2017 American Samoa Community College Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

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Executive Summary for 2017 Annual Report
Planned Programs for 2017:
1. Families, Youth & Communities
2. Food Security
3. Human Health & Wellness
4. Ecosystem

Major Accomplishments in 2017:
ACNR continued to serve its clientele through its research and extension programs in partnership with government agencies and non-government organizations at the local, territorial, regional, and national levels.

1. Families, Youth & Communities
ACNR staff and 4-H Youth Agents served more than 6,244 clients through 4-H projects, camps, meetings, after school programs, and educational workshops and demonstrations in the areas of youth at risk, agriculture, vegetable gardening, health, nutrition, food safety, childhood obesity, farm safety, baking, literacy, sewing, resource management, entrepreneurship, parenting, arts and crafts, Samoan culture and language, STEM, volunteer development and retention, healthy food demo, healthy lifestyle & wellness, citizenship, textile design, survival skills training (First Aid/CPR), physical education, livestock (poultry & swine), entrepreneurship, GIS mapping, food security, vegetable gardening, and forestry.

2. Food Security
ACNR staff and Agriculture Extension Agents served more than 3,874 clients through farm visitations, workshops and training in farm safety and pesticides safety; vegetable, taro & banana production; aquaculture (tilapia) & hydroponics; and livestock (swine & poultry) production. Evaluations found that 85% of Farm Safety Days participants and 90% of Pesticides Safety training participants acquired knowledge on pesticides and farm safety. Furthermore, Extension Agents distributed 2,075 planting materials of disease resistant cultivars and produced and distributed 3,776 pounds of tilapia feed. The entomology program continued to partner with Department of Agriculture (DOA) in completing three Cooperative Agricultural Pest Survey programs on fruit flies, citrus greening disease, and exotic invasive ants. Plant diagnosticians provided 17 plant clinic diagnoses and recommendations for farmers and Extension Agents.

3. Human Health & Wellness
ACNR staff and FCS/EFNEP Agents served more than 8,300 clients through extension programs in nutrition; exercise & physical activity; childhood & adult obesity; food safety; healthy lifestyles and environment; vegetable gardening; health communications; balanced, safe, and nutritious meals preparation using local produce; sewing; and traditional arts. Approximately 70% of the participants who attended these programs and workshops acquired knowledge and developed skills to prepare meals that are safe, balanced, and nutritious. Moreover, 1,600 workshop participants learned about, prepared, and consumed healthy food at the workshops and activities provided by the FCS, EFNEP, and Agriculture Extension Programs, and 53% of the participants utilized more locally grown food. ACNR's health communications research program continued to work with LBJ Medical Center and the Department of

Human Social Services' (DHSS) Women Infants & Children (WIC) program to develop and test health communication messages (placemats & boards) and products (films) that are research based, effective, and culturally appropriate. The entomology program continued to collaborate with the Department of Health, providing technical assistance on mosquito control planning, implementation, and public messaging for prevention of dengue, chikungunya, and Zika viruses.

4. Ecosystem

ACNR and Forestry staff served 1,796 clients through: advisory council meetings; site visitations; invasive species control; management plans development; tree planting and pruning demonstrations; watershed management; outreach presentations at schools, churches, and village councils; rain garden projects; school tours/field trips; science fair projects; Arbor Week celebration; research projects (Samoan swallowtail butterfly & ambrosia beetles); workshops; conservation education & urban & community forestry projects; GPS-GIS map development; and environmental camps.Staff propagated and distributed more than 1,750 trees to protect forest ecosystems (watersheds, forests, agroforestry); alleviate the negative impacts of invasive species, flooding, soil erosion, water contamination; and sustain energy resources.

Major Challenges in 2017 were:

1. Closure of Samoa Tuna Processors plant resulted in challenges affecting the local government and economy
2. ASCC cost containment measures resulted in a reduction in working hours and freeze on salary step annual increments
3. Shortage of professional (scientists) and qualified staff (with Bachelors & Masters degrees)
4. Limited sea and air transportation to the Manu'a islands
5. Recruitment of local people to fill ACNR positions
6. Delays in the procurement process
7. Department of Health shut down farming businesses due to poor sanitation and use of illegal pesticides
8. Rejection of local produce by the School Lunch Program

Total Actual Amount of professional FTEs/SYs for this State

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	22.5	0.0	17.2	0.0
Actual	14.3	0.0	10.0	0.0

II. Merit Review Process

1. The Merit Review Process that was Employed for this year

- 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. Stakeholder Input

1. Actions taken to seek stakeholder input that encouraged 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.

Similar to 2016, stakeholders' participation is encouraged through media announcements (TV, radio, newspaper) and social media (Facebook); targeted invitations to traditional and non-traditional individuals; surveys of the general public and of select groups; and focus group and evaluation sessions at workshops, meetings, and activities.
Agriculture Extension Program (AEP): AEP used eight (8) TV news spots, three (3) radio talk shows, and eight (8) Samoa News (newspaper) articles, photos with captions, and PSAs to announce (6) public meetings (80 participants); eight (8) farm safety days with 623 participants; five (5) pesticides workshops (114 participants); eight (8) vegetable workshops (136 participants);one (1)

swine workshop (9 participants); meeting with four (4) department directors (DOA, DOH, DOE, ASEPA), and 88 farmers. Stakeholders' participation in focus group and evaluation sessions at 10 tours/field trips (642 students) and the aforementioned workshops, and farm visitations to 360 commercial and subsistence farmers also provided stakeholder input and encouraged stakeholders' participation.

Forestry Program: Forestry Program used one (1) TV news spot, two (2) Samoa News (newspaper) articles, photos with captions, PSAs, and social media (facebook page) to announce three (3) Advisory Council meetings (30 participants). The Forestry program and eight (8) local environmental agencies successfully hosted two summer camps serving 121 participants; assisted and served 642 school participants from 10 school tours both public/private; provided technical assistance to 62 private and communal landowners; and establishment of 4 rain gardens with 19 participants. A total of 844 program participants provided inputs and also acquired knowledge through these educational workshops and activities.

Family Consumer Science Program (FCS): FCS staff used 10 TV news spots, three (3) radio programs,15 Samoa News (newspaper) articles, photos with captions, PSAs, and social media (facebook page) to announce: one public meeting in the Manu'a islands; 97 basic nutrition and food safety workshops (980 participants) at 24 different community organizations and government agencies; 12 basic nutrition workshops at Food Stamp Program and Store Outreach (2400 participants); and 12 sewing workshops (144 participants). Stakeholders' participation in focus group and evaluation sessions at 10 school tours (642 students) and aforementioned workshops also seek stakeholder input and encourage stakeholders' participation. Participation of 570 stakeholders in completing the needs assessments, survey, family enrollment form, 24-hour food recall, and behavior checklist instruments seek stakeholder input and encourage stakeholders' participation.

4-H Program: 4-H staff used seven (7) TV news spots, and 15 newspaper (Samoa News) articles, photos with captions, PSAs, and social media (facebook page) to publicize: two (2) youth camps (180 participants); 12 volunteer leaders meetings (110 participants); Coast Weeks (240 participants); STEMfest (200 participants) and 24 4-H workshops (300 participants). Stakeholders' participation in focus group and evaluation sessions at 10 tours (642 participants); one First Friday's at the Fagatogo Market (150 participants); and above mentioned workshops also seek stakeholder input and encourage stakeholders' participation.

2(A). A brief statement of the process that was 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.

Agriculture Extension Program (AEP): AEP used focus group and evaluation sessions, surveys, and meeting minutes to identify individuals and groups at: six (6) public meetings (80 participants); four (4) farm safety days with 225 participants; eight (8) pesticides workshops (160 participants); eight (8) vegetable workshops (136 participants);one (1) swine workshop (9 participants); 10 tours/field trips (642 students), farm visitations to 360 commercial and subsistence farmers, and meeting with four (4) department directors (DOA, DOH, DOE, ASEPA), and 88 farmers.

Forestry Program used focus group and evaluation sessions, surveys, and meeting minutes to

identify individuals and groups at: three (3) Advisory Council meetings (30 participants); two (2) summer camps with 121 participants; 642 school participants from 10 school tours, technical assistance to 62 private and communal landowners; and establishment of four (4) rain garden projects with 19 participants.
Family & Consumer Science Program: FCS program used focus group and evaluation sessions, bilingual survey instruments, two needs assessments, and testimonies to identify individuals and groups at: one public meeting in the Manu'a islands; 97 basic nutrition and food safety workshops (980 participants) at 24 different community organizations and government agencies; 12 basic nutrition workshops at Food Stamp Program and Store Outreach (2,100 participants); and 12 sewing workshops (144 participants); and 10 school tours (642 students). Data and information from 570 stakeholders who completed the needs assessments, surveys, family enrollment forms, 24-hour food recalls, and behavior checklist instruments were utilized to identify individuals and groups.
4-H Program: 4-H staff used focus group and evaluation sessions, bilingual survey instruments, meeting minutes, and direct communication to identify individuals and groups at: two (2) youth camps (180 participants); 12 volunteer leaders meetings (110 participants); Coast Weeks (240 participants); STEMfest (200 participants); 24 4-H workshops (300 participants),10 tours (642 participants); and one (1) First Friday event at the Fagatogo Market (150 participants);

2(B). A brief statement of the process that was 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.

Agriculture Extension Program: Collected inputs from six (6) public meetings (80 participants); eight (8) farm safety days with 623 participants; five (5) pesticides workshops (114 participants); eight (8) vegetable workshops (136 participants);one (1) swine workshop (9 participants); meeting with four (4) department directors (DOA, DOH, DOE, ASEPA), and 88 farmers. Stakeholders' participation in focus group and evaluation sessions at 10 tours/field trips (642 students) and aforementioned workshops, and farm visitations to 360 commercial and subsistence farmers also seek stakeholder input and encourage stakeholders' participation.
Forestry Program: Collected inputs from three (3) Advisory Council meetings (30 participants); Forestry program and 8 local environmental agencies successfully hosted two (2) summer camps serving 121 participants; 642 school participants from 10 school tours both public/private; 62 private

and communal landowners; and establishment of four (4) rain gardens with 19 participants.
Family & Consumer Science Program: Collected inputs from one public meeting in the Manu'a islands; 97 basic nutrition and food safety workshops (980 participants) at 24 different community organizations and government agencies; 12 basic nutrition workshops at Food Stamp Program and Store Outreach (2400 participants); and 12 sewing workshops (144 participants). Focus group and evaluation sessions at 10 school tours (642 students) and aforementioned workshops also seek stakeholder input and encourage stakeholders' participation. 570 stakeholders completed the needs assessments, survey, family enrollment form, 24-hour food recall, and behavior checklist.
4-H Program: Collected inputs from two (2) youth camps (180 participants); 12 volunteer leaders meetings (110 participants); Coast Weeks (240 participants); STEMfest (200 participants); 24 4-H workshops (300 participants); focus group and evaluation sessions at 10 tours (642 participants); and one First Friday's at the Fagatogo Market (150 participants). Also the 4-H program used meeting minutes, bilingual survey instruments, one on one communication to collect stakeholders' inputs.

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.

In 2017, ASCC-ACNR continued to use inputs from stakeholders to direct and improve programs in both extension and research in terms of recruiting and hiring of new staff; staff capacity building opportunities; scholarship opportunities for agricultural sciences student majors; acquisition of new equipment and materials and supplies; and improvement of existing programs and facilities. Stakeholders' inputs were used to identify emerging issues; redirect extension and research programs; hire staff; and to make changes, improvements, and/or to develop new programs for the community.
Agriculture Extension Program (AEP): Similar to 2016, the main issues or topics identified from stakeholders' feedback included disease resistant crops, farmers' language and cultural barriers, lack of available farming supplies on-island, high cost of feeds and pesticides, swine inbreeding, School Lunch Program, ban of produce sales by the local Department of Agriculture for food safety, and pesticide control on vegetables. AEP will also need to fill vacant staff positions due to increased requests for assistance from the stakeholders.
Forestry Program:
Due to stakeholders feedback, the forestry program will continue to provide forest and natural resources conservation education workshops
and presentations to the community, villages, churches, and schools. Inputs from stakeholders were considered in making the needed program changes, program development, and to improve public awareness. Conservation education campaigns and raising awareness on the importance of protecting the forests, trees, and watersheds, and control of invasive species are all still critical.
Family & Consumer Science Program:
Inputs from stakeholders are considered for implementing changes to the outreach programs. For instance the sewing program needed to be extended from 12 weeks to 15 weeks of lessons. Also an increase in requests for programs in the Manu'a islands was acknowledged, but lack of

transportation makes it difficult for outreach to happen. Also, the stakeholders are commenting on a need for more outreach in the community generally, especially in the villages farther away from the main office. The increased needs are used to support recommendations for hiring more paraprofessionals.

4-H Program:

Stakeholders' inputs from 1882 4-H Program participants/clients include: more youth educational programs in the community; need to provide resources/supplies for activities; adults, parents, and volunteers need to understand the 4-H experiential models; extend 4-H programs into the villages and churches; need to revive the 4-H Foundation; and extend the STEM (Science, Technology, Engineering, & Math) program to 4-H school and village clubs. Overall, the stakeholders are asking for more new programs, services, and resources. ASCC-ACNR Education, Research, and Extension programs are addressing many of the needs and issues as much as possible given the available human, financial, and physical resources.

Brief Explanation of what you learned from your Stakeholders

Agriculture Extension Program (AEP): The stakeholders feedback from all the workshops and activities (1,964 participants) conducted include the priorities and issues on Extension staff visibility in the community through program delivery and outreach services; need new swine breeds and artificial insemination demonstrations; need more improved/resistant taro and banana varieties; need new fruit tree varieties; need to assist clients by providing wood chipping service for manure management for swine farmers; and need for more qualified staff including field agents, and more vehicles and equipment to effectively deliver the programs to the community.

Forestry Program: The priority areas/issues learned from the 974 Forestry Program stakeholders include: the need to control invasive species (flora & fauna); program staff should be more visible in the community to assist and encourage landowners to protect the environment, and become better environmental stewards by planting more native trees to address climate change; continue to work with village councils to manage watersheds and coastal areas; extend program services to the Manu'a islands; continue and sustain existing collaboration and partnerships with other government agencies and non-government organizations, including partners such as the Office of Samoan Affairs and the Department of Parks and Recreation; establish new forestry-related projects for conservation purposes in highly urbanized areas; provide new and updated forestry documents including brochures and pamphlets; provide more services in reducing critically polluted and eroded areas; provide more outreach activities to increase environmental and forest awareness towards the youth; and hire more professional staff with the necessary qualifications in improving the Forestry Program.

Family & Consumer Science Program (FCS):

Stakeholders feedback indicates a need to continue collaboration
with Agriculture Extension Agents in promoting vegetable gardening projects to reduce the high con sumption of meats, starches and
sugars. Nutrition Agents provided recipes that utilize locally grown vegetables to prepare nutritious and economical meals for the entire family.

Additional educational resources have been created and translated into the Samoan language. There is a need for translated educational resources to be distributed
to program participants and clients.

Based on stakeholders' inputs, program areas that need to be addressed include: reintroduction of health and physical education curriculum in the public schools; continue with
programs on parenting, family management, traditional arts and crafts, and basic sewing; and nutrition and food safety quarterly visits to the Manu'a Islands (Tau, Ofu, Olosega).

The priority areas/issues learned from the 2,336 FCS Program participants include: more nutritional recipes; need federal government approval for Food Stamp Program recipients to purchase produce from local roadside markets and food stalls; request for FCS to offer nutrition education workshops

after hours and weekends; request for FCS to extend nutrition education workshops to Aunu'u and Manu'a islands; and need to offer nutrition, food safety, and physical activity workshops to government agencies and non-government organizations. Moreover, the stakeholders' inputs priority areas/issues collected from more than 144 FCS sewing program clients include: need to repeat the basic sewing workshops for beginners; need to offer advanced level sewing; need to provide enough sewing machines for clients during workshops; need to organize a fair to display and exhibit sewing products/outfits; need to conduct traditional and non-traditional handicrafts and arts workshops; and need assistance with starting sewing businesses.

4-H Youth Program:

The 4-H Youth Program used survey and focus group sessions to secure feedback from the stakeholders. An estimated 1,882 participants attended 4-H Programs and workshops, and about 80% of the stakeholders were surveyed. The surveys were both in English and Samoan, since most of the participants are Samoan-speaking individuals. Most of the surveys were orally conducted during focus groups for the youths, especially the younger ones. It was easier to collect information from stakeholders (youth) during focus group sessions.

The 4-H program continued to address stakeholders' inputs as reported in surveys and focus group session during workshops. Ninety percent (90%) of the activities are carried out at the villages thus enabling 4-H and FCS agents to deliver the programs to clients (women, youth and families) in American Samoa. One of the highlights in 2017 was the first 4-H STEM summer camp in the territory.

Stakeholders' inputs from the 1,882 4-H Program participants/clients included: more youth educational programs in the community; need to provide resources/supplies for activities; adults, parents, and volunteers need to understand the 4-H models; extend 4-H programs into the villages and churches; need to revive the 4-H Foundation; and extend the STEM (Science, Technology, Engineering, & Math) program to 4-H school and village clubs. Overall, the stakeholders are asking for more new programs, services, and resources. ASCC-ACNR Education, Research, and Extension programs are addressing many of the needs and issues given the available human, financial, and physical resources.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		**Research**	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
{No Data Entered}	{No Data Entered}	{No Data Entered}	{No Data Entered}

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
Actual Formula	1280126	0	1853798	0
Actual Matching	0	0	0	0
Actual All Other	14456	0	0	0
Total Actual Expended	1294582	0	1853798	0

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous				
Carryover	788459	0	975683	0

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Families, Youth and Communities

☑ Reporting on this Program

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	25%		25%	
801	Individual and Family Resource Management	10%		20%	
802	Human Development and Family Well-Being	10%		20%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%		15%	
806	Youth Development	50%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	6.0	0.0	5.0	0.0
Actual Paid	3.6	0.0	0.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
438648	0	975683	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
14456	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Similar to 2016, the Extension Programs worked with families and youth in the community through school and after-school programs, camps and summer sessions, site visits, presentations, workshops and training. Workshops and activities included Arts & Crafts, Games, Nutrition, Healthy Food Demo, Healthy Lifestyle, and Sewing. Workshops also included topics on Citizenship, Parenting, Home Economics, Samoan Culture, Textile Design, Survival Skills Training (First Aid/CPR), Volunteering, Partnership Collaboration, Wellness and Healthy Lifestyle Education, Physical Education, Animal Farm/Livestock, Entrepreneurship, GPS/GIS mapping, Farm Safety workshop, Food Security, STEM, and Forestry.

2. Brief description of the target audience

The targeted audiences are the residents of American Samoa, including families, parents, children, youth, homemakers, youth organizations, farmers, students, and any interested individual in American Samoa.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	500	5000	5000	15500

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2017

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of group educational workshops and program activities conducted.

Year	Actual
2017	103

Output #2

Output Measure

- Number of youth who participated in educational workshops and program activities.

Year	Actual
2017	1850

Output #3

Output Measure

- Number of adults that participated in educational workshops and program activities.

Year	Actual
2017	260

Output #4

Output Measure

- Number of volunteers that participate in professional development workshop.

Year	Actual
2017	26

Output #5

Output Measure

- Number of camps

Year	Actual
2017	2

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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 Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Across the five Pacific Island territories, the leading causes of mortality among all ages include unintentional injuries, including motor-vehicle crashes; cancer; cardiovascular diseases; stroke; and diabetes. Results from the Youth Risk Behavior Survey (YRBS) indicated that high school students in the Pacific Island territories engaged in behaviors that increased their risk for mortality or morbidity from these causes. The DOE Standard base assessment indicates that more than 50% of public school students fall below the basic level of reading and math (SY 2015-16 AS Report Card). According to the 2011 CDC American Samoa YRBBS, 15.2% of high school students smoked marijuana one or more times during their life.

What has been done
In 2017, the Cooperative Extension Programs (FCS, Forestry Program, Agriculture Extension Program, and 4-H) conducted 67 in-school workshops, after-school, program tours, community workshops and 3 camps. 50% of the outreach programs are conducted in the villages where youth with no means of transportation can participate.

Results
About 85% of 1,685 youth participants acquired knowledge of life skills concepts and practices. The youth have acknowledged through focus groups the knowledge they have acquired from the outreach programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management

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

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	85

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
According to the statistical yearbook by the ASDOC, school enrollment decreased in SY15 to 16,648 from SY14 17,337. Also in 2015, college enrollment decreased from 1,488 in SY14 to 1,276 in SY15. The DOE Standard base assessment indicates that more than 50% of public school students fall below the basic level of reading and math (SY 2015-16 AS Report Card). According to the 2011 CDC American Samoa YRBBS, 15.2% of high school students smoked marijuana one or more times during their life. Also in 2011, 28.8% were offered, sold, or given an illegal drug on school property compared to 14.3% in 1993. 38.1% were never taught about HIV or AIDS.

What has been done
In 2017, FCS and the 4-H Program conducted 36 workshops for the youth and FCS conducted 12 workshops for families. The goals of the programs are to teach skills and empower the participants (youth)and parents to make the right choices.

Results
About 85% of the 1,850 workshop participants acquired knowledge for positive self-development. During 4-H camps, participants are given journals to note what they learned and what they want to see more of in the future. About 95% of participants want to see more activities and workshops being conducted.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	80

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Across the five territories during 2007, the percentage of high school students who had rarely or never worn a seat belt when riding in a car driven by someone else ranged from 11.8% to 83.2% (median: 30.9%). During the 30 days before the survey, the percentage who had ridden in a car or other vehicle driven by someone who had been drinking alcohol ranged from 34.8% to 49.8% (median: 42.8%), the percentage who had driven a car or other vehicle when they had been drinking alcohol ranged from 7.8% to 16.1% (median: 11.9%), and the percentage who had carried a weapon ranged from 16.9% to 32.0% (median: 19.6%). The percentage of students who had smoked cigarettes during the 30 days before the survey ranged from 23.1% to 37.6% (median: 31.1%), the percentage who had not eaten fruits and vegetables five or more times per day during the 7 days before the survey ranged from 72.8% to 83.6% (median: 79.5%), and the percentage who had not met recommended levels of physical activity ranged from 64.0% to 77.2% (median: 68.9%).

What has been done
In 2017, FCS conducted 12 sewing workshops and 12 parenting workshops for adults. The Agriculture Extension staff conducted 11 vegetable garden workshops and helped establish 36 vegetable gardens. The 4-H program conducted 36 workshops to enhance hands-on skills,

decision making skills, develop positive leadership skills, and increase knowledge of entrepreneurship. The Forestry program conducted 12 workshops.

Results
In 2017, 144 participants received certificates of completion in the sewing program. The participants were able to tailor and sew their own clothes. About 80% of participating youth and adults in the programs acquired knowledge and developed skills in resource management, nutrition, food safety, and youth at risk issues. Based on journals and focus groups, the youth would like to see more outreach in the villages because it is convenient for youth who have no means of transportation.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
801	Individual and Family Resource Management
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #4

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Resource management (poverty), parenting, culture, and youth at risk issues continued to be major areas of concern in American Samoa. 54.5% of American Samoa families are considered poor and below the US poverty level. The per capita income in American Samoa is $13,000.

What has been done
Extension Programs conducted workshops and provided resources to empower youth to make the right choices and to help parents become better parents. The 4-H program conducted 36 workshops and 2 camps to enhance hands-on skills, decision making skills, develop leadership skills,and increase knowledge of entrepreneurship. In addition, the FCS conducted 12 parenting workshops (144 participants), Forestry conducted 12 workshops and the Agriculture Extension program conducted 11 gardening workshops.

Results
980 program participants improved parent-child relationships through educational and recreational activities. 144 participants completed parenting workshops. About 75% of the program participants acquired knowledge and developed skills in resource management, Samoan Culture,
vegetable gardening,forestry, parenting, and youth at risk issues.

4. Associated Knowledge Areas

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

V(H). Planned Program (External Factors)

External factors which affected 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)

Brief Explanation

The Planned Programs are being conducted at the college campus and in the community, including the villages. In FY2017, the programs visited the Manu'a islands four times due to improvement to transportation by sea and air. Some issues (premarital sex, teenage pregnancy, sexually transmitted disease) are considered taboo because of cultural and religious beliefs. In FY 2017, the 4-H and FCS were able to reach more than 4,000 participants in all the programs that were conducted. For the first time the 4-H partnered with American Samoa Government (ASG) Department of Education and American Samoa Power Authority to conduct the first STEM summer camp for 120 youths between the ages of 8 and 12. The participants were able to learn skills through different programs within the Land Grant program areas, for example, Samoan culture, GIS mapping, drone control,

robotics, survival skills, the military lifestyle, arts & crafts, energy-saving activities, technology/electronics, healthy lifestyle, and vegetable gardening. Participants reported the Basic Sewing Program as a useful program for families in the community. Most participants are saving money from doing their own sewing. About 10% of the participants bought their own sewing machine and started their own businesses at home. The program agents need to be more visible in order for the community to understand and know more about the programs. There is an increase in the number of requests for programs and services in the community.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Evaluation results indicated that participants have increased knowledge due to the planned program activities. Positive feedback and critical comments were used to assess the program and determine what is working and what is not. In 2017, 144 participants received certificates of completion in the sewing program. About 85% (1,500) of the 1,850 program participants acquired knowledge and developed skills in resource management, Samoan culture and youth-at-risk issues. Taking these programs to the villages showed us that we were able to reach more people with information and life skills that were able to help them. Most families do not have the time or the ability to travel to these programs that are held after work or school. Being the only agricultural research station in the territory, schools frequently bring students to the campus for visual and hands-on experience. In 2017, school tours decreased due to a lack of public transportation, but there was an increased number of requests for agents to provide workshops at the schools.
Tours ranged from 15 to 130 students/adults per visit. The tour requests from schools are based on the school curriculum. All Extension Programs are well received by the public and community, and we will continue to provide the services as requested by the schools and communities. There is still a need for more qualified staff including field agents, and more vehicles and equipment to effectively deliver the programs to the community. Overall, clients and participants reported that Extension programs are doing a good job, and they are grateful that the staff members are able to travel to their villages and schools to conduct the programs. To provide better services to the community, about 90% of the activities are taken to the villages by the 4-H and FCS agents. The 4-H and FCS Program must continue to deliver the programs to the villages in order to reach the women, youth and families in American Samoa. Most of the participants who attend the FCS programs are women or homemakers. Many of these women do not have the ability to travel, and having the FCS programs in their villages makes it easier for them to complete the 12-week program. The 4-H program also makes it easier for the youth to attend the programs because the parents are either working, have no transportation, or are too busy with other tasks.The 4-H program clubs and in-school program leaders are grateful for all of the activities provided to the youth because it gives them the ability to learn things like culture, resource management, entrepreneurship, arts & crafts, dealing with peer pressure, pregnancy, and developing life skills. Extension programs need to:

- Deliver programs for the youth in the community
- Conduct more camps for the youth and families.
- Conduct more workshops on family strengthening and the Samoan Culture.
- Secure and acquire more resources to assist with the activities and programs

Because there are so many curricula/projects available from the national level, there is a need for more qualified staff and resources to deliver these curricula. To help connect with the youth of American Samoa more effectively, we have partnered with the DOE, American Boy Scouts, US Army Reserve, Department of Youth and Women, Water and Conservation

Board, DPS Juvenile Center, and DOH Family Planning Program. As the demand for after-hour and in-school activities increase, there's a need for more staff to help meet this need.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Food Security

☑ Reporting on this Program

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	0%		5%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%		5%	
205	Plant Management Systems	10%		5%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		0%	
212	Pathogens 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)	4%		0%	
315	Animal Welfare/Well-Being and Protection	4%		15%	
401	Structures, Facilities, and General Purpose Farm Supplies	4%		5%	
403	Waste Disposal, Recycling, and Reuse	5%		15%	
601	Economics of Agricultural Production and Farm Management	4%		5%	
604	Marketing and Distribution Practices	5%		0%	
703	Nutrition Education and Behavior	10%		0%	
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	2%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	2%		0%	
903	Communication, Education, and Information Delivery	10%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	8.0	0.0	5.0	0.0

Actual Paid	3.6	0.0	3.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
323646	0	292705	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The Agriculture Extension Program conducted community workshops, school programs and farm visits to provide educational information, demonstration, and activities on the program developments. Listed are the planned projects, activities and workshops conducted in FY17.

- Imported, micropropagated (tissue culture), multiplied, evaluated, and distributed improved taro, banana, and vegetable cultivars to farmers.
- Identified vegetables and varieties that perform well in American Samoa.
- Conducted field trials to evaluate for disease/pest resistance, heat/rain tolerance and yield.
- Performed crosses of elite taro cultivars and evaluate progenies for yield, disease resistance, and taste.
- Collected, multiplied and distributed improved fruit tree varieties.
- Conducted vegetable and fruit tree workshops.
- Provided plant clinic diagnoses and recommendations for plant health management.
- Conducted pest surveys
- Tested reduced-risk pesticides
- Conducted biological control studies of economically important pests
- Provided technical support with nuisance bee problems and apiculture
- Developed food safety policies & procedures
- Implemented food safety, sanitation, and protection practices.
- Conducted pesticide safety and farm safety training.
- Conducted farm visitations and demonstrations
- Organized public awareness programs.
- Produced and evaluated growing media made from locally sourced materials as alternatives to imported peat mixes and mined top soil.
- Conducted workshops to present locally produced growing media to farmers.
- Maintained Center for Sustainable Integrated Agriculture and Aquaculture
- Provided technical assistance on production, disease, and nutrition issues to aquaculture farmers
- Conducted workshops on aquaculture, including integrated practices such as aquaponics and tilapiacum-pig systems.
- Reduced inbreeding at farmers' animal operations - buying/selling or trading of stock, boar services,

artificial insemination, training in feeding management, mange control and improvement in facilities.

2. Brief description of the target audience

The participants and clients were small and resource-limited farmers, commercial farmers, aquaculture farmers, forestry clients, hobby farmers, potential farmers, general public, students, teachers, food handlers, food vendors, homemakers, cooks, farmers, village residents, church members, children and youth program participants.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2000	10000	1000	15000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2017

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of cultivars of disease resistant taro and improved varieties of sweet potato multiplied and released.

Year	Actual
2017	9

Output #2

Output Measure

- Number of improved taro setts and/or sweet potato slips disseminated.

Year	Actual
2017	2075

Output #3

Output Measure

- Number of plant clinic diagnoses and recommendations made to assist clients.

Year	Actual
2017	17

Output #4

Output Measure

- Number of vegetable variety demonstrations completed.

Year	Actual
2017	8

Output #5

Output Measure

- Number of Tilapia released from breeding program.

Year	Actual
2017	260

Output #6

Output Measure

- Pounds of Tilapia feed produced at ASCC feeds lab.

Year	Actual
2017	3776

Output #7

Output Measure

- Number of farmers participating in the small scale chicken farms program/project

Year	Actual
2017	3

Output #8

Output Measure

- Number of isolates of Phytophthora colocasiae collected and tested for virulence.
  Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Number of crosses of taro cultivars performed and number of new cultivars evaluated.

Year	Actual
2017	750

Output #10

Output Measure

- Number of group educational sessions conducted.

Year	Actual
2017	14

Output #11

Output Measure

- Number of research-related projects

Year	Actual
2017	1

Output #12

Output Measure

- Number of one-on-one technical assistance/consultations.

Year	Actual
2017	138

Output #13

Output Measure

- Number of pest surveys completed in collaboration with local Department of Agriculture.

Year	Actual
2017	3

Output #14

Output Measure

- Number of farmers that participated in locally produced growing media workshops.

Year	Actual
2017	5

Output #15

Output Measure

- Number of vegetable cultivars evaluated.

Year	Actual
2017	44

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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 Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	12

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers, landscapers, and home gardeners all face the challenges of dealing with plant pests and diseases. A correct diagnosis of the problem is the first step in effectively managing it. In addition, like other island states and territories, American Samoa often is forced to deal with accidental introductions of new pests from outside the territory. Prompt detection of these new introductions may allow mitigation of future damage through prompt control measures or eradication.

What has been done
ASCC ACNR offers a plant clinic service to farmers, extension agents, and the general public to provide prompt, authoritative identifications of plant pests and diseases and recommendations for management and control.

Results
Farmers, extension agents, and experienced gardeners are already familiar with management for the commonly seen pests and diseases in their crops. For less common problems, or pests new to the territory, the plant clinic service provides crucial assistance in identification and control, helping these producers to succeed in the face of new challenges they may not have encountered before.

4. Associated Knowledge Areas

KA Code	Knowledge Area
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants
205	Plant Management Systems

211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	487

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
There is a great need in American Samoa to increase consumption of fruits and vegetables to help address the issue of obesity and non-communicable disease. Farmers continued to farm vegetable varieties that are beneficial for their health, providing food, and generating an income for the family. Inbreeding is still an issue with the piggery farmers.

What has been done
The Agriculture Extension outreach programs continued to provide seeds/seedlings to the community, schools and 4-H clubs for vegetable gardening. The agents also conducted follow-up visits to farmers, schools, and producers. The Extension office continues to sell seeds of improved vegetable varieties at an affordable price to the public to encourage vegetable farming. The Agriculture Extension program conducted Swine Artificial Insemination (AI) workshops that helped farmers improve their stocks.

Results
The Agriculture Extension program sold more than 111 vegetable seed packages to 90 farmers. The Agriculture Extension staff identified improved cultivars that perform well in the tropics and are disease resistant. In 2017,77 swine farmers improved stock through the ACNR Extension Services and 25 of them improved their stocks from the AI project. Moreover, clients increased vegetables and fruits production and consumption, prepared healthy meals, and saved money.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
205	Plant Management Systems
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants
215	Biological Control of Pests Affecting Plants
308	Improved Animal Products (Before Harvest)
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
903	Communication, Education, and Information Delivery

Outcome #3

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	623

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

All consumers of locally grown produce in American Samoa care that the fruits and vegetables they are eating are safe for them and their families. The local government must assure the community that the food being supplied from local farmers to the school lunch program is free from biological, physical and chemical contamination. Consumption of contaminated produce can result in illness and death.

The continued usage of illegal pesticides in American Samoa is still an issue. Importation and entry of pesticides into American Samoa are also challenging. Another issue is the improper handling of pesticides before, during, and after usage.

What has been done
Two ACNR staff members have completed the Produce Safety Alliance Train the Trainer course. Work on a Produce Safety Training Manual aimed at American Samoa's conditions is being produced and will be made available in Samoan, English, Vietnamese and Chinese. Interested farmers have allowed ACNR to visit their farms and present produce safety training. During FY 2017, ASCC-ACNR conducted 5 Pesticide Applicator workshops and 8 Farm Safety Days.

Results
There is an increased awareness at the American Samoa Department of Agriculture (ASDoA), ACNR and in the community of the need for produce safety training for our farmers. The ACNR Produce Safety Training manual, when complete will be used to train farm inspectors and farmers on good agricultural practices and areas that need improvement in American Samoa. ASDoA, with the assistance of ACNR, has begun application for the FSMA Produce Safety grant to assist in becoming compliant with the new FSMA rules.
In FY 2017, Extension professionals trained and certified 114 participants. The EPA pesticide officer was present to certify the participants. The certification allows the participants to buy pesticides from the local Department of Agriculture and non-government vendors. As a result of the 5 pesticides workshops, 90% of participants acquired knowledge; and 85% of participants of the 8 farm safety days, increased awareness of Integrated Pest Management strategies, pesticides safety, and biological control programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens 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

Outcome #4

1. Outcome Measures

Number of farmers making their own tilapia feeds.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The main issue is the high cost and availability of commercial feeds for aquaculture farmers.

What has been done
The Center for Sustainable Integrated Agriculture and Aquaculture (CSIAA) continues to maintain equipment for the production of fish feeds that is available to local fish farmers with no charge.

Results
Farmers continued to make use of feeds facilities to produce feed for the farm. In 2017, the CSIAA produced 3,776 pounds of tilapia feeds. Fish farmers saved money and increased feed production for ACNR is helping with the feed supply.

4. Associated Knowledge Areas

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

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
All farmers and community members of American Samoa who want to improve the sustainability and economic viability of local agriculture are interested in replacing imported, non-renewable farm inputs with locally-sourced, renewable and less expensive inputs.

What has been done
Equipment necessary for processing coconut husk, which is locally available and free, into the appropriate particle sizes have been researched and procured by ACNR. Trials have been conducted to evaluate the suitability of these media for agricultural use. Several hydroponic farmers have been made aware of the usefulness of our locally produced coir as a more economical and environmentally sustainable growing medium.

Results
Most hydroponic farmers in American Samoa have switched from peat based media to coconut coir based media. Some are still sourcing the coir from off island but slowly some are making use of locally sourced coir which is economically and environmentally sustainable.

4. Associated Knowledge Areas

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

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The pests and diseases that threaten American Samoa's agricultural production and environment are almost all species that were accidentally introduced to the territory. The territory remains vulnerable to exotic invasive pests that may arrive with imported produce or other commodities. Establishment of pest surveys can help ensure early detection of newly arrived plant pests and diseases so that eradication or mitigation measures can be implemented before it is too late.

What has been done
ASCC ACNR works with the American Samoa Department of Agriculture to conduct ongoing exotic pest detection surveys under the USDA APHIS Cooperative Agricultural Pests Survey program. A network of parapheromone-baited traps for exotic fruit flies is maintained continuously, and the partners have continued monitoring for exotic invasive ants in areas at high risk for accidental introductions of non-native species. In addition, since the first detection and establishment of the citrus greening vector Asian citrus psyllid in the territory, ASCC ACNR and ASDoA have monitored for citrus greening.

Results
Over the course of the fiscal year, a total of 18,239 fruit flies were collected in the network of traps and identified in the lab. Fortunately no new exotic invasive species were detected among them. In addition to providing opportunity for early detection and response to new incursions of exotic species, documenting the absence of certain particularly harmful species is crucial to conducting proper risk assessments for import or export of fruit and vegetables that are hosts for those species. The 2017 invasive ants surveillance program deployed 2,540 bait stations across 55 locations on all five inhabited islands of American Samoa. No new detections of invasive exotic species occurred, but two recently introduced species were found to be continuing their spread throughout the islands. Asian citrus psyllids were collected from 41 sites and tested for the presence of citrus greening pathogens. Results indicate that American Samoa likely remains free of this devastating disease despite the arrival of the Asian citrus psyllid vector over seven years ago. These ongoing pest detection surveys keep American Samoa's farmers, extension agents, residents, and key decision-makers abreast of the current status of these pests that threaten the territory's agriculture and natural and managed environments.

4. Associated Knowledge Areas

KA Code	Knowledge Area
211	Insects, Mites, and Other Arthropods Affecting Plants
212	Pathogens and Nematodes Affecting Plants

Outcome #7

1. Outcome Measures

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

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Taro farmers and consumers are all interested in the disease resistance, yield and eating quality of the taro being produced in American Samoa. Taro is the main food crop of American Samoa.

What has been done
A taro improvement classical breeding and evaluation program has been in progress at ACNR for approximately 5 years. This is a long term project where the development of varieties of a quality suitable to be released to farmers may take several years.

Results
There have been several ACNR varieties produced with good yield and disease resistance but only average eating quality. In the last set of crosses, a traditional variety with good eating quality but poor resistance and yield has been introduced. Evaluation of new ACNR varieties is continuing.

4. Associated Knowledge Areas

KA Code	Knowledge Area
202	Plant Genetic Resources
212	Pathogens and Nematodes Affecting Plants

Outcome #9

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	141

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
In FY2017, there were still questions on the quality of the produce sold to the public, especially the School Lunch Program. The Department of Health cited or shut down farming businesses due to poor sanitation or use of illegal pesticides. Local produce has been rejected by the School Lunch Program because of poor quality due to lack of knowledge of better farming practices to ensure good quality produce.

What has been done
The Agriculture Extension program conducted 8 farm safety workshops and 5 pesticide trainings with farmers, schools and partners. The FCS program conducted 97 food safety workshops.

Results
85% of the farm safety workshops' participants and 90% the of pesticides safety trainings' participants acquired knowledge. The Agriculture Extension program assisted farmers and local government agencies with issues concerning farm safety and produce quality.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
205	Plant Management Systems

307	Animal Management Systems
601	Economics of Agricultural Production and Farm Management
703	Nutrition Education and Behavior
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
903	Communication, Education, and Information Delivery

Outcome #10

1. Outcome Measures

Number of recommended vegetable cultivars adopted by farmers.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	3

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Vegetable farmers and consumers in American Samoa are always interested in tomatoes that will grow in our local conditions, especially large-fruited varieties. There is no commercial production of large fruit size tomatoes locally and only very minimal production of local small fruit size tomatoes.

What has been done
Tomato variety trials to evaluate bacterial wilt disease resistance, heat tolerance, fruit size and yield have been conducted at ACNR over several years. A recent trial of varieties from one major seed supplier has identified 3 varieties that produce medium to large fruit and acceptable yield.

Results
These 3 varieties have been distributed to a few vegetable farmers to evaluate at their farms. They have had good results. Farmers will increase the production of large size tomatoes, hence consumers' demand and tomato consumption will increase, and producers/farmers will generate revenue.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
202	Plant Genetic Resources

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Other (Lack of staff; inefficient procurement processes; natural disasters; economic challenges)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

By the end of the FY 2017, the Agriculture Extension Program conducted 5 pesticide trainings with 90% of the participants being certified. The program also conducted 8 Farm Safety days with 85% of the participants acquiring knowledge. Based on focus groups and feedback, there are still needs for: 1. Improved varieties (traditional crops) 2. Vegetable gardening workshops/demonstrations 3. Pesticide Safety Education program 4. Progressive Agriculture Safety Days 5. Piggery waste management workshops 6. Farm visitations
ACNR's collaboration with the local department of agriculture in the Cooperative Agricultural Pest Survey program has for the first time provided sustained ongoing surveillance and early warning capability for exotic fruit flies, citrus greening disease, and exotic invasive ants. The plant clinic service, now in its 18th year, continues to provide pest diagnostics and management recommendations services to the community. This service should be more widely publicized as it remains underutilized. Ongoing vegetable variety trials and experimentation with locally produced growing media for seedling production are valuable to local farmers who come in seeking information or request farm visits to learn how to apply the findings on their farms. The taro breeding program is beginning to see results with two varieties entering final evaluation stages before possible release.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Health and Wellness

☑ Reporting on this Program

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 (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	4.0	0.0	4.0	0.0
Actual Paid	3.6	0.0	3.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
258916	0	292705	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

ASCC ACNR Extension agents continued to promote healthy living through outreach workshops and program activities in the schools and communities.The Extension Programs collected inputs from stakeholders through 36 Basic Nutrition workshops in the community, schools and at the Food Stamp Program. Moreover, inputs were collected from clients through surveys, the family enrollment form, 24-hour food recall, and behavior checklist instruments. The 4-H Program conducted 36 workshops with school agencies, community clubs, and after-school programs in physical and healthy activities to educate youth in health and wellness. The Forestry program conducted workshops on how forest health relates to healthy living. The Agriculture Extension program, EFNEP and the Family and Consumer Sciences Program continued to provide workshops and demonstrations on healthy living through farming and healthy eating.
Two health communications research projects were largely completed: "Trial Testing of a Household Based Health Promotion Intervention at the American Samoa WIC Program" and "Gestational Diabetes Health Communications Intervention Assessment." In both studies pre-and-post intervention assessment data has been gathered and is being analyzed to determine the efficacy of the interventions in promoting healthy behaviors for obese children and their families and increasing awareness and screening rates and improving outcomes for expectant mothers at risk for gestational diabetes.
ASCC ACNR continued 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.

2. Brief description of the target audience

All residents of American Samoa.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	2233	10610	1500	20100

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year:	2017
Actual:	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of health and wellness educational sessions/workshops conducted.

Year	Actual
2017	97

Output #2

Output Measure

- Number of research-related projects

Year	Actual
2017	3

Output #3

Output Measure

- Estimated number of persons exposed to ASCC ACNR generated mosquito-borne disease prevention messages

Year	Actual
2017	20000

Output #4

Output Measure

- Number of one-on-one technical assistance consultations.

Year	Actual
2017	200

Output #5

Output Measure

- 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.

Year	Actual
2017	200

Output #6

Output Measure

- Number of pregnant women who watch the gestational diabetes videos in the hospital prenatal clinic, look at the posters, and take the informational flyers.

Year	Actual
2017	162

Output #7

Output Measure

- Number of households that received the healthy behavior promotion placemats

Year	Actual
2017	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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 Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	700

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Obesity, overweight, poor nutrition, non-communicable disease, and food safety continued to be major issues of concern for both youth and adults in American Samoa. There is a continued need for more nutrition, vegetable gardening, and healthy living workshops to educate the community about living a healthier lifestyle.

What has been done
The FCS, EFNEP, Agriculture, Forestry and 4-H Programs conducted 97 workshops in nutrition, vegetable gardening, and healthy living in the schools and the community. Given the high prevalence of obesity and nutrition related problems in American Samoa, providing nutrition education to our people is a top priority of this program that we hope will help change the cultural attitudes and practices related to food and nutrition.

Results
About 70% of the participants who attended these workshops acquired knowledge and developed skills to prepare meals that are safe, balanced, and nutritious. Workshop participants also acquired knowledge in the areas of vegetable gardening, food safety, physical activity and exercise, and wellness. Participants also reported that they consumed more than one serving of fruits and vegetables a day. Learning how to maintain a vegetable garden, preparing meals that are safe, balanced, and nutritious and taking steps to live a physically active life can help the people of American Samoa in many ways. As noted, there is a high percentage of overweight and obesity in American Samoa and many of our people have non-communicable diseases. Home gardens are able to provide families with low-cost and sustainable access to fruits and vegetables, which can help lower the economic stress of having to purchase these food items. Eating more fruits and vegetables and being more physically are some practical things that our people can do with the hope of possibly reducing their risk of developing some form of non-

communicable disease. Reducing the strain that non-communicable disease has placed on our people is of vital importance because our medical center and public health clinics are working with limited resources, which makes it very difficult and challenging to provide our people with the care that many of these non-communicable diseases require.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #2

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	380

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Obesity, overweight, poor nutrition, non-communicable disease, and food safety continued to be major issues of concern for both youth and adults in American Samoa. There is a continued need for more nutrition, vegetable gardening, and healthy living workshops to educate the community about living a healthier lifestyle.

What has been done
The FCS program provided 12 workshops and food demonstrations in nutrition and food safety for more than 300 participants every month. The Agriculture Extension program conducted 8 vegetable gardening and 12 farm safety workshops in the schools and community.

Results
1,600 workshop participants learned about, prepared, and consumed healthy food at the workshops and activities provided by the FCS, EFNEP, and Agriculture Extension Programs. 53% of the participants utilized more locally grown food. Many people in American Samoa are affected

by the social, economic, and environmental problems that have impacted our territory due to the food safety concerns that our people face, the poor nutritional intake of our people, the rising prevalence of overweight and obesity, and the high percentage of non-communicable diseases that affect our people. Workshops that teach our people how to prepare healthy meals utilizing locally grown food is one way to help our people understand how we can take small steps to help alleviate some of the problems that are associated with some of our cultural attitudes and practices related to food and nutrition.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #3

1. Outcome Measures

Number of cases of mosquito-borne illnesses reported by local health department

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	247

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
American Samoa suffers from several mosquito-borne illnesses, including endemic filariasis and episodic outbreaks of dengue, chikungunya, Zika virus, and Ross River virus. Research on the biology of the vectors of these diseases in the local context is essential to developing effective and appropriate strategies for their control and the findings of this research must be made known to local decision-makers and the general public who must also play a role in vector control.

What has been done
American Samoa's 2016 Zika outbreak was followed by an outbreak of dengue in 2017. ASCC ACNR assisted the American Samoa Department of Health and officials from the U.S. Centers for Disease Control and Prevention and the Pacific Islands Health Officers' Association by conducting vector assessments and recommendations for villages on Tutuila and the Manu'a

islands, public and private school grounds, and the territory's used tire disposal system and by helping ASDoH and CDC with dengue cluster investigations in ten Tutuila villages.

Results
Results from the 2017 vector assessments and previous research were used in educational dengue prevention brochures and public service announcements disbursed via TV, radio, and newspaper; five Mosquito Action field day events for the public which were attended by over 900 community members and their families and broadcast on local radio; for a training program provided to 10 new ASDoH vector control staff; safety presentations for National Park staff and First Responder trainees; in testimony before two hearings of the local House Health Committee of the legislature; and in numerous interagency meetings and teleconferences addressing the dengue outbreak. Dissemination of research-based vector control information to the public and community leaders is essential to implementation of effective arbovirus prevention.

4. Associated Knowledge Areas

KA Code	Knowledge Area
721	Insects and Other Pests Affecting Humans
722	Zoonotic Diseases and Parasites Affecting Humans

Outcome #4

1. Outcome Measures

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. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
American Samoa suffers epidemic levels of obesity. Prevalence in adults is over 68% and children over 20%. As a result, chronic lifestyle diseases are a major problem. Prevention can occur through improving the social and physical environment to promote more healthy daily habits.

What has been done
In 2017 ACNR?s Health Communications Research and Media (HCRM) program developed, implemented and tested a home based intervention to promote childhood obesity reduction among American Samoan children, entitled, ?Trial Testing of a Household Based health Promotion Intervention at the American Samoa WIC Program.? The manager of American Samoa?s Women, Infant and Children (WIC) program (which is under the Department of Human and Social Services) had previously contacted the Health Communications Researcher about the materials, such as the film and the placemats, that HCRM had produced and how we could work together using these materials. Subsequently, HCRM wrote the project proposal, research design, and protocol, a MOU was developed and signed by American Samoa Community College and Department of Human and Social Services, and approval for the project to proceed was also obtained from American Samoa?s IRB Board. Two research assistants were then hired and trained to assist in conducting the study.?

Results
The interviews we conducted with the 100 caregivers and children who underwent the intervention indicate that the placemats in the home and the accompanying education process will produce positive outcomes in households, reducing the amount of sweet drinks and screen time, while increasing sleep, physical activity, and consumption of fruits and vegetables and water.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #5

1. Outcome Measures

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.

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
The adverse effects of gestational diabetes are well recognized. Mothers are at risk of pregnancy and labor complications, while fetuses may demonstrate high birth weight (complicating delivery) and hypoglycemia, requiring neonatal intensive care. In addition, both have increased risk of developing type 2 diabetes post-partum. Despite these risks and the presence of a well-established screening protocol, few women are receiving appropriate screening.

What has been done
Baseline data from a survey conducted at the hospital's prenatal clinic were analyzed, and the results were used in the writing of an intervention video script. A narrative (story telling) format was chosen, because evidence shows story telling formats are more effective for most audiences than a more conventional non-narrative health communication format. By the end of September all the scenes were shot, and the editing of the film was almost complete. The film will be shown in the prenatal clinic waiting area to supplement increased counseling on gestational diabetes. Post intervention, data will be gathered to assess the effect of the intervention.

Results
The full results from the GDM health communications intervention study cannot be given until all the data is analyzed over the following year. Preliminary results, however, indicate that showing the film HCRM produced entitled 'GDM Testing mo Lumana'i Manuia' in the prenatal clinic waiting room to pregnant women waiting for their doctor's appointments will effect positive changes for these women and their babies. Later, broadcast of the film on the local television station will expand the reach of that intervention.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

Programs are hindered by lack of capacity due to staff shortages, and lack of reliable and consistent transportation for the programs to provide services to the Manu'a islands.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Survey results indicate that 90% of the participants acquired knowledge, developed skills, or adopted the recommended practices from the outreach workshops. The participants appreciate that these programs are provided in the community to educate the people but would prefer receiving larger food portions.
ACNR's health communications research program is leading the way in American Samoa in developing a local model for producing much needed culturally appropriate, locally targeted, effective, evidence based, health communication products, such as films currently playing on hospital and clinic waiting room televisions. The program continued to provide research-based technical assistance in developing healthy behaviors communications strategies and materials to the Department of Human and Social Services WIC program, and to LBJ's prenatal clinic. Similarly, the entomology program continued to assist the health department in its public information campaigns for Zika and dengue prevention with research-based mosquito control information appearing on TV, radio, billboards, and print media.

Key Items of Evaluation

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Ecosystem

☑ Reporting on this Program

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	20%		25%	
124	Urban Forestry	20%		10%	
125	Agroforestry	20%		20%	
132	Weather and Climate	5%		5%	
135	Aquatic and Terrestrial Wildlife	5%		0%	
136	Conservation of Biological Diversity	10%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2017	Extension		Research	
	1862	1890	1862	1890
Plan	4.5	0.0	3.2	0.0
Actual Paid	3.6	0.0	3.3	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
258916	0	292705	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
0	0	0	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

The ASCC-ACNR Extension personnel worked closely with various communities and landowners in implementing stewardship plans geared towards sustainable forest management and natural resources. The program collaborated with private, communal, and public landowners in establishing and/or continuing multi-year forest stewardship plans for each site. Invasive plant management plans were also developed and implemented on specific sites; focusing on the enhancement of healthy forests by eradicating invasive plant species. In addition, technical services such as tree pruning, tree planting, and other services were provided to assist landowners with forest management needs. Community outreach presentations such as the "Climate Change Impacts on Forests" were presented to the various schools, villages, and church youth groups that visited the ASCC-ACNR compound or participated in other events such as the annual Arbor Week celebration. The program performed general greenhouse maintenance and plant production through seed collection, transplant and propagation tasks, and infrastructure improvement. ASCC-ACNR continued research with the local Department of Marine and Wildlife Resources to assess the conservation status of the Samoan swallowtail butterfly and threats to its survival and to increase local public awareness of the value of this and other species that are unique to the Samoan islands. A survey to document the fauna of ambrosia beetles in American Samoa was launched to provide the first detailed and extensive information on the diversity and abundance of these devastating pests in the territory. Overall, ASCC-ACNR collaborated with stakeholders and agency partners in conducting site visits, developing management plans, and performing various tasks that focus on the conservation, protection, and management of terrestrial ecosystems.

2. Brief description of the target audience

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

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2017	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	800	3000	1500	5000

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2017

Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2017	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of trees propagated and distributed.

Year	Actual
2017	1750

Output #2

Output Measure

- Number of group educational sessions conducted.

Year	Actual
2017	25

Output #3

Output Measure

- Number of one-on-one technical assistance/consultations

Year	Actual
2017	73

Output #4

Output Measure

- Numbers of GIS Maps/Posters

Year	Actual
2017	7

Output #5

Output Measure

- Number of research-related projects

Year	Actual
2017	2

Output #6

Output Measure

- Number of participants in program activities and workshops.

Year	Actual
2017	2300

Output #7

Output Measure

- Number of host trees of the endemic Samoan swallowtail butterfly produced and planted into suitable habitats.

Year	Actual
2017	300

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

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
7	Number of new habitats with host plants established in the field for reproduction of the endemic Samoan swallowtail butterfly.

Outcome #1

1. Outcome Measures

Number of improved watersheds and coastal areas

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	6

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Frequent and severe natural disturbances such as heavy rainfall or cyclones can alter landscapes within riparian zones and on steep slopes. In addition, human disturbances such as land use changes increase pollution and soil erosion in watershed areas. Other devastating effects from both disturbances include: pig wastes runoff, marine debris, soil erosion, invasive species, and forest conversion. These threats affect fresh water fishes, mangroves, marine life and coral reefs. American Samoa's wetlands, including coastal mangroves and fresh water marshes, are threatened by land filling for development and by sedimentation and nutrient overload from agro-forestry. These issues can adversely affect the conservation and environmental sustainability of urban forests, watersheds, and eventually marine habitats.

What has been done
The ASCC-ACNR Forestry Program conducted 11 workshops on implementing best management practices geared towards watershed conservation and management. The program also provided technical assistance, and built partnerships with villages, landowners, and environmental government agencies for improving forested areas in urban riparian zones.

Results
The ASCC-ACNR Forestry Program improved 4 watersheds and coastal areas through close partnership with the Coral Reef Advisory Group. Moreover, the installation of 4 Rain Gardens filtered the water runoff from impervious surfaces, thus preventing chemical pollutants from entering the streams and damaging marine habitats. The program established close partnerships among villagers and youth groups that promote continued watershed and coastal cleanups. The installation of Rain Gardens and organization of coastal cleanups have resulted in the protection of groundwater, drinking resources, and healthier marine habitats that provide economic benefits to local fishermen and villages. The watersheds will protect the forested lands, enhance fresh

water quality, and provide for recreational purposes such as hiking or swimming.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources

Outcome #2

1. Outcome Measures

Number of Forest Stewardship Plans

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	44

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Local villagers and communities rely heavily on forests for food resources and medicinal purposes. However, forests have been repeatedly threatened by population increase and conversion of forested areas to concrete infrastructure and building developments. These human disturbances have negatively impacted forest ecosystems. This stresses the importance of urban forests, community awareness, and forest management that will serve community needs while protecting forested lands. Invasive plant species have threatened and invaded the forests affecting the native flora and fauna and posing a threat to the habitats of native plants and animals.

What has been done
ASCC-ACNR addressed these issues by promoting agroforestry and forest protection practices towards landowners and/or villages. The ASCC-ACNR Forestry program conducted 15 workshops and activities with landowners to maintain good care of their forestland. Hands-on activities including technical assistance and educational support were also provided to landowners. The ASCC-ACNR Forestry Program assisted with identifying invasive species and best management practices that will protect urban trees. The ASCC-ACNR Forestry program continued to work closely with the Natural Resources Conservation Service (NRCS) to serve the

community by providing assistance with stewardship plans.

Results
A total of 44 landowners and farmers are working cooperatively with the program in managing their forestland and related issues. 34 landowners received technical assistance from the program. Forestry program have developed 7 new management plans for 7 landowners. Forest Stewardship staff continues to work closely with the GIS Specialist in conducting surveys for forest landowners. As a result of working closely with these 44 landowners, the riparian zones, urban forests, and agro-forested lands are sustained. Moreover, social and economic benefits such as increased crop production (traditional & fruit trees), tree stand improvement, soil conservation, watershed protection, water supply and water quality are realized.

4. Associated Knowledge Areas

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

Outcome #3

1. Outcome Measures

Number of invasive plant management plans

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	5

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The State-wide Assessment and Strategies for Forest Resources (SWARS) identified current and potential impacts of exotic invasive plants in American Samoa's forests. The rapid growth of these invasive plants harm forest ecosystems by outcompeting native plants for resources, thus reducing forest biodiversity and contributing to potential wildfires, soil erosion, and other adverse effects. Invasive plants will also reduce the production capacity of traditional, root, and vegetable crops plus fruit trees and medicinal plants that are essential for human health. Invasive species are one of the greatest threats to American Samoa's forests.

What has been done
The ASCC-ACNR Forestry Program's Cooperative Forest Health Protection and Invasive Plants Management Program focused on 5 infested invasive species sites. The program worked closely with landowners and agency partners at these heavily infested areas by collecting data, applying herbicide, and mechanically removing unwanted plants. Field agents continued to conduct maintenance work at all 5 infested sites.

Results
The ASCC-ACNR Forestry Program staff and ASCC-ACNR GIS Specialist visited the infested sites (total land area of 25 acres). Of the 25 acres, 21 acres are at Maloata (site 1 and 2); 1 acre at Auto; 1 acre at Alega; and 2 acres at Nuuuli. The ASCC-ACNR Forestry Program staff visited the sites and conducted management activities such as removing invasive plants; reforestation with native and traditional/cultural plants such as Instia bijuga (ifilele), Terminalia cattappa (talie), and Flueggea flexuosa (poumuli); and provided management recommendations. Some of the invasive species removed from the sites included Merremia peltata (fue lautetele), Castilla elastica (Panama rubber tree), and Falcataria moluccana (tamaligi palagi). The eradication and monitoring of these invasive species resulted in enhanced native species biodiversity, increase in food crops and fruit trees production, and improve the aesthetic & health of forested areas for recreational and conservation purposes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
125	Agroforestry
132	Weather and Climate

Outcome #4

1. Outcome Measures

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.

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

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

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	90

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
It is imperative for the Forestry program to conduct educational workshops and seminars in the community through church youth groups, public and private schools, and villages to share the knowledge of how important trees are to our daily lives.
Environmental degradation is an important issue in American Samoa. Communities and villages that are unaware of the conservation and protection of the natural environment and resources will continue to perform environmental degradation actions such as littering or burning that may harm watersheds, biodiversity, and forested areas. It is important to remind the communities that trees can help mitigate the effects of climate change, providing cool air and shade, and control soil eroding slopes.

What has been done
The ASCC-ACNR Forestry program conducted 2 environmental summer camps with 8 local environmental agencies; hosted 10 schools tours; served 44 landowners with technical assistance; and established 4 Rain Gardens with the assistance from 11 high school students and 3 Forestry Advisory Council members. Prior to the implementation of all these activities and projects, conservation and forest management education outreach presentations were presented to all participants and/or clients.

Results
The ASCC-ACNR Forestry Program and 8 local environmental agencies successfully hosted 2 summer camps serving 121 participants; assisted and served 642 school participants from 10 school tours both public/private; provided technical assistance to 62 private and communal landowners; and established 4 Rain Gardens with 19 participants. A total of 844 program participants increased their knowledge in the program through these educational workshops and activities. The high number of participants and outreach presentations strengthened interagency

partnerships and community awareness. The program will continue to promote environmental awareness and literacy, emphasizing the importance and benefits of ecosystems on environmental, economic, and human health.

4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
123	Management and Sustainability of Forest Resources
124	Urban Forestry
125	Agroforestry
132	Weather and Climate

Outcome #6

1. Outcome Measures

Number of research projects completed

Not Reporting on this Outcome Measure

Outcome #7

1. Outcome Measures

Number of new habitats with host plants established in the field for reproduction of the endemic Samoan swallowtail butterfly.

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Actual
2017	1

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Tutuila island, American Samoa, home to the single-island endemic Samoan swallowtail butterfly, represents the easternmost extent of native swallowtail butterflies in the Pacific Basin. Samoan

swallowtails once ranged across the much larger islands of independent Samoa to the west, but the species now appears to be absent there, leaving American Samoa as its last remaining refuge. Research to understand factors affecting this butterfly's abundance and conservation measures to enhance the resilience of its populations on Tutuila island are essential to its long-term survival as a unique and wonderful component of the natural heritage of the Samoan islands.

What has been done
ASCC ACNR has continued to work with the local Department of Marine and Wildlife Resources, the National Park of American Samoa, and the US Geological Survey to document factors affecting the abundance of the Samoan swallowtail butterfly by studying its immature stages in the native forest. In addition, ACNR is developing methods for production and outplanting of its host plant and for rearing the butterfly itself to enhance research and conservation efforts to understand and to benefit the species.

Results
The collaborative effort so far has resulted in extensive data on the occurrence of the immature stages as well as information on naturally occurring parasitism at various field sites. An efficient nursery production system for the host plant has been developed, producing thousands of plants for outplanting and for use in rearing. A dispersed stand of approximately 300 trees has been establshed in forest understory near the college in an area that previously lacked any hosts to support swallowtail reproduction and development. Some of the host trees have now reached reproductive maturity, and monitoring has documented sustained presence of all the butterfly's developmental stages on these trees. This is an ongoing project, but results to date promise substantial increases in knowledge about the species and substantial conservation outcomes.

4. Associated Knowledge Areas

KA Code	Knowledge Area
123	Management and Sustainability of Forest Resources
135	Aquatic and Terrestrial Wildlife
136	Conservation of Biological Diversity

V(H). Planned Program (External Factors)

External factors which affected 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,)

Brief Explanation

Loss of staff reduced program capacity

V(I). Planned Program (Evaluation Studies)

Evaluation Results

The ASCC-ACNR Forestry Program collected inputs from 844 stakeholders through focus group and evaluation sessions, and meeting minutes at: (3) Advisory Council meetings (30 participants); 12 workshops (844 participants) on conservation education, climate change, invasive species, and land management activities at 10 schools and 8 villages; and 10 schools tours (642 students) to forestry greenhouses and demonstration projects. The Forestry program staff, together with participants and partners, planted trees for climate change and energy sustainability. Based on the stakeholder feedback, clients are satisfied but there is still a need to understand more about climate change and sustainable energy. In addition, stakeholders requested for more technical assistance in terms of recent and efficient forest management practices (i.e. effective propagation techniques). The successful establishment of reproducing populations of the endemic Samoan swallowtail and its host plant where none previously existed is an early positive conservation outcome for the research effort focusing on this species.

Key Items of Evaluation

VI. National Outcomes and Indicators

1. NIFA Selected Outcomes and Indicators

Childhood Obesity (Outcome 1, Indicator 1.c)	
0	Number of children and youth who reported eating more of healthy foods.
Climate Change (Outcome 1, Indicator 4)	
0	Number of new crop varieties, animal breeds, and genotypes whit climate adaptive traits.
Global Food Security and Hunger (Outcome 1, Indicator 4.a)	
0	Number of participants adopting best practices and technologies resulting in increased yield, reduced inputs, increased efficiency, increased economic return, and/or conservation of resources.
Global Food Security and Hunger (Outcome 2, Indicator 1)	
0	Number of new or improved innovations developed for food enterprises.
Food Safety (Outcome 1, Indicator 1)	
0	Number of viable technologies developed or modified for the detection and
Sustainable Energy (Outcome 3, Indicator 2)	
0	Number of farmers who adopted a dedicated bioenergy crop
Sustainable Energy (Outcome 3, Indicator 4)	
0	Tons of feedstocks delivered.