

2012 American Samoa Community College Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

American Samoa Community College (ASCC) Division of Community and Natural Resources (CNR) is submitting this joint Extension and Research Plan of Work Update for the period 2012-2016.

This plan focuses on the Hatch and Smith-Lever projects being implemented as a result of stakeholder and program inputs. Consistent with NIFA priorities, CNR's "Planned Programs" are: 1) Human Health & Well-being, 2) Families, Youth and Communities, 3) Climate Change, 4) Childhood Obesity, 5) Global Food Security and Hunger, and 6) Sustainable Energy. Food Safety is part of Food Security.

Food Security continues to be a top priority. Because of increasing food prices, unstable economic conditions, climate change, fuel price upheavals, and a heavy reliance on imported and processed foods. American Samoa must consider Food Security a priority. Food security exists when all people at all times have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. In 2009, Governor of American Samoa, Togiola Tulafono, signed the executive order establishing the American Samoa Food Policy Council. The Chair of the Council is the Director of the ASCC CNR or the land grant program. The Council is an advisory council to the Governor. In 2009, American Samoa was devastated by an earthquake and tsunami. 34 people died. Preparation for food emergencies became an important issue as well as food safety in the event of food-borne illnesses. In 2011 CNR collaborated with the National Emergency Preparedness Training Center began developing guidelines with members of the Food Policy Council in the event of food-borne illnesses.

In FY 2010 CNR began work in aquaculture, aquaponics, and hydroponics. In 2010 CNR established its "Sustainable & Integrated Agriculture and Aquaculture Center" to house aquaculture and aqua-ponics activities under Extension." This work continued into 2011 and will continue in 2012.

CNR has finished construction on its "Fruits of Life" Greenhouse and will be propagating and promoting local backyard fruit trees. Samoans need to eat and grow more fruits for better health. In the interest of strengthening food security and improving diet, CNR will continue to promote vegetable gardening and planting of improved cultivars of taro, bananas, sweet potatoes (yams), and fruit trees in an effort to address food security and nutrition issues in American Samoa.

CNR plans to complete construction of its "American Samoa Nutrition, Exercise, Health & Wellness Community Research Center" in December 2011. It will house program in prevention and community-based research, the EFNEP program, health communications, food policy analysis and development, extension and instruction.

CNR Piggery Management program has helped to provide better protection of environment while providing boars to pig farmers.

The Land and the People

American Samoa is an unincorporated, unorganized Territory of the United States of America. It is the only American soil south of the equator. It is comprised of five mountainous, volcanic islands and two coral atolls in the Pacific Ocean between 11 and 14 degrees South latitude and 168 and 171 degrees West longitude. The main island of Tutuila is approximately 2,300 miles southwest of Hawaii and approximately 1,600 miles northeast of New Zealand. American Samoa lies just east of the International Dateline and is six time zones behind Washington, DC.

The total landmass of the Territory is approximately 76 square miles (48,767 acres) with Tutuila being the largest island of 49 square miles. The three islands of the Manu'a group comprise 22 square miles with Aun'uu Island, with Rose and Swain Atolls being about 1 square mile each. Two-thirds of the five volcanic islands have slopes greater than 30%, which are covered by paleotropical rain forest and surrounded by the fringing coral reef, extending in some areas to 2,000 feet offshore. The climate is hot and humid with over 200 inches of rain annually with temperatures ranging from a high of 94° F in February to a low of 73° F in August. American Samoa is subject to periodic hurricanes. Hurricanes Ofa and Val devastated the territory in 1990 and 1991 with sustained winds of over 120 miles per hour, and Heta struck the Territory in January 2004 causing an estimated \$150 million in damage. The winds blew at the rate of 165 to 170 miles per hour, damaged 70% of residents' homes and destroyed approximately 50% of agricultural development and rainforest. A year later, Hurricane Olaf wreaked destruction in the Manua Islands. With gusts of 190 miles per hour, the category 5 storm sent waves 30 - 40 high onto the shores of Ta'u, Ofu and Olosega Islands destroying homes, schools, roads and a large area of agriculture crops.

As noted earlier, in September 2009, an earthquake generated in the Tongan Trench about 150 miles away, generated a tsunami that struck American Samoa within 15 minutes killing 34 people and causing much agriculture damage in the low lying village plantations. In February 2010, Hurricane Rene passed thru the Samoas causing some agriculture damage in the Manu'a Islands

In the last 35 years, the population grew from 27,159 to 65,500 (estimate for June 2005), and the population density more than doubled from 357 to an estimated 862 people per square mile. According to the 2000 Population Census of American Samoa, the population is 88.2% Samoan with the median age being 21. The average household size was 6.1 people. The per capita income was \$4,357 with 5,072 of the 8,706 families (58.3%) with income below the poverty level. Results from the 2010 US Census are forthcoming.

Agriculture and Natural Resources

According to the 2003 Agriculture Census of American Samoa, (The results of the 2008 Agriculture Census for American Samoa are still unavailable), there were 7,094 farms that generated \$58,196,832 in agricultural commodities. These commodities, either sold on the local market, used for family consumption, or as contributions to *faalavelave* (cultural events including funeral, births, weddings, and chief title bestowals), were valued at an average of \$8,204 per farm. The average farm size declined from 7.1 acres in 1990 to 2.8 acres in 2003. The number of farmers, however, increased during that period from 1,126 to 7,094, in part due to the number of native Samoans returning from the US mainland after retirement to farm their communal lands. As population pressure forces farming up the steep slopes, issues regarding erosion, landslides, flooding, habitat destruction, and watershed loss become more important. Traditional methods of soil conservation and crop sustainability are no longer viable. With less land available for farming, for example, soil is no longer allowed to lay fallow for a few growing seasons to recover lost nutrients.

Human Health and Well-Being

Obesity and overweight, poor nutrition and lack of exercise, and food safety issues are major health problems in American Samoa (AS). In 2003, the World Health Organization in its publication "Diet, Food Supply and Obesity in the Pacific" found that 83.6% of the males and 87.6% of the females in AS had a body mass index greater than 25. In a similar yet to be published study in 2005, Davison et.al. found in a stratified random sample of 380 AS adolescents aged 11 to 18 years old that 32% and 34% were overweight and obese respectively. "These are by far, the highest rate documented for children of any ethnic group, now or in the past." the authors write in the study conducted in 2005. Moreover, a survey of 424 children between the ages of 1-10 years old in AS conducted in 2003 by a team from the University of Hawaii and Uniformed Services University, Maryland reported that: 11% of the 1-4 years old were too heavy for their height, 30% of the 5-10 year old children were overweight, and 15% were at risk of being overweight. The survey also found that 9% had blood sugar levels higher than recommended and more than 55% had blood cholesterol levels higher than recommended. The diets in AS are high in meats, starches, sugars, and fats and tend to be very low in vegetables, fruits and dairy products. Research on obesity rates continues to be conducted by CNR Research staff in 2012.

Families, Youth and Communities

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

Attitudes toward the Samoan culture or *fa'aSamoa* are changing as Samoans attempt to balance and reconcile Western (or American) and Samoan values. Therefore, learning opportunities should be provided to preserve the Samoan culture, language, and family values. According the Population Census 2000 the median age was 21. The American Samoa 2001 Youth Risk Behavior Survey of 914 high school students in six schools reported: 21% of the students carried a weapon, 37.3% smoked cigarettes, 8.7% drank alcohol, 21.7% used marijuana, 23.4% had sexual intercourse, and 20.9% attempted suicide. Juvenile crime is increasing. High school dropout in 2003 was 3%. Addressing the youth at risk issues will help the youth of American Samoa become productive, self-reliant, and contributing members of the community.

During the Constitutional Convention in 2010, it became evident that youth hold different attitudes and beliefs toward the matai (or traditional leaders) system and communal landownership -- the 2 pillars of the traditional Samoan way of life.

Issues

Because of its geographic isolation and the Territory's limited resources, there are no services making available different line of pigs to prevent inbreeding. The revived pig program will offer boar services, sell extension's animals to farmers to reduce their inbreeding, and buy or trade stock with farmers so that inbreeding is reduced. Also frozen semen will be imported for artificial insemination to benefit all.

In FY 2009, the CNR piggery was renovated through a cooperative agreement with ASEPA to demonstrate the animal waste options that are being recommended to the local pig farmers. CNR has

been demonstrating the use of composted pig manure in the growing of taro, and vegetable crops. These demonstrations of the waste management systems began, resulting in 26 pig farmers being approved by the USDA-NRCS Environmental Quality Incentive Program for implementing the dry litter piggery waste management option. An animal specialist has not yet been hired to spearhead the effort in addressing this issue. In 2011 a Piggery Management Summit was held at CNR with local and off-island farmers.

For the crop industry, cultivars of leaf blight resistant taro and black leaf resistant bananas will continue to be introduced in tissue culture, tested and released to the farming community to increase genetic variability. Field tests of imported tissue-cultured plantlets and taste tests will be continued in the effort to introduce a broad based disease resistant genetic diversity to the territory in addition to finding varieties that taste like the preferred Samoan varieties of old, i.e. Talo Niue and Talo Manu'a. These varieties and banana varieties of the FHIA lines are being disseminated in an effort to address the food security issue. In 2012, CNR will continue to import crop varieties from SPC.

In 2010, CNR will continue its seeds program. We have reestablished the vegetable seed sales to our clients.

For the fruit industry, the priority was to rejuvenate the program's fruit tree orchard by introducing new fruit tree varieties. For the varieties that performed well, workshops would have been conducted to teach farmers and interested homemakers the different methods of asexual propagation so that each home will have a diverse variety of fruits for the children to enjoy. A fruit tree greenhouse to spearhead the "Fruits for Life" project is currently under construction. With a variety of fruit trees in the back yard to enjoy, parents would not have to purchase apples and oranges, peaches and pears or other imported fruits. We were hoping that this would affect an import replacement scheme for the Territory. The program has been hampered by the inability to recruit a fruit tree specialist. Pesticide efficacy tests of reduced risk chemicals will continue to complement the IPM strategies for the different economic crops. Because of its geographic isolation and relative small natural resource base, there has been no effort to develop an agriculture export industry. Instead, the American Samoa Marketing and Local Producers' directories was to have been revived to address the local marketing issue. This program has been on hold because a marketing person has not yet been identified to spearhead this effort.

Because of the steep slopes and high rainfall, a natural terracing demonstration has been installed using vetiver grass (*Veteverial zizanioides*) as a vegetative barrier. Work on this will continue with vegetables planted in the alley between the barriers.

Monitoring the health of our streams will continue to be a focus. In addition to stream water chemistry, flora, and fauna, we have added coliform and *E. coli* monitoring. It is hoped that with the water quality program, ASCC-CNR and their partners will be able to assist villagers and landowners in identifying sources of contamination through GIS mapping of piggeries and advise leaders on either relocating point-sources of contamination or mitigating their impact on streams through approved sewage treatment systems. Information on water quality will also be provided to aquaculture farmers utilizing indigenous species, who use the streams as a source of water for their operations. ASCC-CNR will continue to be strong advocates for promoting watershed stewardship practices, especially among school children, by making the public aware of the rich inheritance of stream animals that sustained their ancestors and that may offer commercial opportunities for present and future generations.

Aquaculture provides a means to alleviate compromised fisheries, create opportunities for displaced fishermen, and provide a sustainable and nutritionally important staple for impoverished and traditional cultures alike. The environmental conditions in American Samoa are ideal for culturing both marine and freshwater tropical fish and invertebrates. Additionally, the availability of fishmeal from local tuna canneries makes the formulation of low-cost feeds for aquatic organisms feasible in order to reduce a major portion of operational expenses. There are currently efforts to produce Nile tilapia, giant clams, Pacific threadfin, and mangrove crab. The success of such ventures will rely heavily on the expertise, technical assistance and presence of a Sea Grant Extension Agent based in American Samoa.

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

Families, 4-H and Nutrition (F4HN) professional and paraprofessional staff will continue to use an integrated approach to provide nutrition education program to youth, homemakers, community residents, and other traditional and nontraditional clients. The 4-H program also has been hampered by personnel attrition and the unsuccessful search for replacements. The Agriculture Extension Service staff will continue to emphasize the production of local vegetables in their effort to help F4HN clients begin gardening projects. F4HN staff will continue to conduct workshops, presentations, and demonstrations in the villages, schools, churches, to government agencies, and community groups on developing and testing recipes using locally grown produce. Recipes have been given out to the participants with the rationale that if more fresh vegetables are readily available, more will be used in home meals. More vegetables cooked at home translate to more vegetables eaten and improved health of families. The F4HN personnel will continue to distribute nutrition educational handouts such as the Pacific Food Guide Pyramid, newly published English/Samoan recipe book, calendars, posters, and other nutrition materials to food stamp recipients, students, teachers, homemakers, and other clients.

Community awareness programs on the negative impacts of obesity, overweight, poor nutrition, lack of physical activity, and food safety issues will be implemented. Sports, aerobics, and other exercise programs are planned for schools, work place, and village settings as alternative physical activity programs. Furthermore, F4HN staff will conduct food safety workshops and demonstrations about safe food handling, storage and preparation to youth, childcare providers, WIC participants, Food Stamp clients, homemakers, and other clients. Demonstrations will be provided to school age children and adults on the correct way to wash hands to prevent food borne illness. F4HN personnel will continue to partner with local, regional, and national agencies, organizations, and institutions in planning, developing, and implementing programs to address obesity and overweight, poor nutrition and lack of physical activity, and food safety issues for both youth and adults in American Samoa. The inability of the F4HN program to recruit a nutritionist has greatly reduced the impacts of the program.

More joint projects will be undertaken with the AS Department of Agriculture, the Samoan Affairs Office, AS Department of Education, AS Environmental Protection Agency, AS Public Health, AS Department of Commerce, the AS Soil and Water Conservation District and of course the USDA local offices of NRCS, FSA and RC&D. Cooperative work with other land grant universities in Hawaii, Guam, Northern Marianas and Micronesia will also increase.

A priority issue has been the recruitment of qualified professionals. Positions in plant pathology, nutrition, fruit extension, marketing extension, livestock extension, 4-H personnel, and F4HN agents have yet to be filled which have set back our program expectations and impacts tremendously. There is need for a two pronged approach where we must offer higher salaries for these positions so that these can be filled by off-island experts. While this is being implemented, there is a need to build local capacity in staff development. Program funds must be allocated and approved for these capacity building efforts. CNR finalized a contract in May 2011 to hire a Plant Pathologist and is very close to finding a Forestry Researcher.

ASCC CNR has two offices in Manu'a, one on the large island of Ta'u and another in Luanu'u (Ofu and Olosega islands). The only office on the main island of Tutuila is at the CNR offices. Feedback from clients in the central and eastern districts of Tutuila have expressed a need for a satellite office more

convenient to them. This has been placed on hold due to the lack of personnel. In 2010 CNR began partnering with the American Samoa Power Authority to provide distance education workshops to residents of Manu'a Islands.

We share many of the same issues with our Pacific neighbors. The Secretariat of the Pacific (SPC) has proved to be a good partner in helping to address these issues through training and providing tissue culture. However, funds or limited resources has quickly become a problem.

These are the priority issues that will be addressed by the Hatch and Smith-Lever Programs in American Samoa 2012-2016 Plan of Work.

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	14.0	0.0	14.0	0.0
2013	14.0	0.0	14.0	0.0
2014	14.0	0.0	14.0	0.0
2015	14.0	0.0	14.0	0.0
2016	14.0	0.0	14.0	0.0

II. Merit Review Process

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

- Combined External and Internal University External Non-University Panel

2. Brief Explanation

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

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

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

III. Evaluation of Multis & Joint Activities

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

Not required to report

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

Not required to report

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

Not required to report

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

Not required to report

IV. Stakeholder Input

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

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

- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey of selected individuals from the general public

Brief explanation.

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

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

1. Method to identify individuals and groups

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

Brief explanation.

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

All workshops conducted by CNR extension will be evaluated for information regarding What next? and Where do we go from here? Focus groups are being planned for our underserved clients in the Manu'a Islands. All farm visits conducted by CNR Agriculture Service will be documented and will contain sections where farmers will identify their problem areas. This information will be used to direct resources in research. The CNR advisory group's responsibility is to prioritize and bring focus to the stakeholder concerns.

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

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Survey of the general public
- Meeting specifically with non-traditional groups

- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (Focus group sessions)

Brief explanation.

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

3. A statement of how the input will be considered

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

Brief explanation.

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

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Human Health and Well-being
2	Families, Youth and Communities
3	Climate Change
4	Childhood Obesity
5	Global Food Security and Hunger
6	Sustainable Energy
7	Food Safety

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Human Health and Well-being

2. Brief summary about Planned Program

Projects under the Human Health and Well-being planned program are tailored to address obesity and overweight, poor nutrition, lack of physical activity, food safety and food security issues, and vector control against dengue, leptospirosis and other diseases. F4HN professional and paraprofessional staff will continue to use an integrated approach to provide nutrition education program to youth, homemakers, community residents, and other traditional and nontraditional clients. The Agriculture Extension Service staff will continue to emphasize the production of local vegetables in their effort to help F4HN clients begin gardening projects. Agriculture Extension will continue their efforts in disseminating the disease resistant varieties of taro and bananas, vegetable seeds/seedlings, and sweet potatoes to help address the food security issue. Once a tropical fruit person is on board, the emphasis will include propagating fruit trees for the back yard. Improved fruit trees stocks and high nutritional value citrus and acai palms will be imported and propagated for distribution to the public. The Fruit tree greenhouse is currently under construction. F4HN staff will conduct workshops, presentations, and demonstrations in the villages, schools, churches, government agencies, and community groups on developing and testing recipes using locally grown produce. Recipes will be given out to the participants with the rationale that if more fresh vegetables are readily available, more will be used in home meals. More vegetables cooked at home translate to more vegetables eaten and improved health of families. The F4HN personnel will continue to distribute nutrition educational handouts such as the Pacific Food Guide Pyramid, newly published English/Samoan recipe book, calendars, posters, and other nutrition materials to students, teachers, homemakers, and other clients. Community awareness programs on the negative impacts of obesity, overweight, poor nutrition, lack of physical activity, and food safety issues will be implemented. Sports, aerobics, and other exercise programs will be implemented in the schools, work place, and village settings as alternative physical activity programs. Furthermore, F4HN staff will continue to conduct food safety workshops and demonstrations about safe food handling, storage and preparation to youth, childcare providers, WIC participants, Food Stamp clients, homemakers, and other clients. Demonstrations will be provided to school age children and adults on the correct way to wash hands to prevent food borne illness. When a nutritionist is hired, the partnering with local, regional, and national agencies, organizations, and institutions in planning, developing, and implementing programs to address obesity and overweight, poor nutrition and lack of physical activity can be addressed. ASCC CNR will continue to join forces with the local departments of public health, EPA, agriculture, and USDA NRCS in developing a media campaign focused on what people can do to safeguard their families from contracting leptospirosis. When an animal extension person is on board, work will continue on the leptospirosis issue. Because of our success in bringing programs and information to the villages, the local office of homeland security has asked ASCC CNR to join with them in developing an overall avian influenza strategy for the Territory. ASCC CNR Entomologist and staff will participate in collaborative research on disease-carrying mosquitoes to strengthen the scientific basis for vector control efforts against endemic filariasis and potential exotic threats, including dengue, Ross River virus, West Nile virus, and chikungunya virus.

How successful the effort in addressing the issues in this planned program will be, is dependent on the recruitment of a nutritionist, a tropical fruit person and a livestock person. How long term the impacts will be will also be dependent on the capacity building efforts for the local staff, i.e. using Smith Lever funds to send staff off-island to Hawaii or the US mainland for Bachelor's, Masters and PhD degrees. As explained in the overview, American Samoa has had problems hiring and retaining qualified professionals.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	40%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	20%		30%	
721	Insects and Other Pests Affecting Humans	10%		20%	
722	Zoonotic Diseases and Parasites Affecting Humans	10%		30%	
724	Healthy Lifestyle	20%		10%	
	Total	100%		100%	

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

1. Situation and priorities

Obesity and overweight, poor nutrition and lack of exercise, food safety issues, dengue, and leptospirosis are major health problems in American Samoa (AS). Food security, also, is of great concern as 95 - 97% of all foods are imported. This will be a continued focus in the 2012 - 2016 POW.

In 2003, the World Health Organization in its publication "Diet, Food Supply and Obesity in the Pacific" found that 83.6% of the males and 87.6% of the females in AS had a body mass index greater than 25. In a similar yet to be published study in 2005, Davison et.al. found in a stratified random sample of 380 AS adolescents aged 11 to 18 years old that 32% and 34% were overweight and obese respectively. Moreover, a survey of 424 children between the ages of 1-10 years old in AS conducted in 2003 by a team from the University of Hawaii and Uniformed Services University, Maryland reported that: 11% of the 1-4 years old were too heavy for their height, 30% of the 5-10 year old children were overweight, and 15% were at risk of being overweight. The survey also found that 9% had blood sugar levels higher than recommended and more than 55% had blood cholesterol levels higher than recommended.

The diets in AS are high in meats, starches, sugars, and fats and tend to be very low in vegetables, fruits and dairy products. Food safety related issues such as improper food handling and storage contributed to 1,299 cases of unspecified diarrhea reported in 1994. Furthermore, 14 cases of salmonellosis and six cases of food poisoning reported by LBJ (2004) could be attributed to improper food handling. Many cases of food borne illness are self treated and are not reported.

The new focus in food security is being addressed by making available staple food planting materials to anyone who has available land and is interested in cultivating them. Disease resistant cultivars of taro and bananas in addition to nutrient dense traditional crops including Soa'a, and Sulasula bananas and

sweet potatoes (yams) are being disseminated.

A 1999 survey by PacELF found 17% of residents had been infected with the parasite that causes lymphatic filariasis. Over 3,000 cases of dengue occurred in the territory during a 3-month period of the most recent dengue outbreak in 2001, and about 44% of the territory's people were infected in the 1979-1980 regional outbreak of Ross River virus. These diseases can be vectored by mosquito species occurring in AS. Source reduction--the elimination of water-holding containers that serve as breeding sites for the vectors--is recommended as the best way to control these vectors. CNR research seeks to help improve mosquito control efforts in the territory by collaboratively working to answer key questions about the efficacy and feasibility of source reduction. Therefore, programs addressing obesity and overweight as major health problems; poor nutrition and lack of physical activity as unhealthy behaviors; food safety issues; dengue and other mosquito-borne disease threats; and leptospirosis are top priority issues for the next five years. Because of the additional hatch funding in FY 07, American Samoa is currently constructing the Research Health and Wellness Center facility.

2. Scope of the Program

- In-State Extension
- In-State Research

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

1. Assumptions made for the Program

Funding and staffing will continue.

Community coalitions and agency collaborations and partnerships will continue.

Clients will learn and change behaviors and lifestyles.

Obesity and overweight can be prevented and managed.

If more vegetables are easily available in home gardens, more will be cooked, more eaten with better health resulting.

With more practical information on leptospirosis given out to the public by the various agencies, because we all "sing the same song" and no confusing, conflicting information is disseminated, people will implement what is recommended.

Priorities will not change.

Mosquitoes can be controlled

Samoan translation of materials will be needed

2. Ultimate goal(s) of this Program

To live healthier lifestyles.

To have a backyard garden in every household

- To have a variety of fruit trees grown in every backyard.
- To provide knowledge base for effective mosquito vector control.
- To assure that local food production is encouraged to offset the down turn in the global economy.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	3.0	0.0	3.0	0.0
2013	3.0	0.0	3.0	0.0
2014	3.0	0.0	3.0	0.0
2015	3.0	0.0	3.0	0.0
2016	3.0	0.0	3.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Nutrition education workshops.
- Local produce (vegetable & fruit) recipe development and testing workshops.
- Vegetable gardens will be established with interested homemakers and other clients.
- Demonstrations of vegetable dishes with recipes passed out.
- Food preparation, handling, and storage demonstrations.
- Food safety workshops and demonstrations.
- Nutrition awareness media (radio, TV, newspaper) programs.
- Development, translation, and distribution of calendar, posters, brochures, and other educational materials.
- Aerobics, sports, vegetable gardening, and other physical activity programs.
- Research biology and control of disease-carrying mosquitoes.
- Communicate results via research reports, brochures, seminars, TV, and individual contacts with other agencies
- Construct new facility for health programs.
- Conduct nutrient analysis of local crops and food.

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

Extension	
Direct Methods	Indirect Methods

<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Visitations) ● Other 2 (Public meetings) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● Other 1 (video produced program) ● Other 2 (calendar)
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3. Description of targeted audience

All residents of American Samoa are the target audience including recipients of the Food Stamp and WIC programs, Mental Health Program clients, village and church women's organization members, homemakers, farmers, students, interested individuals, children and youth program participants.

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	1500	7000	1500	8000
2013	2000	7000	1500	8000
2014	2000	7000	1500	8000
2015	2000	7000	1500	8000
2016	2000	7000	1500	8000

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	1	0	1
2014	0	0	0
2015	1	0	1
2016	0	0	0

V(H). State Defined Outputs

1. Output Target

- Number of research projects completed

2012:0	2013:0	2014:0	2015:1	2016:1
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- Number of Nutrition educational workshops.

2012:50	2013:50	2014:50	2015:50	2016:50
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- Number of vegetable gardening workshops.

2012:5	2013:5	2014:5	2015:5	2016:5
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- Number of vegetable gardens established

2012:50	2013:50	2014:50	2015:50	2016:50
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- Number of different recipes using local produce given out

2012:20	2013:20	2014:20	2015:20	2016:20
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- Number of food safety workshops conducted

2012:30	2013:30	2014:30	2015:30	2016:30
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- Number of publications/brochures/posters/calendars.

2012:1	2013:1	2014:1	2015:1	2016:1
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- Number of exercise and physical activity programs completed

2012:40	2013:40	2014:40	2015:40	2016:40
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- Number of nutrient-dense traditional crop varieties disseminated

2012:12	2013:12	2014:12	2015:12	2016:12
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- Number of collaborative projects with other agencies/organizations

2012:3 2013:4 2014:4 2015:4 2016:4

- Number of awareness activities with school children.

2012:20 2013:20 2014:20 2015:20 2016:20

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of program participants that acquired knowledge and developed skills in nutrition, vegetable gardening, nutritious meal preparation, food safety and health and physical activities
2	Number of people eating more vegetables as a result of the vegetable gardening project
3	Number of program participants that prepared and consumed more economical and nutritious meals.
4	Number of program clients that adopted balance diets utilizing local produce and healthy foods.
5	Number of program clients who adopted safer food handling, storage, and preparation practices.
6	Number of program clients that increased participation in physical activities and exercises
7	Number of program clients that lived healthier lifestyles
8	Number of clients involved in collaborative projects.
9	Number of villages using ASCC CNR generated information to control mosquitoes
10	Number of nutrient analysis conducted for local crops and food.

Outcome # 1

1. Outcome Target

Number of program participants that acquired knowledge and developed skills in nutrition, vegetable gardening, nutritious meal preparation, food safety and health and physical activities

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:400 2013:400 2014:400 2015:400 2016:400

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of program clients who adopted safer food handling, storage, and preparation practices.

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Number of program clients that lived healthier lifestyles

2. Outcome Type : Change in Condition Outcome Measure

2012:1000 2013:1000 2014:1000 2015:1000 2016:1000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

Number of clients involved in collaborative projects.

2. Outcome Type : Change in Action Outcome Measure

2012:400 2013:400 2014:500 2015:500 2016:500

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 721 - Insects and Other Pests Affecting Humans
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 9

1. Outcome Target

Number of villages using ASCC CNR generated information to control mosquitoes

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

3. Associated Knowledge Area(s)

- 721 - Insects and Other Pests Affecting Humans

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 10

1. Outcome Target

Number of nutrient analysis conducted for local crops and food.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Natural disasters: hurricanes, cyclones, tsunamis, flooding and others
Changes in funding (loss of formula funds)
Changes in staffing (loss of staff)
Changes in institutional priorities and access to facilities
Changes in collaborators' abilities or willingness to continue as partners
Clients' family and church obligations
Health
Politics
Cultural Acceptance
Exotic pests and diseases
Loss of staff reduced program capacity

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

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

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Sampling
- Telephone
- Structured
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Families, Youth and Communities

2. Brief summary about Planned Program

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

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

To address the youth at risk challenges and to align with NIFA Organizational Chart, the 4-H Youth Program will be a separate program from the Family and Consumer Science and Nutrition Program.

Additionally, a 4-H Program Manager, Specialists, and additional 4-H agents need to be hired. Finding local qualified staff has been difficult. How great the outcomes and impacts will be is dependent on the ability to hire and retain qualified personnel. Program funds need to be made available for local staff to continue their studies to obtain Bachelors, Masters and PhD degrees in counseling, youth and human development, sociology and related fields.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

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

1. Situation and priorities

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

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

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

2. Scope of the Program

- In-State Extension

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

1. Assumptions made for the Program

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

2. Ultimate goal(s) of this Program

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

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	3.0	0.0	3.0	0.0
2013	3.0	0.0	3.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2014	3.0	0.0	3.0	0.0
2015	3.0	0.0	3.0	0.0
2016	3.0	0.0	3.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

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

Extension	
Direct Methods	Indirect Methods

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

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

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	500	1000	1000	1700
2013	500	1000	1000	2000
2014	500	1000	1000	2000
2015	500	1000	1000	2000
2016	500	1000	1000	2000

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	0	0	0
2014	0	0	0
2015	0	0	0
2016	0	0	0

V(H). State Defined Outputs

1. Output Target

- Number of entrepreneurial and job readiness workshops

2012:50	2013:50	2014:50	2015:60	2016:60
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- Number of apprenticeship and career shadowing programs

2012:5	2013:5	2014:5	2015:5	2016:5
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- Number of sewing workshops and demonstrations

2012:50	2013:50	2014:50	2015:50	2016:50
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- Number of arts and crafts workshops and demonstrations

2012:50	2013:50	2014:50	2015:50	2016:50
----------------	----------------	----------------	----------------	----------------

- Number of vegetable gardening and marketing projects

2012:10	2013:10	2014:10	2015:10	2016:10
----------------	----------------	----------------	----------------	----------------

- Number of Samoan cultural workshops and demonstrations

2012:25	2013:25	2014:25	2015:25	2016:25
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- Number of vegetable gardens established

2012:50	2013:50	2014:50	2015:50	2016:50
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- Number of parenting and character counts workshops

2012:20	2013:20	2014:25	2015:25	2016:30
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- Number of 4-H fairs, camps and summer programs

2012:3	2013:3	2014:3	2015:3	2016:3
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- Number of youth-at-risk issues workshops, conferences, forums and seminars

2012:20	2013:20	2014:20	2015:20	2016:20
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- Number of public awareness media (radio, TV, newspaper) programs

2012:10	2013:10	2014:10	2015:10	2016:10
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- Number of publications/brochures/posters/calendars

2012:3	2013:3	2014:3	2015:5	2016:5
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- Number of videos

2012:2	2013:2	2014:2	2015:2	2016:2
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- Number of new 4-H Youth village clubs

2012:2	2013:2	2014:2	2015:2	2016:2
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- Number of new 4-H Youth School clubs/enrichment programs.

2012:2	2013:2	2014:2	2015:2	2016:2
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- Number of new 4-H leaders and volunteers.

2012:10	2013:10	2014:10	2015:10	2016:10
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V(I). State Defined Outcome

O. No	Outcome Name
1	Number of program participants that acquired knowledge and developed skills in resources management (poverty), parenting, Samoan culture, and youth at risk issues
2	Number of participants generating revenues from resource management activities
3	Number of participants starting home-based and small businesses
4	Number of participants securing employment in the private and public sectors
5	Number of people continuing to grow and sell vegetables as a result of the vegetable gardening and marketing project
6	Number of program participants that improved parent and children relationship

7	Number of program clients that developed a sense of pride and appreciation of the Samoan culture and language.
8	Number of program clients who became self-reliant, productive, and contributing members of the society
9	Number of program clients who made successful transition from youth at risk behaviors to clean, healthy, and esteemed lifestyles

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

2012:550 2013:550 2014:550 2015:550 2016:550

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of participants generating revenues from resource management activities

2. Outcome Type : Change in Action Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of participants starting home-based and small businesses

2. Outcome Type : Change in Action Outcome Measure

2012:6	2013:6	2014:6	2015:10	2016:10
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3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number of participants securing employment in the private and public sectors

2. Outcome Type : Change in Condition Outcome Measure

2012:6	2013:10	2014:10	2015:10	2016:10
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3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of people continuing to grow and sell vegetables as a result of the vegetable gardening and marketing project

2. Outcome Type : Change in Action Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Number of program participants that improved parent and children relationship

2. Outcome Type : Change in Condition Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Number of program clients that developed a sense of pride and appreciation of the Samoan culture and language.

2. Outcome Type : Change in Condition Outcome Measure

2012:350 2013:350 2014:500 2015:500 2016:500

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

Number of program clients who became self-reliant, productive, and contributing members of the society

2. Outcome Type : Change in Condition Outcome Measure

2012:200 2013:200 2014:200 2015:200 2016:200

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

Number of program clients who made successful transition from youth at risk behaviors to clean, healthy, and esteemed lifestyles

2. Outcome Type : Change in Condition Outcome Measure

2012:150 2013:150 2014:150 2015:150 2016:150

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

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

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

Description

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

2. Data Collection Methods

- Sampling
- Whole population
- Telephone
- On-Site
- Structured
- Unstructured
- Observation
- Tests

Description

Accomplishment reports
Enrollment forms
Visitation reports
Focus group sessions records
Annual surveys by ASCC CNR CES
Qualitative information gathered from home and village visits and interviews
Business records and licenses
Employment records
Written evaluation forms

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

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

Forests are essential for addressing the impacts of climate change. American Samoa's forests has the ability to slow down water flow and absorb nutrients thus preventing flooding, soil erosion, and contamination of coral reefs, streams, aquifers, and wetlands. Moreover, forests replenish important fresh water aquifers, protect reefs, shelter and protect shorelines and coastal communities from hurricanes, storm surges, tsunamis and floods. American Samoa's traditional agricultural production comes from agroforestry systems where crops such as cocoa, coconut, breadfruit, various fruit trees, and other trees are interplant with taro, yams, bananas, giant taro, and other crops.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

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

1. Situation and priorities

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

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

2. Scope of the Program

- In-State Extension
- In-State Research

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

1. Assumptions made for the Program

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

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

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

2. Ultimate goal(s) of this Program

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

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

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	0.5	0.0	0.2	0.0
2013	0.5	0.0	0.1	0.0
2014	0.5	0.0	0.1	0.0
2015	0.5	0.0	0.1	0.0
2016	0.5	0.0	0.1	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

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

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

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

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

Extension

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

3. Description of targeted audience

Scientists involved in environmental resources protection.

Policymakers in the Executive and Legislative branches of local government.

The Public.
 Students
 Farmers
 Forestry clients

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	15	150	200	300
2013	15	150	200	300
2014	20	200	200	300
2015	20	200	200	300
2016	20	200	200	300

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
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Year	Research Target	Extension Target	Total
2012	0	1	1
2013	1	1	2
2014	0	2	2
2015	0	2	2
2016	0	2	2

V(H). State Defined Outputs

1. Output Target

- Technical Reports/Peer-reviewed papers/Media reports

2012:1 2013:2 2014:2 2015:2 2016:2

- Number of conservation and climate change workshops completed.

2012:5 2013:5 2014:5 2015:5 2016:5

- Number of plants propagated at nursery for climate change projects.

2012:400 2013:400 2014:400 2015:400 2016:400

- Number of workshops' participants.

2012:50 2013:50 2014:50 2015:50 2016:50

- Number of trees planted for climate change projects.

2012:400 2013:400 2014:400 2015:400 2016:400

- Number of acres (infested by invasive species) surveyed using GPS/GIS.

2012:5 2013:5 2014:5 2015:5 2016:5

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

Bacterial and sediment loads in stream runoff.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number of agroforestry projects established.

2. Outcome Type : Change in Action Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of watershed projects established.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Number of coastal stabilization projects completed.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 5

1. Outcome Target

Number of acres infested by invasive tree species controlled.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 6

1. Outcome Target

Number of GPS/GIS maps developed.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of Forest Stewardship Management plans completed.

2. Outcome Type : Change in Action Outcome Measure

2012:5 2013:5 2014:5 2015:5 2016:5

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Flooding events (frequency, duration, intensity) will play the largest role in influencing both bacterial and sediment loads in streams.

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

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

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Sampling
- Telephone
- Structured
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

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

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

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

1. Situation and priorities

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

2. Scope of the Program

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

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

1. Assumptions made for the Program

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

2. Ultimate goal(s) of this Program

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

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	2.0	0.0	2.0	0.0
2013	2.0	0.0	2.0	0.0
2014	2.0	0.0	2.0	0.0
2015	2.0	0.0	2.0	0.0
2016	2.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

We will select among seven primary intervention studies for children aged 2 to 8 years that show a positive effect on at least one of our primary outcomes: Body Mass Index (BMI), food intake, or physical activity. Specific interventions will be selected during 2011 based on consultations with our multi-state partners, local advisory committees, and healthcare professionals.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● TV Media Programs

3. Description of targeted audience

Children aged 2 to 8 years. Mothers and grandmothers.

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	80	500	80	800
2013	80	500	80	800
2014	80	500	80	800
2015	80	500	80	800
2016	80	500	80	800

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	1	0	1
2014	1	0	1
2015	1	0	1

Year	Research Target	Extension Target	Total
2016	1	0	1

V(H). State Defined Outputs

1. Output Target

- Decrease in BMI percentiles, changes in food intake, changes in physical activity level among children 2 to 8 years of age.
2012:80 2013:200 2014:300 2015:400 2016:500

V(I). State Defined Outcome

O. No	Outcome Name
1	Prevalence of overweight and obesity decreasing in this cohort over time

Outcome # 1

1. Outcome Target

Prevalence of overweight and obesity decreasing in this cohort over time

2. Outcome Type : Change in Action Outcome Measure

2012:80 2013:100 2014:200 2015:300 2016:400

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Public Policy changes
- Government Regulations

Description

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

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

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

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Sampling
- Telephone
- Structured
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

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

demonstration facility and will continue to demonstrate several potential species production systems and aquaponics. The facility will also demonstrate freshwater and marine aquarium systems to demonstrate potential culture of ornamental fish and invertebrate organisms for export into the global ornamental industry. The American Samoa Environmental Protection Agency is not concerned with effluent from aquaculture farms but is concerned with piggery effluent. CNR will continue to provide technical support to help pig farms become ASEPA compliant by using pig effluent in concert with tilapia culture. Science curriculum in local high schools can be enhanced with aquaculture activities, especially in resource-poor areas like Manu'a. Aquaponics systems are easy to maintain and provide an excellent tool for learning the scientific method as well as to generate interest in agriculture, aquaculture and marine science.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	5%		0%	
124	Urban Forestry	5%		0%	
125	Agroforestry	5%		0%	
133	Pollution Prevention and Mitigation	5%		0%	
202	Plant Genetic Resources	10%		0%	
205	Plant Management Systems	15%		0%	
211	Insects, Mites, and Other Arthropods Affecting Plants	5%		0%	
212	Pathogens and Nematodes Affecting Plants	5%		0%	
215	Biological Control of Pests Affecting Plants	5%		0%	
306	Environmental Stress in Animals	5%		0%	
307	Animal Management Systems	15%		0%	
315	Animal Welfare/Well-Being and Protection	5%		0%	
401	Structures, Facilities, and General Purpose Farm Supplies	5%		0%	
601	Economics of Agricultural Production and Farm Management	5%		0%	
604	Marketing and Distribution Practices	5%		0%	
	Total	100%		0%	

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

1. Situation and priorities

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

first priority in the animal industry. ASCC-CNR hosted the first Dry Litter Technology Educational Workshop in the Pacific for piggery operators and local government technical staff on February 24, 2011. The workshop goal is to "expand the DLT system throughout the Pacific region in order to protect water resources, maintain intrinsic cultural values tied to the pig, and increase food security through improved, locally adaptable and sustainable animal waste management production practices." A total of 62 pig operators, regulators, extension agents, researchers and private consultants representing nine countries participated in the workshop. According to workshop organizers, "American Samoa has been the leader in the deployment of the dry litter technology for Small-scale piggeries, due to commitments, innovation and resources from key partnerships." For the crop industry, cultivars of leaf blight resistant taro and black leaf resistant bananas will continue to be introduced in tissue culture, tested and released to the farming community to increase genetic variability. We will continue with the vegetable seed sales to our clients. Vegetable variety demonstrations to identify cultivars that will perform well in our hot, humid and wet tropical environment will continue. For the fruit industry, the priority is to rejuvenate the program's fruit tree orchard by introducing new fruit tree varieties. For the varieties that perform well, workshops will be conducted to teach farmers and interested homemakers the different methods of asexual propagation so that each home will have a diverse variety of fruit for the children to enjoy. Then parents will not have to purchase apples and oranges, peaches and pears to feed their children thereby affecting an import replacement scheme for the Territory. CNR staff will continue to contact and visit counterparts in Independent Samoa to collect fruit trees seeds and seedlings for multiplication and propagation in the "Fruits for Life" greenhouse. We will continue to recruit for a Fruit Tree Specialist. Because of the steep slopes and high rainfall, soil erosion studies along with contour hedgerows and other soil conservation methods will be employed in trials and demonstrations. The demonstrations of 5 different species of planting materials have been replaced by vetiver grass (*Chrysopogon zizanioides*), one of the five, which showed the greatest promise in reducing soil erosion and creating "natural" terraces. Pesticide efficacy tests of reduced risk chemicals are being conducted to complement the IPM strategies for the different economic crops. ASCC-CNR staff will continue to work with the University of Hawaii Sea Grant College Program (UH Sea Grant) Extension Agent in continuing regional aquaculture activities. UH Sea Grant has had a permanent presence in American Samoa since 2002. Major challenges on island include identifying an economical solution to procuring aqua-feeds, identifying new aquafarmers, assisting new farmers in procuring start-up funding for their farms, reducing agricultural pollution, and poor education. Off-island suppliers can provide feeds for those with sufficient funds. However, most of the farmers on island are not able to afford these feeds. ASCC-CNR has worked with UH Sea Grant and established a feeds production lab on ASCC campus. Using the lab reduces the price of 50 pounds of feed from \$25 to between \$12 and \$17 by allowing farmers to use locally available feedstuffs like taro, breadfruit, bananas, and fishmeal. Off-island feeds manufacturers have been unwilling to ship their products to American Samoa leaving local feeds production as the only option for farmers that demand high quality feeds. ASCC-CNR and University of Hawaii Sea Grant Program (UH Sea Grant) staff will continue to work with the Office of the Congressman of American Samoa, Star-Kist Samoa, the Oceanic Institute, the University of Hawaii Sea Grant College Program, the American Samoa Department of Agriculture, the Samoan Family Sunfish Cooperative, Inc., and the Secretariat of the Pacific Community to obtain fish meal from Star-Kist Samoa for use in feeds production; analyze local agriculture products/byproducts and fish meal to create recipes for tilapia feeds, and increase production and marketing of farmed fish in American Samoa. CNR has constructed a freshwater aquaculture demonstration facility and will continue to demonstrate several potential species production systems and aquaponics. The facility will also demonstrate freshwater and marine aquarium systems to demonstrate potential culture of ornamental fish and invertebrate organisms for export into the global ornamental industry. The American Samoa Environmental Protection Agency is not concerned with effluent from aquaculture farms but is concerned with piggery effluent. CNR will provide technical support to help pig farms become ASEPA compliant by using pig effluent in concert with tilapia culture. Science curriculum in local high schools can be enhanced with aquaculture activities, especially in resource-poor areas like Manu'a. Aquaponics systems are easy to maintain and provide an excellent tool for learning the scientific method as well as to generate interest in agriculture and marine science.

2. Scope of the Program

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

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

1. Assumptions made for the Program

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

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

Farmers will invest time and money to improve their operation.

Funding for CNR activities will remain adequate.

Priorities will not change.

CNR will recruit qualified personnel necessary to maintain its activities.

There will be a need for Samoan translations.

2. Ultimate goal(s) of this Program

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

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

To increase production and marketing of livestock and farmed fish.

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

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	7.0	0.0	4.0	0.0
2013	7.0	0.0	4.0	0.0
2014	7.0	0.0	4.0	0.0
2015	7.0	0.0	4.0	0.0
2016	7.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

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

Extension

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

3. Description of targeted audience

Small and resource-limited farmers and ranchers, commercial farmers, aquaculture farmers, forestry

clients, hobby farmers, general public, school students, 4-H members, church youth and other community group members.

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	1100	6500	700	3000
2013	1100	6500	700	3000
2014	1100	6500	700	3000
2015	1100	6500	700	3000
2016	1100	6500	1000	7000

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	1	0	1
2014	0	0	0
2015	1	0	1
2016	0	0	0

V(H). State Defined Outputs

1. Output Target

- Number of research projects completed.

2012:1	2013:1	2014:1	2015:1	2016:1
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- Number of cultivars of disease resistant taro, banana, and improved varieties of sweet potato multiplied and released.

2012:25	2013:25	2014:25	2015:25	2016:25
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- Number of improved taro setts, banana suckers/bits, and/or sweet potato slips disseminated.

2012:6000	2013:6000	2014:6000	2015:6000	2016:6000
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- Number of plant clinic diagnoses and recommendations made to assist farmers.

2012:30	2013:30	2014:30	2015:30	2016:30
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- Number of vegetable variety demonstrations completed.

2012:5	2013:5	2014:5	2015:5	2016:5
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- Number of new fruit tree varieties introduced.

2012:5	2013:5	2014:5	2015:5	2016:5
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- Number of fruit tree propagation workshops.

2012:5	2013:5	2014:5	2015:5	2016:5
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- Number of pigs sold/traded and piglets born from AI.

2012:20	2013:30	2014:40	2015:40	2016:40
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- Number of local crops prepared and sent to offisland laboratory for nutrient analysis.

2012:1	2013:1	2014:1	2015:1	2016:1
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- Number of pesticide efficacy tests completed.

2012:1 2013:1 2014:1 2015:1 2016:1

- Number of Pesticide Applicators' Training workshops conducted.

2012:4 2013:4 2014:4 2015:4 2016:4

- Number of biological control species introduced or augmented to control local pests.

2012:0 2013:0 2014:1 2015:0 2016:1

- Number of video production.

2012:2 2013:2 2014:3 2015:3 2016:3

- Number of Tilapia released from breeding program.

2012:50 2013:50 2014:50 2015:50 2016:50

- Number of candidate species culture trials completed.

2012:2 2013:2 2014:2 2015:2 2016:2

- Number of tilapia feed trials completed.

2012:1 2013:1 2014:1 2015:1 2016:2

- Number of vetiver grass (*Chrysopogon zizanioides*), slips planted at nursery for distribution to farmers/clients.

2012:300 2013:300 2014:300 2015:300 2016:300

- Number of collaborative projects with other government agencies.

2012:7 2013:7 2014:7 2015:7 2016:7

- Number of vegetable gardening workshops conducted.

2012:5 2013:5 2014:5 2015:5 2016:5

- Number of vegetable gardens established.

2012:50

2013:50

2014:50

2015:50

2016:50

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of farmers growing improved varieties of taro, bananas, and sweet potatoes.
2	Number of farmers targeting problems according to recommendations on plant clinic form.
3	Number of farmers/clients growing improved vegetable cultivars.
4	Number of people growing improved budded/grafted or airlayered fruit trees in their back yards.
5	Number of pig farmers upgrading their stock.
6	Number of reduced risk pesticides recommended for use.
7	Number of pesticide applicators trained and certified.
8	Number of farmers growing improved genetic stocks of tilapia.
9	Number of farmers upgrading their farms to aquaponics.
10	Number of farmers making their own tilapia feeds.
11	Number of farmers integrating their piggeries with tilapia culture.
12	Number of farmers/stakeholders involved with collaborative projects.
13	Number of farmers/clients planting vetiver grass (<i>Chrysopogon zizanioides</i>), for soil conservation.
14	Number of local crops nutrient analysis completed.
15	Number of agroforestry projects established.

Outcome # 1

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:20 2013:20 2014:20 2015:20 2016:20

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number of farmers/clients growing improved vegetable cultivars.

2. Outcome Type : Change in Action Outcome Measure

2012:100 2013:100 2014:100 2015:100 2016:100

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

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

2. Outcome Type : Change in Condition Outcome Measure

2012:20 2013:20 2014:20 2015:20 2016:20

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of pig farmers upgrading their stock.

2. Outcome Type : Change in Condition Outcome Measure

2012:10 2013:10 2014:10 2015:10 2016:10

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Number of reduced risk pesticides recommended for use.

2. Outcome Type : Change in Condition Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 7

1. Outcome Target

Number of pesticide applicators trained and certified.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:20 2013:20 2014:20 2015:20 2016:20

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 8

1. Outcome Target

Number of farmers growing improved genetic stocks of tilapia.

2. Outcome Type : Change in Action Outcome Measure

2012:5 2013:5 2014:5 2015:5 2016:5

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 9

1. Outcome Target

Number of farmers upgrading their farms to aquaponics.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 10

1. Outcome Target

Number of farmers making their own tilapia feeds.

2. Outcome Type : Change in Action Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 11

1. Outcome Target

Number of farmers integrating their piggeries with tilapia culture.

2. Outcome Type : Change in Action Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 12

1. Outcome Target

Number of farmers/stakeholders involved with collaborative projects.

2. Outcome Type : Change in Action Outcome Measure

2012:750 2013:750 2014:800 2015:800 2016:800

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 13

1. Outcome Target

Number of farmers/clients planting vetiver grass (*Chrysopogon zizanioides*), for soil conservation.

2. Outcome Type : Change in Action Outcome Measure

2012:5	2013:5	2014:5	2015:5	2016:5
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3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources
- 124 - Urban Forestry
- 125 - Agroforestry
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 14

1. Outcome Target

Number of local crops nutrient analysis completed.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1	2013:1	2014:1	2015:1	2016:1
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3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 15

1. Outcome Target

Number of agroforestry projects established.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

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

Loss of staff reduced program capacity

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

Introduction of exotic pests and invasive species

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

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

Unresolved experiment station land boundary issues

Inability to use funds because of procurement process and procedures

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

Description

{NO DATA ENTERED}

2. Data Collection Methods

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

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

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

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

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

1. Situation and priorities

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

2. Scope of the Program

- In-State Extension

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

1. Assumptions made for the Program

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

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

2. Ultimate goal(s) of this Program

Reduced production of undesirable emissions.
 Reduced dependence on fossil fuels

Reduced energy costs
 Cleaner and healthier environment

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	3.0	0.0	0.0	0.0
2013	3.0	0.0	0.0	0.0
2014	3.0	0.0	0.0	0.0
2015	3.0	0.0	0.0	0.0
2016	3.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

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

Extension	
Direct Methods	Indirect Methods

<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Displays) 	<ul style="list-style-type: none"> ● Billboards ● Newsletters ● TV Media Programs ● Other 1 (videos) ● Other 2 (brochures)
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3. Description of targeted audience

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

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	50	300	100	500
2013	50	300	100	500
2014	50	300	100	500
2015	50	300	100	500
2016	50	300	100	500

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	0	0	0

Year	Research Target	Extension Target	Total
2014	0	1	0
2015	0	0	0
2016	0	1	0

V(H). State Defined Outputs

1. Output Target

- Number of energy conservation workshops completed.

2012:5 2013:5 2014:5 2015:5 2016:5

- Number of trees propagated at nursery for urban tree plantings.

2012:400 2013:400 2014:400 2015:400 2016:400

- Number of fuel wood trees propagated for project.

2012:400 2013:400 2014:400 2015:400 2016:400

- Number of collaborative projects with other government agencies and non-government organizations.

2012:5 2013:5 2014:5 2015:5 2016:5

- Number of printed educational materials distributed.

2012:50 2013:50 2014:50 2015:50 2016:50

- Number of energy efficient materials and items demonstration and display.

2012:5 2013:5 2014:5 2015:5 2016:5

V(I). State Defined Outcome

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

Outcome # 1

1. Outcome Target

Number of workshop participants who acquired knowledge about energy conservation.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:50 2013:50 2014:50 2015:50 2016:50

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of workshop participants who adopted energy conservation practices.

2. Outcome Type : Change in Action Outcome Measure

2012:50 2013:50 2014:50 2015:50 2016:50

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of trees planted for energy conservation projects.

2. Outcome Type : Change in Action Outcome Measure

2012:400 2013:400 2014:400 2015:400 2016:400

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number of community assessments completed.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1 2013:1 2014:1 2015:1 2016:1

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of trees planted for fuel wood projects.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:400 2013:400 2014:400 2015:400 2016:400

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Percentage of savings in electricity bills.

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2 2013:2 2014:2 2015:2 2016:2

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

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

2. Outcome Type : Change in Action Outcome Measure

2012:5 2013:5 2014:5 2015:5 2016:5

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

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

2. Outcome Type : Change in Knowledge Outcome Measure

2012:5 2013:5 2014:5 2015:5 2016:5

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

- Competing Programmatic Challenges
- Other (Staff Recruitment)

Description

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

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

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

Description

{NO DATA ENTERED}

2. Data Collection Methods

- Sampling
- Telephone
- Structured
- Observation

Description

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

CNR will increase public awareness about best practices in food safety not only on the farm but in school gardens and community gardens, the home, the workplace, and even at church and village functions.

The community must understand the human pathogens in the environment and how to reduce risks found in the different environments.

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

4. Program duration : Short-Term (One year or less)

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

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

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

1. Situation and priorities

{NO DATA ENTERED}

2. Scope of the Program

- In-State Extension
- In-State Research

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

1. Assumptions made for the Program

{NO DATA ENTERED}

2. Ultimate goal(s) of this Program

{NO DATA ENTERED}

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	0.0	0.0	0.0	0.0
2013	0.0	0.0	0.0	0.0
2014	0.0	0.0	0.0	0.0
2015	0.0	0.0	0.0	0.0
2016	0.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

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

Develop public awareness activities and media.

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

Extension

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

3. Description of targeted audience

{NO DATA ENTERED}

V(G). Planned Program (Outputs)

1. Standard output measures

Target for the number of persons(contacts) to be reached through direct and indirect contact

	Direct Contact Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2012	0	0	0	0
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0

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

2012:0 2013:0 2014:0 2015:0 2016:0

3. Expected Peer Review Publications

Year	Research Target	Extension Target	Total
2012	0	0	0
2013	0	0	0

Year	Research Target	Extension Target	Total
2014	0	0	0
2015	0	0	0
2016	0	0	0

V(H). State Defined Outputs

1. Output Target

V(I). State Defined Outcome

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

Description

{NO DATA ENTERED}

V(K). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

Description

{NO DATA ENTERED}

2. Data Collection Methods

Description

{NO DATA ENTERED}