. Some of the activities include vegetable gardening, cooking, exercising, playing games, teamwork, ice-breakers, youth conferences and meetings, animal farm, pets, swimming, hiking, fishing, biking, community service, carpentry, baking, computer, ipad and online activities and usage, Arts & Crafts, Games, Nutrition, Healthy Food Demonstration, Healthy Lifestyle, Internet Monitoring, Farm Safety, Water Safety, ATV safety, Sewing, Designing, Camp planning and set-up, Traditional reading, singing, and dancing. Workshops will include topics on Citizenship, Parenting, Home Economics, Samoan Culture, Textile Design, Survival Skills Training (First Aid/CPR), Volunteer development and retention, Partnership Collaboration, Wellness and Healthy Lifestyle Education, Physical Education, Animal Farm/Livestock, Entrepreneurship, Farm and ATV Safety workshop, Food Security, STEM, and Forestry.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Competitions) ● Other 2 (Summer programs) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● Other 1 (Brochures/Handouts) ● Other 2 (videos)

3. Description of targeted audience

The targeted audiences are families and youth in American Samoa.

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 group educational workshops and program activities conducted.
 - Number of youth who participated in educational workshops and program activities.
 - Number of adults that participated in educational workshops and program activities.
 - Number of volunteers that participate in professional development workshop.
 - Number of camps
- 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	% of youth who increase knowledge of life skills concepts and practices.
2	% of youth who were able to acquire knowledge for positive self-development.
3	% of participants who developed new life skills due to all the Program activities.
4	% of program participants who have improved parent and children relationship through educational and recreational activities.

Outcome # 1

1. Outcome Target

% of youth who increase knowledge of life skills concepts and practices.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

% of youth who were able to acquire knowledge for positive self-development.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

% of participants who developed new life skills due to all the Program activities.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

% of program participants who have improved parent and children relationship through educational and recreational activities.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

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: 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
Lack of transportation to the Manu'a islands

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Pre/Post tests
Needs Assessments
Accomplishment reports
Enrollment forms
Visitation reports
Focus group sessions
Annual surveys by ASCC ACNR 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

Food Security

2. Brief summary about Planned Program

The projects included in the Food Security planned program are aimed at helping subsistence and commercial farmers increase yields and maintain sustainability.

New varieties of high-yielding, disease-resistant, and nutritious vegetables and traditional crops will continue to be imported, multiplied, evaluated, and distributed to farmers so as to reduce costs of inputs and maximize returns. Because of American Samoa's tropical conditions, favorable to pests and diseases, there is an ongoing need for evaluation of vegetable and other crop cultivars for pest, disease and heat resistance, yield and quality.

Due to the continuing threat of taro leaf blight disease and the potential for introduction of new taro diseases and pests, along with changing environmental conditions, a taro improvement program is needed. ASCC-ACNR-developed, improved taro varieties will be crossed with traditional taro varieties which are of favored eating quality but leaf blight susceptible. Newly produced varieties will be evaluated for disease and salinity resistance, yield, and eating quality.

In American Samoa, several food crop production systems rely upon soilless growing media. To reduce the amount of imported, non-renewable peat-based media, locally-sourced alternatives such as composts, coconut coir and fish meal will be evaluated as replacements.

With its tropical climate and geographic remoteness from other U.S. states and territories, American Samoa faces unique pest problems and is highly susceptible to adverse impacts from accidentally introduced exotic invasive species. ASCC ACNR plant clinic service will continue to provide pest diagnoses and management recommendations, and the entomology program will continue to work with the local Department of Agriculture to conduct surveys for early detection of exotic pest threats.

Small Scale Chicken Farming - The introduction of small chicken farms in the interest of food security is an ongoing project. Depending on farmers' abilities, three options are made available with various improvements on the current backyard style of raising chickens:

i) Free range: same as current system, but with provision for some form of shelter, boxes for egg laying, egg collection and raising chicks, and improvement in feed and feeding conditions.

ii) Semi-Intensive: birds will roam the field within a fenced area but will be housed in a building overnight; laying boxes, roosting rods, feed and water containers will be within the building. This is the agreed upon model project for ASCC-ACNR and building drafts are in the process, in a collaboration with the ASCC Trades and Technology Division.

iii) Intensive - commercial based system where broilers (or layers) are raised indoors on commercial feed until marketing.

Piggeries - Inbreeding of swine is a serious cause of concern, since it results in low productivity when no new blood is introduced. Improvements in breeding genetics and propagation can be quickly achieved through the importation of improved breeds and artificial insemination (AI). The importation of new stocks (gilts and boars) is a concern issue and not recommended by the local Quarantine office. Therefore, the program will focus on use of AI to improve breeds on island. Currently, there are no certified swine technicians for artificial insemination, but possible training of at least two personnel in the near future may be in the pipeline. In addition, improvements in physical facilities and management may reduce losses and wastes as well as reduce weaning time, thus early estrous cycles.

The use of Pig Starter feed has greatly improved weight gain in piglets, reduced suckling time as well as reduction in piglet diarrhea. This will enable the sows to recycle earlier. The need to reduce piglet

deaths from being crushed has resulted in discussions and plans to provide two (2) kinds of portable creep area fences for trial before submitting a recommendation. The provision of feed troughs for all pens will greatly reduce feed wastes and prevent wetting the deep litter.

Slaughter block/Examining room/Office - Improving slaughter of culled animals on campus requires a building with sinks, hot water and crane for raising the carcasses. The expected arrival of chemicals, drugs, tools and equipment necessitates the ordering of a refrigerator and aircon-in process for proper storage; an adjacent office with computers will facilitate the implementation of the livestock extension part. A cemented foundation with roofing for the wood chipper at the piggery is needed.

Aquaculture is one of the fastest growing sectors of agriculture globally (FAO 2014) and is capable of alleviating depleted fisheries and feeding the masses. Freshwater species constitute the majority of species cultured, with tilapia species being the most widespread type of aquaculture in the world and ranking among the top ten producers in terms of quantity (FAO 2012). Tilapia's growth characteristics make it an ideal candidate for culture in resource limited areas such as American Samoa (Rakocy et al. 2000), where best management practices will improve nutrient utilization and overall productivity, particularly in aquaponic systems (Edwards 1980; McMurty et al. 1997), which present an opportunity to produce value added products such as lettuce and herbs. On the other hand, mariculture operations offer greater profit margins (Carrol et al. 2005; Forster et al. 2005), opportunities for stock enhancement projects of the near shore coastal reef communities (Welcomme and Bartley 1998), and can be used to increase awareness of the marine environment (DaSilva 2000). 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 (Pillay and Kutty, 2005). The environmental conditions in American Samoa are ideal for culturing both marine and freshwater tropical fish and invertebrates. Additionally, the availability of fishmeal from a local tuna cannery makes the formulation of low-cost feeds for aquatic organisms feasible in order to reduce a major portion of operational expenses. Feed production facilities, a tilapia breeding program, and aquaculture demonstrations are housed in the Center for Sustainable Integrated Agriculture and Aquaculture at the American Samoa Community College. Support for the Aquaculture Program 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.

The Extension Agent will focus on combining research, teaching and extension activities as well as collaboration with governmental and nongovernmental agencies to address the needs of the aquaculture community, college students, government agencies, and ocean data users. Continued 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.

Food safety issues are major concerns in American Samoa. ACNR will increase public awareness about food safety at home, in the workplace, churches, and village functions. ACNR staff will develop procedures and conduct food safety workshops with demonstrations such as correct hand washing to help prevent food-borne illnesses. Furthermore, policies related to food-borne illnesses will be created. ACNR staff will distribute food safety procedures, publications, brochures, and education materials to public, private, and government sectors in American Samoa. Additionally, ASCC ACNR will collaborate with the DOA, DOH, DOE, LBJ, ASPA, EPA, and other government agencies and non-government organizations (village councils and churches) to help plan, develop, and implement programs to address food safety issues in American Samoa.

The number of Foreign farmers have increased throughout the years, and one of the main issues identified during workshops is the lack of a translator for the foreign speaking farmers. All of the workshops are conducted in Samoan and English.

One of the challenges we encountered internally is the lack of professional staff. There is a need for Agents with Bachelors and Masters degrees. There is also a need for international travel within the Pacific

for Professional Development. Neighboring nations and islands can provide training and resources due to close proximity and having the same issues regarding food, agriculture, environment, climate change, pests and diseases, health and culture.

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3. Program existence : Mature (More than 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
102	Soil, Plant, Water, Nutrient Relationships	5%		10%	
111	Conservation and Efficient Use of Water	5%		0%	
202	Plant Genetic Resources	5%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		5%	
205	Plant Management Systems	5%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		0%	
212	Diseases and Nematodes Affecting Plants	5%		10%	
215	Biological Control of Pests Affecting Plants	5%		10%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	10%		15%	
308	Improved Animal Products (Before Harvest)	5%		0%	
315	Animal Welfare/Well-Being and Protection	5%		15%	
401	Structures, Facilities, and General Purpose Farm Supplies	5%		5%	
403	Waste Disposal, Recycling, and Reuse	5%		15%	
601	Economics of Agricultural Production and Farm Management	5%		5%	
604	Marketing and Distribution Practices	5%		0%	
703	Nutrition Education and Behavior	3%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	3%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	4%		0%	
903	Communication, Education, and Information Delivery	5%		0%	
	Total	100%		100%	

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

1. Situation and priorities

Leaf blight-resistant taro cultivars will continue to be imported from SPC/CePaCT as tissue culture plantlets, which will then be micropropagated, multiplied, evaluated, and released to farmers. As part of our taro breeding program, crosses will be made between elite taro cultivars in order to develop cultivars that are high-yielding, disease-resistant, nutritious, and good-tasting. Both the importation and breeding of new cultivars aim at broadening the genetic base of taro production in American Samoa.

In order to avoid the resurgence of the taro leaf blight epidemics that destroyed taro production in American Samoa in the early 1990s, surveys of the different isolates of the pathogen, *Phytophthora colocasiae*, will be conducted frequently so as to detect any changes in the virulence of the isolates as soon as they appear.

Plant clinic services for extension agents, farmers, and the general public provide pest diagnoses and control recommendations, and pest detection surveys with the local department of agriculture help ensure early detection of exotic invasive pests.

We will continue with 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. To increase the production of locally produced nutritious vegetables in American Samoa, RCBD trials of vegetable cultivars from areas with climates similar to ours will be conducted. Evaluation will be for pest, disease and heat resistance and high yield and quality.

For the fruit industry, the priority will be to introduce 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 effecting an import replacement scheme for the Territory. Extension 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.

Extension staff will continue to demonstrate to farmers the three pig waste management options that were approved by ASEPA.(1) The portable pigpen that will accommodate up to two large pigs,(2) the dry litter technology (DLT) system (using a 6% sloped floor and wood chips to compost the manure), and (3) 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 help local pig farmers bring their operations into ASEPA compliance. Agriculture Extension will continue to assist pig farmers if they adopt any of these systems that will bring their swine operation into compliance with the local laws.

a) Small Scale Chicken Farm: the CNR demonstration project is ongoing and will continue to make improvements.

b) Pigs: Most pigs are fed on the floor by the "dumping method", whether using local or commercial feed.

- Will continue to make improvements in physical facilities such as creep areas, feed troughs to prevent food waste and liquid used in food from wetting deep litter.
- Provide water troughs for piglets which cannot reach the water nipples
- Assist farmers in the proper use of Starter Feeds if they want
- Training on proper pig management at different levels and mange control workshops both in the classroom and field

To reduce the amount of imported peat-based growing media and encourage the use of locally sourced alternatives, combinations of coconut husk coir/fiber/chip, composted dry litter piggery waste and fishmeal will be evaluated as alternative growing media.

Food Safety is a timely issue. While many people in American Samoa take food safety for granted, the incidence of food-borne illnesses have increased over the last few years. According to the ASG Department of Health, there were 37 reported cases of food poisoning in American Samoa from 2009 - 2011. However, no information is available from the previous six years due to data not being reconciled completely by the source. Though quantitative data is limited, anecdotal reports seem to support these claims. Many food handlers have limited food safety knowledge and often practice poor sanitation measures, which is probably linked to many food borne illnesses. Consequently, our goals include increasing the food safety knowledge of food handlers, adopting safe food handling practices, and decreasing the probability of food-borne illnesses in high-risk population groups.

A demand of about 170,000 pounds of tilapia exists in American Samoa (Cheshire, 2004). Major challenges on island include identifying an economical solution to procuring aqua-feeds, identifying new aqua-farmers, assisting new farmers in procuring start-up funding for their farms, and reducing agricultural pollution.

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. As a result, their fish survive on feeds of poor nutritional content and farm production is sub optimal. ASCC-ACNR has worked with UH Sea Grant to establish 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. Farmers will be able to use locally available feedstuffs like taro, breadfruit, bananas, and fishmeal to produce feeds. Improved nutrition will increase farm production.

Interested residents quickly lose interest when they learn start-up funding is not readily available to them through Land Grant-ACNR or UH Sea Grant. Of 425 workshop attendees in the past 5 years, only 8 have reported beginning their own aquaculture farms.

The American Samoa Environmental Protection Agency has identified escaped fish from tilapia farms as a potential source of negative impact on the natural biotic balance in local rivers and streams. ACNR will provide technical support to help tilapia farmers avoid fish escapes.

ACNR will recruit a food scientist to lead research efforts to improve food security and enhance economic development through more efficient utilization of agricultural products, improved safety of food products from the farm to the table, and increased capacity for production of added-value agricultural products.

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

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
 Programs that we will implement are what the clients/farmers need to improve their operations.
 ACNR will recruit qualified personnel necessary to maintain its activities.
 Funding and personnel will remain adequate to complete the work and institutional cash flow will remain sufficient for procurement of equipment and supplies
 Interagency collaborations will continue.
 Farmers will want to improve their operations and will participate in the programs made available to them.
 Farmers will invest time and money to improve their operations.
 Overall priorities will not change

2. Ultimate goal(s) of this Program

- To increase production and marketing of crops, livestock (poultry & swine), and farmed fish.
- To reduce farming costs and increase returns, while improving sustainability and protecting the environment and human health.
- To improve crop quality and food security through pest and disease monitoring and crop genetic diversity.
- To provide early pest detection, accurate diagnoses, and environmentally-sound options for management of pests.
- To improve public understanding of agriculture, aquaculture & marine science, including their impacts on the land and sea.
- To develop policies that address food safety issues.
- To increase the number of aqua-farmers and volume of aqua-farmed products.
- To encourage use of growing media produced from locally sourced organic materials.
- To reduce the incidence of food-borne illnesses
- To increase production of locally produced vegetable crops
- To increase production of locally produced taro

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
2017	8.0	0.0	5.0	0.0
2018	8.0	0.0	5.0	0.0
2019	8.0	0.0	5.0	0.0
2020	8.0	0.0	5.0	0.0
2021	8.0	0.0	5.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The Extension agents will continue to conduct community workshops, school programs and farm visits to

provide educational information, demonstrations and activities on the program developments. Listed are the planned projects, activities and workshops for the planned programs:

1. Import, micropropagate (tissue culture), multiply, evaluate, and distribute improved taro and vegetable cultivars to farmers.
 2. Identify vegetables and varieties that have potential to perform well in American Samoa.
 3. Conduct RCBD field trials to evaluate for disease/pest resistance, heat/rain tolerance and yield.
 4. Perform crosses of elite taro cultivars and evaluate progenies for yield, disease resistance, and taste.
- Collect or import, multiply, and distribute improved fruit tree varieties.
5. Conduct vegetable and fruit tree workshops.
 6. Provide plant clinic diagnoses and recommendations for diseases/pests management.
 7. Conduct surveys of isolates of *Phytophthora colocasiae*.
 8. Conduct pest surveys
 9. Conduct biological control studies of economically important pests
 10. Provide technical support with nuisance bee problems and apiculture
 11. Develop food safety policies & procedures
 12. Implement food safety, sanitation, and protection practices.
 13. Conduct pesticides safety and farm safety trainings.
 14. Conduct farm visitations and demonstrations
 15. Develop public awareness.
 16. Produce and evaluate growing media of locally sourced materials as alternatives to peat and mined top soil.
 17. Conduct workshops to present locally produced growing media to farmers.
 18. Maintain Center for Sustainable Integrated Agriculture and Aquaculture
 19. Provide technical assistance on production, disease, and nutrition issues to aquaculture farmers
 20. Conduct workshops on aquaculture, including integrated practices such as aquaponics and tilapia-cum-pig systems.
 21. Reduce inbreeding of farmers' animal operations - buying/selling or trading of stock, boar services, artificial insemination, training in feeding management, mange control and improvement in facilities.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Plant Clinic Diagnoses) ● Other 2 (Farm visits, public meetings,) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● TV Media Programs ● Other 1 (Brochures, Newspapers articles) ● Other 2 (videos, PSAs)

3. Description of targeted audience

Targeted audiences include small and resource-limited farmers, commercial farmers, aquaculture farmers, forestry clients, hobby farmers, potential farmers, general public, school students, 4-H members, church youth and other community group members.

All residents of American Samoa are included in the target audience, which includes: 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 cultivars of disease resistant taro and improved varieties of sweet potato multiplied and released.
- Number of improved taro setts 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 Tilapia released from breeding program.
- Pounds of Tilapia feed produced at ASCC feeds lab.
- Number of farmers participating in the small scale chicken farms program/project
- Number of isolates of *Phytophthora colocasiae* collected and tested for virulence.
- Number of crosses of taro cultivars performed and number of new cultivars evaluated.
- Number of group educational sessions conducted.
- Number of research-related projects
- Number of one-on-one technical assistance/consultations.
- Number of pest surveys completed in collaboration with local Department of Agriculture.
- Number of farmers that participated in locally produced growing media workshops.
- Number of vegetable cultivars evaluated.
- 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 clients targeting problems according to recommendations on plant clinic form.
2	Number of farmers/clients growing improved varieties of crops, fruit tree, genetic stocks, or upgrading livestock.
3	Number of farmers/clients who gain knowledge in Farm Safety and Pesticide while attending workshops and trainings.
4	Number of farmers making their own tilapia feeds.
5	Number of farmers switching from use of peat or mined topsoil to locally produced soilless growing media.
6	Number of pest species for which presence or absence in American Samoa was determined
7	Number of virulence groups identified among isolates of Phytophthora colocasiae and number of isolates in the most virulent group.
8	Number of high-yielding, disease-resistant, and good-tasting hybrid taro cultivars/lines released to farmers.
9	Number of farmers that report increased knowledge of best management practices to improved quality and profitability.
10	Number of recommended vegetable cultivars adopted by farmers.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of farmers/clients growing improved varieties of crops, fruit tree, genetic stocks, or upgrading livestock.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 215 - Biological Control of Pests Affecting Plants
- 202 - Plant Genetic Resources
- 308 - Improved Animal Products (Before Harvest)
- 205 - Plant Management Systems
- 604 - Marketing and Distribution Practices

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of farmers/clients who gain knowledge in Farm Safety and Pesticide while attending workshops and trainings.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 212 - Diseases and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 903 - Communication, Education, and Information Delivery
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of farmers making their own tilapia feeds.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of farmers switching from use of peat or mined topsoil to locally produced soilless growing media.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 111 - Conservation and Efficient Use of Water
- 102 - Soil, Plant, Water, Nutrient Relationships
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of pest species for which presence or absence in American Samoa was determined

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of virulence groups identified among isolates of *Phytophthora colocasiae* and number of isolates in the most virulent group.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Research

Outcome # 8

1. Outcome Target

Number of high-yielding, disease-resistant, and good-tasting hybrid taro cultivars/lines released to farmers.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 212 - Diseases and Nematodes Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 9

1. Outcome Target

Number of farmers that report increased knowledge of best management practices to improved quality and profitability.

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
- 601 - Economics of Agricultural Production and Farm Management
- 307 - Animal Management Systems
- 703 - Nutrition Education and Behavior
- 205 - Plant Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 10

1. Outcome Target

Number of recommended vegetable cultivars adopted by farmers.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 202 - Plant Genetic Resources
- 102 - Soil, Plant, Water, Nutrient Relationships

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 earthquakes, tsunami, hurricanes, drought, and other natural disasters hitting American Samoa

Loss of staff reducing 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 ACNR policies detrimental to planned programs

Unresolved experiment station land boundary issues

Inability to use funds because of procurement processes and procedures.
Lack of transportation to the Manu'a islands.
Natural disasters and weather affecting research and extension.
Competing public priorities and competing programmatic challenges affecting staff time.
Inability to use funds because of procurement processes and procedures making it impossible to conduct research and extension.
Natural disasters affecting research.
Delays in accessing funds due to procurement procedures delaying or prohibiting purchase of equipment and supplies.

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.

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

Description

Formal activities, such as workshops and courses, will be evaluated with exams before and after each event. Informal activities, such as tours, will be evaluated via verbal group interviews and follow-up emails with teachers. Quantitative feeds and breeding program data will be collected as production ensues.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Health and Wellness

2. Brief summary about Planned Program

The prevalence of obesity among 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 for multiple reasons, some of which include: fast food restaurants use pervasive advertising; small neighborhood grocery stores have a limited availability of healthy food choices; public parks are not conducive to informal physical activities, and the environment is automobile-centrally built. Together with collaborators from the University of Hawai'i and other Pacific 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, and sustainably grown local fruits and vegetables as well as increased consumption of water. Additionally, we will promote locally grown produce and caught seafood, while discouraging overconsumption of sugar sweetened beverages, imported red meat and processed food. We will provide guidance so that individuals and families can make informed, science-based decisions about their health and well-being.

The Family & Consumer Science (FCS) and 4-H programs will continue to promote an active lifestyle among the people of American Samoa through workshops and activities that are proven and culturally acceptable physical exercise interventions. The 4-H Youth Development Program & EFNEP - Expanded Food and Nutrition Education Program will continue to provide health education for youth & parents related to healthy eating, obesity and physical fitness. We will continue to support all partners and programs and collect stakeholders input to determine the needs of the program and how it is impacting the clients and community.

The ASCC Agriculture, Community and Natural Resources Division and Human Resources proposes the following initiative for the College "Employee Fitness/Wellness Program", as part of an important strategy towards an increased awareness of the value of a fit lifestyle and the easy, everyday choices that can be made to accomplish this goal. This initiative is committed towards increasing employee awareness of, and commitment to, the four pillars of a healthy lifestyle: physical activity, nutrition, healthy choices, and prevention. Research indicates that exercise has a role in the treatment and prevention of more than 40 chronic diseases including diabetes, heart disease, obesity and hypertension.

The health communications and media section of ACNR works in close collaboration with other components of the health and wellness program. Research based and data driven health communication strategies will continue to be developed and employed in conjunction with other forms of interventions to help positively inform, promote and affect healthy choices that will reduce obesity and associated non communicable diseases in American Samoa. Such strategies incorporate social marketing techniques, all forms of media, sensitivity and understanding of target audiences' motivations, cultural values and beliefs in relation to health, the body, food, social relationships, the extended Samoan family, and the land. We use a socio-ecological model as the overall framework for understanding the health communications environment for which health communications are designed. Posters, banners, billboards, newspaper ads, radio spots, television PSAs and a regular television series with weekly public television broadcast tentatively titled "Making Healthy Choices" ("Filifiliga mo Soifua Maloloina"), and other forms of media will be designed, produced, disseminated, and evaluated. At the same time, a longer term documentary project about American Samoa's contemporary life style health related issues, causes and solutions, will also be developed for production. The work will also be connected with relevant activities of the Food Security Program, such as the promotion of healthy locally produced food and the Expanded Food and

Nutrition (EFNEP) Programs. Partnerships will continue to be developed with local government such as the Department of Health, the Department of Human and Social Services, the Office of Public Information (KVZK-TV), Department of Education, and non-government entities, such as the local cell and cable providers, the local newspaper, and other local media producers, to develop, implement and evaluate the impact on outcomes of these life style related media campaigns, A system of sharing and developing information and culturally appropriate locally effective approaches to health communications in the Pacific will be developed in conjunction with appropriate organizations of neighboring Island countries, such as Samoa, Tonga and Fiji, who also suffer increasing levels of obesity and other lifestyle related diseases.

The people of American Samoa are at risk from a number of mosquito-borne diseases, including lymphatic filariasis and several arboviruses. Although a community-level eradication program has reduced filariasis incidence dramatically, continued monitoring is essential to guard against resurgence of this parasitic disease. Dengue outbreaks occurred in the territory in 2002, 2007, 2008-9, and 2015, and ongoing outbreaks in nearby island countries could spread to American Samoa. Other arbovirus threats have arisen recently with outbreaks of chikungunya and Zika viruses occurring in American Samoa for the first time in 2014-15 and 2016, respectively. It is difficult to estimate total number of people affected during these arbovirus outbreaks, but a 2010 territory-wide serosurvey indicated that over 95% of the population had experienced a dengue infection at some point in their lives. In addition to their role as carriers of disease, mosquitoes can be a severe nuisance, sometimes limiting residents' outdoor activities. ASCC ACNR seeks to help improve mosquito control and disease monitoring efforts in the territory by collaboratively working to answer key questions concerning the biology, monitoring, and control of mosquitoes in American Samoa. Extension and education efforts provide the community with science-based information supporting activities to reduce the threat of mosquito-borne illnesses.

3. Program existence : Mature (More than 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	40%		30%	
721	Insects and Other Pests Affecting Humans	10%		20%	
722	Zoonotic Diseases and Parasites Affecting Humans	10%		10%	
724	Healthy Lifestyle	40%		40%	
	Total	100%		100%	

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

1. Situation and priorities

Based on the CDC American Samoa Youth Risk Behavior Survey in 2011, 39% of high school students are obese. The unhealthy dietary behaviors include 10% of students did not eat fruit , 9% did not eat vegetables, and 21% drink a can, bottle or glass of soda three or more times per day. For physical inactivity, 29% did not participate in at least 60 minutes of physical activity on any day and 26% used computers 3 or more hours per day on an average school day.

In 2000, 12.0% of boys and 11.5% of girls aged 2 to 5 had a body mass index (BMI) &ge 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 aged 6 to 11 had a BMI &ge the 97th BMI percentile compared to 16.3% of boys and 12.6% of girls in the US. Experts agree that when interventions are applied early in life, there is a greater chance that the child will remain at a healthy BMI as he or she ages. Preventing and reducing the high rates of obesity in American Samoa is a very high priority. Even small weight losses in an overweight or obese individual can make a medical difference for developing a disease such as Type 2 Diabetes or heart disease. It is imperative to reverse childhood obesity now because it is linked to many non-communicable diseases that require costly and long-term treatment in adulthood. Prevention requires a coordinated effort to develop and implement policy that builds healthier environments (that is, environments that facilitate and encourage healthy choices), along with health communication and media social marketing in concert with other types of face-to-face intervention programs to affect healthy daily lifestyle choices in the population.

American Samoa is home to mosquito species capable of transmitting important human diseases such as filariasis, dengue, chikungunya, and Zika virus, as well as other viral diseases. In addition, mosquito populations often reach levels that can be a serious nuisance. Increased knowledge about mosquito biology can be used to help reduce mosquito-borne diseases and nuisance mosquito problems which can affect everyone living in or visiting American Samoa. Previous research done in American Samoa and elsewhere has documented the efficacy of mass drug administration to reduce filariasis and suggested the value of mosquito source reduction for dengue prevention. Additional efforts are needed to educate the public about filariasis and dengue prevention and to develop better ways to monitor and control the mosquitoes that carry these diseases. Research and extension priorities will depend in part on changes in the incidence of mosquito-borne diseases in the territory, but will focus primarily on monitoring and control research and education about the species most important as carriers of dengue and filariasis in American Samoa.

American Samoa leads the world in obesity, diabetes, and some forms of cancer. The ASCC Wellness Center was opened in 2013 to meet an important community need. The Wellness programs and research are now being developed in conjunction with medical and fitness certified personnel to promote healthy lifestyles and decrease premature morbidity and mortality. This is being done in cooperation with the governance of the American Samoa Community College and other government and non-government agencies. Nutrition education and health communications and supportive media is an important dimension of this program. Filling the currently vacant Exercise Physiologist position is an urgent priority for these programs.

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

In order to have the greatest opportunity for success, consultations with parents, school teachers, healthcare providers, church ministers, and government policymakers should be completed. This will allow us to design and deliver culturally acceptable dietary and physical activity interventions and health communications for children 2 to 8 years old and for caregivers and the population as a whole. A Wellness Center has been established at the American Samoa Community College to support the development of a viable Wellness Program. There is a need for an Exercise Physiologist and other trained personnel to further develop the program. A cooperative network of health, education and medical personnel has been developed to foster the effective use of the Wellness Center. In addition, equipment and supplies are needed to enable research and extension activities to be completed. Knowledge about the biology of disease-carrying mosquitoes can be used to devise suitable management measures for them. Communities play an important role in implementing management measures.

2. Ultimate goal(s) of this Program

The ultimate goal of the wellness programs for children is to minimize children's vulnerability to contracting a non-communicable disease (NCD) in adulthood. Our hope is that children will make healthful food choices, consume adequate nutrients without overconsumption, and engage in regular physical activities to balance energy intake versus energy output. This will minimize their susceptibility to entering adulthood overweight or obese, which increases their likelihood of developing an NCD.

In addition, a cooperative program will be developed with physicians at the local hospital and Department of Health Community Health Centers to refer at-risk and overweight children to the ASCC-ACNR Wellness Center, where a health action-plan will be developed and implemented by the trained health and wellness staff and monitored by a Physician/medical professional.

Mosquito research and extension aims to generate and disseminate knowledge which can enable community and individual actions to reduce the toll of mosquito-borne disease on the health of American

Samoans.

Health communications and media will be responsible for developing media and other forms of communication that promote understanding and the necessary action steps to reduce all of these health and wellness problems in American Samoa.

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
2017	4.0	0.0	4.0	0.0
2018	4.0	0.0	4.0	0.0
2019	4.0	0.0	4.0	0.0
2020	4.0	0.0	4.0	0.0
2021	4.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

ASCC ACNR Extension agents will continue to promote healthy living through outreach workshops and program activities in the schools and communities.

During 2014 - 2015 a number of media based interventions to increase knowledge and awareness of obesity as a health issue, as well as measures to promote healthy behaviors to reduce overweight and obesity in American Samoa were piloted and are currently being evaluated. This included the broadcast of the HBO and CDC produced series, "The Weight of the Nation" on the local government run KVZK-TV television station, and also 600 durable, large, bi-lingual, laminated placemats for use in American Samoan households with children that promote six healthy daily behavioral targets: 1) drinking clean water, 2) reducing consumption of sugar sweetened beverages, 3) eating fruits and vegetables, 4) doing physical activities/exercise, 5) reducing sedentary time watching screens (television, computers, video games, etc). and 6) getting enough sleep. The concept was to have a visual health communications medium that would be repeatedly viewed in the home at an important point of decision - the eating table, to influence healthy behavioral choices. Other ways that the program is testing delivery of these messages has been through banners and flyers.

ASCC ACNR will continue to research the biology and control of disease-carrying mosquitoes and communicate results via research reports, brochures, seminars, TV, and individual contacts with other agencies.

A "Referral Program for Overweight Children" from the LBJ Tropical Medical Center and Department of Health Community Health Centers - Pediatric Physicians to the ASCC Wellness Center; an American Samoa Community College "Employee Wellness/Fitness Program" and an "Exercise is Medicine" program will be established and implemented at the American Samoa Community College, Department of Agriculture, Community and Natural Resources. Collaboration and support of partners will continue. More staff will be trained and certified.

Several media based interventions to increase knowledge and awareness of obesity as a health issue, as well as measures to promote healthy behaviors to reduce overweight and obesity in American Samoa

were piloted in 2014 - 2015 and are currently being evaluated. The first project was production of two different posters that promote the growing and consumption of the highly nutritious and easily grown edible hibiscus (laupele), a green that is already grown and eaten by an unknown percentage of the local population. They were displayed in public spaces of schools and hospital waiting areas. New posters with other designs are currently under production.

The second project involved the production and distribution of flyers, sandwich boards, and banners, along with the durable laminated placemats mentioned above, that promote six healthy behavioral daily targets for: 1) drinking clean water, 2) reducing consumption of sugar sweetened beverages, 3) eating fruits and vegetables, 4) doing physical activities/exercise, 5) reducing sedentary time watching screens (television, computers, video games, etc.), and 6) getting enough sleep. Two prototype tables that could be replicated for school cafeterias or other sites were also designed, built and displayed at a health fair.

The third project involved getting the rights from HBO to broadcast the HBO and CDC produced series, "The Weight of the Nation" (TWOTN) on the local government run KVZK-TV television station. The Weight of the Nation was developed and implemented in the USA as a major multi-partner effort to increase U.S. national public awareness and understanding of the rising epidemic of obesity and its health consequences in the USA and to promote healthy lifestyles and environments conducive to them.

American Samoa represents a very different cultural, environmental, and social context from the USA, but the issues of obesity and its environmental and lifestyle causes and medical consequences presented in the series are of utmost relevance to the situation in American Samoa.

Two health communication research projects were developed and initiated in 2015 related to the above extension work in ACNR's health and wellness program. These both involve evaluation of the media based extension projects and formative research to gain more information about American Samoans' knowledge, attitudes and behaviors about lifestyle related illnesses.

The first project (SAM-044) involves a random survey of households on American Samoa's main island of Tutuila. This research aims to gather and analyze information about the reach and effect of the TWOTN broadcast in American Samoa, target audience communication channels, attitudes and perceptions about obesity and its health consequences, and lifestyle behaviors and health perceptions. Such audience segmentation data will inform future development of health communications, media and social marketing efforts to promote healthy lifestyles in culturally and linguistically appropriate ways in American Samoa. This study also measures the extent to which people of American Samoa know about edible hibiscus (laupele) as a healthy, nutritious vegetable, and the extent and frequency to which they grow and eat the vegetable. This information helps assess the effect of the posters and ACNR's extension work in laupele.

The second health communications research project produced 600 durable, large size, bi-lingual, laminated placemats bearing the six healthy behavior target messages for use in American Samoan households with young children. A focus group was implemented in the community to assess the visual elements and layout for the design of the placemat. A short film was produced that features an American Samoan family using the placemat while discussing the healthy habits. This program will be shown on local television and at workshops conducted under the Early Childhood Education program in which the placemats will be distributed to caregivers. Follow up visits will be made at the families to see and evaluate the impacts the placemat on behaviors at home in the families, particularly on small children.

In 2017 the above two health communication projects will be completed and scholarly articles concerning the effectiveness of these strategies will be initiated, drafted, and submitted to peer reviewed academic journals. A third health communications project will be initiated and completed in partnership with the local hospital prenatal clinic and with researchers from Yale University and University of North Carolina to promote understanding and knowledge of gestational diabetes and increase women's screening for and proper management of this condition. Pre-assessments and post-assessments will be done to measure the effect of this health communications intervention, and focus group discussions will be held to both design and evaluate the media. The media will include bi-lingual (Samoan-English) videos, which will be shown in the prenatal clinic, in addition to bi-lingual posters and flyers which will also be at the clinic.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Visitations) ● Other 2 (meetings) 	<ul style="list-style-type: none"> ● Public Service Announcement ● TV Media Programs ● Other 1 (Press releases) ● Other 2 (Public service announcements)

3. Description of targeted audience

All residents of American Samoa.

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 health and wellness educational sessions/workshops conducted.
 - Number of research-related projects
 - Estimated number of persons exposed to ASCC ACNR generated mosquito-borne disease prevention messages
 - Number of one-on-one technical assistance consultations.
 - Number of people exposed to healthy lifestyle media messages produced by ACNR, including newspaper press releases or advertisements, text messages, billboards, posters, placemats, television programs, etc.
 - Number of pregnant women who watch the gestational diabetes videos in the hospital prenatal clinic, look at the posters, and take the informational flyers.
 - Number of households that received the healthy behavior promotion placemats
- 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 report increased knowledge leading to a healthier lifestyle.
2	Number of participants that prepared healthier foods utilizing locally grown & harvested food
3	Number of cases of mosquito-borne illnesses reported by local health department
4	Number of participants who have made or are making personal and public efforts to model and teach healthier behavior choices to their families or in other areas of society, e.g., at work, school, etc.
5	Number of pregnant women at the local hospital prenatal clinic who were screened for gestational diabetes, and if positive, made the lifestyle changes necessary to manage this condition for their own health and for the health of their expected baby.
6	Number of women who have increased their knowledge of gestational diabetes, how to prevent it and how to properly manage it

Outcome # 1

1. Outcome Target

Number of participants who report increased knowledge leading to a healthier lifestyle.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of participants that prepared healthier foods utilizing locally grown & harvested food

2. Outcome Type : Change in Condition 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 cases of mosquito-borne illnesses reported by local health department

2. Outcome Type : Change in Condition 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 # 4

1. Outcome Target

Number of participants who have made or are making personal and public efforts to model and teach healthier behavior choices to their families or in other areas of society, e.g., at work, school, etc.

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 # 5

1. Outcome Target

Number of pregnant women at the local hospital prenatal clinic who were screened for gestational diabetes, and if positive, made the lifestyle changes necessary to manage this condition for their own health and for the health of their expected baby.

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 # 6

1. Outcome Target

Number of women who have increased their knowledge of gestational diabetes, how to prevent it and how to properly manage it

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

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
- Other (Lack of staff, procurement proce)

Description

Food prices and discretionary income will affect family food choices. We are hoping for effective policy changes to help sustain a more healthful lifestyle.

Natural disasters and weather can affect mosquito research and destroy facilities.

Competing public priorities and competing programmatic challenges can affect staff time.

Inability to use funds because of procurement process and procedures can make it impossible to conduct research and extension.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Anthropometric data, food intake, sleep duration, physical activity, television/computer screen time and consumption of sugar-sweetened beverages will be collected at baseline, at one year, and after two

years for children 2- to 8-years of age. This will be done in two communities, which are "intervention sites." Additionally, we will collect anthropometric data at two "matched-pair communities," which will be similar to control sites. Analysis of the data will be used to determine the efficacy of our intervention strategies.

A research and monitoring plan will be developed to track the progress of each project.

NIFA Hatch Project SAM-044 evaluates the reach and effect of the KVZK_TV broadcast of the HBO series The Weight of the Nation, while at the same time gaining other formative information about target audiences, their knowledge, attitudes, and behaviors.

The research on the pilot project of the healthy behavior placemat is evaluative. It evaluates the cultural appropriateness and effect for American Samoan families to use this placemat as a placemat in their daily lives to promote healthy choices. It also measures if families find other ways to use the placemat to promote the healthy behaviors, such as placing it on the wall. It also evaluates the appropriateness of the placemats in other locations such as schools. Such information informs future work in health communications in American Samoa.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Ecosystem

2. Brief summary about Planned Program

The islands of American Samoa, with the exception of Rose Atoll, are steep volcanic mountains with tropical rainforest as the dominant ecosystem (Craig 2009). Unlike the temperate forests of North America, which are typically dominated by one to a few species, tropical rainforests are dominated by a combination of many species. In American Samoa, native forests extend from the seashore up to the highest mountain peaks, and this dominant forest ecosystem provides the islands' residents with numerous ecological, cultural, and economic values (SWARS Report 2012). The purpose of this proposed program is to protect American Samoa's forest ecosystems and to mediate the effects of climate change and advance the sustainability of energy resources. Land-based sources of pollution threaten groundwater quality and coastal ecosystems. Rates of bacterial contamination, soil erosion, flooding, and nutrient runoff are expected to increase if climate change predictions of more frequent and intense storms hold true. Currently, sea water infiltration of the groundwater aquifer and shock chlorination of contaminated wells render municipal water unpalatable in several communities. Stressors on coral, such as siltation by topsoil carried by flooded streams, places the coral reef at risk. The fringing reef serves as a nursery for marine life and protects the shoreline from wave erosion. Nutrient runoff can lead to estuary eutrophication and algal blooms in marine waters. Groundwater contamination requires boil water notices and costly, lengthy attempts to purify wells using large amounts of sodium hypochlorite. Watershed protection is the best method to minimize or avoid all of these harmful impacts.

The forest and other vegetation covering the islands of American Samoa are critical to the current and future environmental and economic health of the islands. Yet assessing land cover and changes in land cover in the territory is difficult and costly due to the diverse vegetation and the challenging terrain. ASCC ACNR will acquire new remote sensing technologies and develop more efficient vegetation mapping protocols to support program planning and evaluation as well as research efforts. An unmanned aerial vehicle will be needed to map land areas that cannot be reached by vehicles.

American Samoa's natural heritage includes many unique treasures. Among these is the Samoan swallowtail butterfly, a magnificent species whose range is now confined to a single island. ASCC ACNR, together with the local Department of Marine and Wildlife Resources, the National Park of American Samoa, the U.S. Geological Survey, and the U.S. Fish and Wildlife Service, will continue its research and education efforts on behalf of this species to ensure that future generations of Samoans will be able to witness its beauty.

3. Program existence : Mature (More than 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
112	Watershed Protection and Management	20%		20%	
123	Management and Sustainability of Forest Resources	25%		25%	
124	Urban Forestry	10%		10%	
125	Agroforestry	20%		20%	
132	Weather and Climate	5%		5%	
135	Aquatic and Terrestrial Wildlife	10%		0%	
136	Conservation of Biological Diversity	10%		20%	
	Total	100%		100%	

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

Some of American Samoa's watersheds and coastal areas require restoration because of damage from storm events and from poor management. Well-functioning watersheds are critical for the health of humans, plants, terrestrial wildlife, and marine wildlife (including coral reef systems). Coastal and non-coastal sections of watersheds also help mediate the effects of natural disasters, including storms and flooding events. All residents of American Samoa's islands depend on clean drinking water, but many watersheds are contaminated with coliform bacteria and E. coli. According to the 2000 census (the most recent year with this type of data), approximately a third of American Samoa residents rely on non-public water sources (e.g., individual wells, catchment systems (AS Dept. of Commerce 2011)). Therefore it is critical, particularly in regards to human health, that damaged watersheds are protected and restored. Native forest trees, urban trees, and agroforestry species are valued ecologically, culturally, nutritionally, and economically by American Samoa's residents. However, rapid human population growth, urbanization, invasive species, natural disturbances, and low employment rates are major threats to the flora of American Samoa (SWARS Report 2010). The removal of nine native beautification trees at the Industrial Park is an indication of poor planning and lack of awareness about the importance of trees in urban areas. Currently there is no enforced policy or ordinance that governs the planting, maintenance, and removal of native trees in urban and coastal areas. Additionally, the demand for energy (e.g., electricity, fuel) has increased over the last ten years (AS Dept. of Commerce 2011), and finding alternative and sustainable energy solutions is essential. For example, trees provide shade which can reduce air conditioning costs. Therefore, in this program of work, ASCC ACNR will promote the following: 1) the stewardship of forest resources, 2) proper care of urban trees, 3) sustainable agroforestry systems, 4) effective management of invasive plants, and 5) outreach on conservation education.

The Samoan swallowtail butterfly once ranged across all the major islands of the Samoan Archipelago. Today it remains on only a single island in American Samoa. Little is known about its biology and possible risks to its survival, and most Samoans are unaware of its existence. ASCC will work with its partners in other local and federal agencies to study the biology of the Samoan swallowtail and to educate the public about its value.

Vegetation maps are a critical tool for resource managers and researchers in American Samoa. For

example, the vegetation map created by ASCC ACNR and US Forest Service in 2011 has been used for everything from forestry program planning to wildlife conservation to human disease modeling. However, creating vegetation maps for American Samoa is a costly and arduous process. In addition, high resolution satellite and aerial imagery required in creating a vegetation map is expensive and only made available once every several years. ASCC ACNR plans to acquire and implement new technologies involving the use of unmanned aerial vehicles (UAV), multispectral cameras, and image analysis software to greatly improve the efficiency, accuracy, and cost-effectiveness of vegetation mapping. The resulting maps will support ASCC ACNR program planning and evaluation in forestry and other areas and serve as a resource for other resource management agencies and researchers.

Citations

AS Department of Commerce (2011) American Samoa Statistical Yearbook 2011. Department of Commerce, Statistics Division.

Craig, P. (ed.) (2009) Natural History Guide to American Samoa. National Park Service of American Samoa, Pago Pago.

SWARS Report (2010) Forest Assessment and Resource Strategy 2011-2015. ASCC Community and Natural Resources, Pago Pago.

2. Scope of the Program

- In-State Extension
- In-State Research

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

1. Assumptions made for the Program

Re-vegetating watersheds will begin the rehabilitation process of coastal areas and streams. Flooding and sediment loads from runoff will decrease; water quality will increase.

Clients will use their increased knowledge to better care for their land.

Educating about proper arboriculture will increase the health of urban trees.

Funding and staffing will be adequate.

Partnerships with local and federal agencies will offset some of the costs.

Outreach on urban and coastal native trees will raise public awareness and improve management of native trees

2. Ultimate goal(s) of this Program

To protect American Samoa's watersheds and coastal areas.

To sustainably manage American Samoa's forest resources.

To properly manage American Samoa's urban trees.

To support American Samoa's traditional agroforestry systems.

To control invasive plants on American Samoa's islands.

To prevent harmful algae blooms and loss of coral in the marine environment.

To reduce soil loss during periods of heavy, sustained rainfall.

To protect groundwater from microbial contamination.

Determine conservation status of Samoan swallowtail butterfly and threats to its survival and increase local public awareness of the value of this and other species that are unique to the Samoan Islands.

To establish local capacity for efficient vegetation management to support program planning and evaluation and research.

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
2017	4.5	0.0	3.2	0.0
2018	4.5	0.0	3.2	0.0
2019	4.5	0.0	3.2	0.0
2020	4.5	0.0	3.2	0.0
2021	4.5	0.0	3.2	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

ASCC ACNR will collaborate with partners at the Department of Marine and Wildlife Resources to establish mangrove plantings on degraded watersheds and coastal areas. This will involve the Forestry Extension personnel to determine which mangrove species to propagate and the best methods for greenhouse propagation.

ASCC ACNR will conduct site visits on private/communal/public lands, meet with landowners/land managers, and help prepare multi-year stewardship plans (including proper urban tree care) for each site. The Forestry Extension personnel will visit the sites, meet with stakeholders, and form a comprehensive management plan specific for each site. ASCC ACNR will hold community outreach events (e.g., in schools and villages) to teach youth about the importance of ecosystem health, urban trees, etc.

Forestry Extension personnel will continue to work with other environmental agencies through outreach conservation education to promote public awareness on environmental issues such as climate change, soil erosion, and invasive species. As a representative of ASCC, the Forestry Extension Program will also continue to participate in environmental groups such as Le Tausagi, the Climate Change Task Force (CCTC), and the Forestry Advisory Council. With this, ASCC ACNR will provide expertise and support in drafting a policy or guideline for the management of urban and coastal native trees.

ASCC ACNR will continue to propagate and distribute seedlings of agroforestry plants to the general public. The Forestry Extension personnel will demonstrate the best propagation techniques, soil medium, etc., for species, and will propagate plants to promote their use by land owners and managers.

In addition, ASCC ACNR will conduct site visits on private/communal land with invasive species concerns and help prepare management plans for specific sites and for specific invasive plant species. The Forestry Extension personnel will demonstrate the proper techniques for effectively managing invasive plant species, and the Extension personnel will disseminate this knowledge to the landowner/land manager.

ASCC ACNR will conduct research and education on butterfly biology and conservation. ASCC ACNR and the US Forest Service will collaborate to create up-to-date vegetation maps through the use of unmanned aerial vehicles, high-resolution multispectral cameras, remote sensing technology, and image analysis software. In addition, ASCC ACNR plans to acquire promotional items (e.g., t-shirts, educational supplies, tools, and electronics) for clients and participants to be used for educational and tree management purposes.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● TV Media Programs ● Other 1 (brochures) ● Other 2 (videos)

3. Description of targeted audience

Scientists involved in environmental resources protection.
 Policymakers in the executive and legislative branches of local government.
 Students.
 Farmers.
 Forestry clients.
 General public.

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 trees propagated and distributed.
 - Number of group educational sessions conducted.
 - Number of one-on-one technical assistance/consultations
 - Numbers of GIS Maps/Posters
 - Number of research-related projects
 - Number of participants in program activities and workshops.
- 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 improved watersheds and coastal areas
2	Number of Forest Stewardship Plans
3	Number of invasive plant management plans
4	Establishment of local capacity to create accurate and up-to-date vegetation maps more quickly and cost-effectively resulting in improved planning and evaluation capabilities of managers and researchers in and outside ASCC ACNR.
5	% of participants reporting an increased knowledge of the planned program through educational workshop and activities.
6	Number of research projects completed

Outcome # 1

1. Outcome Target

Number of improved watersheds and coastal areas

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 136 - Conservation of Biological Diversity
- 123 - Management and Sustainability of Forest Resources
- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of Forest Stewardship Plans

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of invasive plant management plans

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Establishment of local capacity to create accurate and up-to-date vegetation maps more quickly and cost-effectively resulting in improved planning and evaluation capabilities of managers and researchers in and outside ASCC ACNR.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 125 - Agroforestry
- 135 - Aquatic and Terrestrial Wildlife
- 123 - Management and Sustainability of Forest Resources
- 136 - Conservation of Biological Diversity
- 124 - Urban Forestry
- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

% of participants reporting an increased knowledge of the planned program through educational workshop and activities.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of research projects completed

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 136 - Conservation of Biological Diversity
- 135 - Aquatic and Terrestrial Wildlife

4. Associated Institute Type(s)

- 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
- Other (Staff and/or funding changes, Ch)

Description

We are unable to control the multiple factors listed above which may change the outcomes of our plan of work. For example, we may re-vegetate a watershed which subsequently gets damaged through a storm flooding event.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Watershed rehabilitation reports.
- Forest Stewardship plans.
- Site visitation reports.
- GPS/GIS maps.
- Invasive species management reports.
- Pre/Post tests.
- Summative and formative evaluations.
- Other agencies reports (eg. coral/algae coverage on reef, municipal water report)