

# 2017 University of the Virgin Islands Combined Research and Extension Plan of Work

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## I. Plan Overview

### 1. Brief Summary about Plan Of Work

St. Croix, St. Thomas, St. John and Water Island, comprise the primary inhabited U. S. Virgin Islands (USVI), consisting of 68 islands and cays located in the Caribbean Basin. The USVI is an incorporated territory of the United States, located 1,075 miles east/southeast of Miami and 50 miles east of Puerto Rico. Christopher Columbus named the islands in 1493. Settled by Denmark in the 17th century, they were purchased from the Danish Government by the United States in 1917.

St. Croix, forty miles south of St. Thomas, is the largest island - approximately 84 square miles displaying topography, which is flat, compared to St. Thomas and St. John. Christiansted and Frederiksted are the two main towns of St. Croix; both are noted for their architectural quality and historical significance. Christiansted was the former Danish West Indies capital, and Frederiksted is known for its continuous shorelines. St. Thomas is approximately 32 square miles and is well known for its mountainous terrain, excellent harbors and heavy cultivation of the land. Three miles east of St. Thomas and smaller than Manhattan, St. John is approximately 20 square miles (52 square kilometers); and two-thirds of this island has been designated a U. S. National Park.

While the economy of the U. S. mainland has been prospering, the economic status of the U. S. Virgin Islands is in serious trouble, compounded by an unemployment rate exceeding 15%. Living in an insular area separated from the U.S. mainland, the territory's people are exposed to a plethora of problems associated with living in a depressed economy, where practically all consumer products must be imported.

### Vital Statistics

The statistical information provided below is a clear indication that it is important to implement the CES planned programs in the U.S. Virgin Islands. The information detailed below was obtained from the 2010 U.S. Census Bureau.

Table 1. Population by Island

Total

St. Croix

St. Thomas

St. John

106,405

50,601

51,634

4,170

100%

47.6%

48.5%

3.9%

Table 2. Population by Age and Sex

Item	
Total	
Total Population	106,405
Male	50,867
Female	55,538
Median Age	39.2
Under 5 years	7,500
5 to 19 years	22,197
20 to 39 years	24,682
40 to 64 years	37,638
65 years and over	14,388

Table 3. Household Income Characteristics

Item	
All Islands	
St. Croix	
St. Thomas	
St. John	
INCOME	
Mean Household Income	
	\$52,261
	\$50,528
	\$53,487
	\$56,404
Median Household Income	
	\$37,254
	\$36,042
	\$38,232
	\$40,644
Mean Family Income	
	\$60,537
	\$57,015
	\$63,436
	\$68,392
Per Capita Income	
	\$21,362
	1983

\$22,458

\$25,730

HOUSEHOLDS BELOW POVERTY THRESHOLD (2009)

Number of Households

4,789

2,776

1,895

118

% of all Households

11.1%

6.4%

4.4%

0.3%

Poverty continues to be a critical issue facing the Virgin Islands and the need to create jobs is a major priority. Significant contributing factors for residents to seek public assistance are the lack of financial planning and large families. Of the 82,634 (38,764 males and 43,870 females) individuals who are 16 years and older only 54,541 had earning power.

Numbers do not tell the whole story, though. Most teen parents are unmarried, have not graduated from high school, and are unemployed. A growing number of the children in the territory do not have adequate financial resources. Changes in family structure and more mothers having to work to supplement their families' incomes increase the stress and the need for community support of families. Providing programs that will assist families in dealing with the multiple stresses that families face in the community is essential.

The planned programs of CES have been structured to deal with the problems facing the V.I. community. The University of the Virgin Islands in its recent Strategic Plan placed special emphasis on excellent teaching, innovative research and responsive community service. Community engagement has become a major priority of the University, thus, our programs have been developed to address the critical issues facing the V.I. community.

Programs have been developed that target agriculture producers and their families. We have also consolidated programs by putting our 4-H Youth Development, 4-H Volunteer Development and Management, and 4-H Summer Camp into one program to deal with all 4-H activities. This consolidation has been made because of the reduction of staff and to maximize program efficiency. Our nutrition programs have also been consolidated to address the problems of obesity, hypertension, diabetes, and other diseases caused by poor nutrition. Our food safety and EFNEP programs have been combined to address the incidents of food-borne illness and outbreaks in the Virgin Islands so that food-borne illness does not become a menace to the health of the population. There will be workshops, classes, and demonstration targeting low income audiences, seniors, and school aged children. The Cooperative Extension Service will maintain partnerships with various departments of the local government and other organizations in order to successfully administer these programs.

The Agricultural Experiment Station (AES) is located on the St. Croix Campus of the University of the Virgin Islands. AES is part of the Research and Public Service Component. The U.S. Virgin Islands are semi-arid, subtropical islands in the Lesser Antilles. The islands are marked by easterly trade winds which provide a nearly constant breeze and alternating periods of drought and heavy rain. A long tradition of agriculture in St. Croix provides an ideal location for our research mission. AES conducts basic and applied research to meet the needs of the local agricultural community in increasing production, improving efficiency, developing new enterprises, preserving and propagating germplasm unique to the Virgin Islands, and protecting the natural resource base. AES has research activity in animal science,

aquaculture, biotechnology, forage agronomy, and fruit and vegetable crops. Our vision is to generate information that leads to improved agricultural practices in the Virgin Islands and the Caribbean Region by conducting scientific research. Our research programs will be increasingly influenced by the needs of the public and the farming community and by research conducted by other agricultural research institutions. Using new technologies, the results of our research will be disseminated more widely to farmers and the international scientific community.

Because of our small size and limited scope of programs our research tends to focus on locally relevant topics. A more equitable distribution of human resources within AES has been undertaken in an attempt to provide each program with adequate support staff to conduct their research activities.

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	33.3	null	9.7	null
2018	33.3	null	9.7	null
2019	33.3	null	9.7	null
2020	0.0	0.0	9.7	0.0
2021	0.0	0.0	9.6	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**

A merit review process is followed. Scientists submit a copy of their proposal to the Director to ensure that the projects are in alignment with the University's strategic plan, the Research and Public Service Component's Master Plan and the AES strategic plan. The Director then attaches evaluation forms and sends the proposal to three people who are qualified to judge the proposal. These individuals can be within the University or external to the University in the agriculture community. Each proposal is reviewed by at least three reviewers. A cover letter explains the purpose of the review and the individual is asked to sign the form indicating their approval or disapproval of the project. Copies of these forms are maintained in the administrative offices of AES.

Programs developed by agents and specialists within CES will be sent to the State Program Leader for approval and submission to the Associate Director and State Director for their input and budget allocations. The programs will then be forwarded to the Vice Provost for Research and Public Service and the University's Office of Sponsored Programs for comments and approval. Accepted programs would be forwarded to the Extension Advisory Council for its input and approval. Approved programs will be shared with specific commissioners in the Virgin

Islands Government for comments and input. The final programs will then be sent to the State Director for implementation.

### **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?**

The approved University of the Virgin Islands Strategic Plan, Pathway to Greatness, focuses on excellent teaching, innovative research and responsive community service. The planned programs that CES have developed are in line with the University's vision of transforming the future of the Virgin Islands. There are programs specifically targeting limited resources individuals, children, youth and families at-risk, and other low income clientele. Nutrition programs have been developed targeting the general population addressing the issues of obesity, hypertension, diabetes and other diseases caused by poor nutritional. Programs have been developed that addresses the critical issues of cistern water contamination and septic water seepage. There are programs also addressing air quality issues and household products safety. Sustainable agriculture programs have been developed to assist farmers in the efficient utilization of water and the marketing of their products to the local population. There are volunteer development and management programs addressing the recruitment of volunteers and the problems faced by the young people in the community.

AES faculty are participating in four multi-state research projects: 1) Impacts of Stress Factors on Performance, Health, and Well-Being of Farm Animals (W-2173); 2) Genetic improvement of adaptation and reproduction to enhance sustainability of cow-calf production in the Southern United States (S-1064); 3) Scaling Microirrigation Technologies to Address the Global Water Challenge(W-3128); 4) Plant Genetic Resources Conservation and Utilization (S009). The Director is also the Administrative Advisor, and a participant as Animal Scientist, in a Southern Coordinating Committee (SCC- 081 Sustainable Small Ruminant Production in the Southeastern U.S.). Faculty in AES mentor students supported by funds from a grant from the USDA-NIFA Resident Instruction Grants Program for Institutions of Higher Education in Insular Areas. All of these projects address issues that are of concern to our stakeholders as evidenced by input obtained from our Advisory Council as well as our informal contacts with producers, students and other faculty.

Issues brought up by stakeholders are evaluated within AES to determine the feasibility of developing research projects to answer the question being posed. If funds can be obtained and the project is relevant to a wide section of the community then it would be incorporated into the research plan within the appropriate program. Sometimes this can be done by including it in a new or existing multistate research project or even an existing hatch project. If it is not suitable for that support then scientists try and see if they can identify another funding source and submit a grant application to conduct the research.

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

The planned programs have been developed with special emphasis on the needs of the under-served and under-represented populations. All efforts will be made to advertise all planned programs in all the local newspapers, radio stations and television to ensure participation of under-served and under-represented people in the planned programs. CES will ensure that all programs reach new emerging or unreached clientele within the U.S. Virgin Islands. Adjustments will be made to program schedules and contents to assist under-served

and under-represented populations of the Virgin Islands. Shortcourses, workshops, demonstrations and other activities would be held primarily in the evenings, Saturdays, and Sundays to accommodate the needs of the clientele. Planned programs will be adjusted to meet the needs and interest of customers with disabilities. All efforts will be made to increase the membership of under-represented racial/ethnic minority group members in structured 4-H/Youth and family community clubs, and special interest and/or study groups.

Almost all of the farming community in the USVI can be considered small scale and limited resource farmers. The limitations include land, water, infrastructure support, available markets and the high cost of production in the islands. Most of our projects focus on evaluating or developing production methods that can be adopted by small scale farmers with limited resources with minimal financial input. The ethnic makeup of the farming population is predominantly African-American and Hispanic.

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

Faculty involved in each program establish a set of outcomes for the program. The outcome may consist of the number of local farmers who adopt a new technology or farming practice or how many use a new variety of plant or breed of livestock. The impacts are reported as to how these new technologies, varieties or breeds improve the overall operation of individual stakeholders.

Research results and outcomes are communicated to the community through seminars, workshops and training sessions coordinated with the Cooperative Extension Service on St Croix, St Thomas and St John. Attendance is monitored at these events and some follow up is conducted by CES faculty and staff.

The planned programs have described all the significant expected outcomes and impacts that would make a difference in the Virgin Islands community.

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

Effectiveness will be enhanced by targeting issues that are highly relevant to tropical agriculture. The programs will address local needs identified by stakeholders through various forms of input. The information generated by the research projects will be disseminated to the appropriate audience in the appropriate format so that it can have the most impact.

Efficiency of programs will be improved by using stakeholder input to develop research projects that are relevant to the local community and can eventually have an impact. Issues that are relevant to the USVI, as well as other locations, will also be included in research projects. Encouraging faculty to develop cooperative efforts with scientists outside the region will provide access to technology or assistance that is not available locally.

As indicated above, research results and outcomes are communicated to the community through seminars, workshops and training sessions coordinated with the Cooperative Extension Service on St Croix, St Thomas and St John. Attendance is monitored at these events and some follow up is conducted by CES faculty and staff.

In an effort to reach the greatest number of stakeholders and also maximize our resources, these planned programs have collaborated with other government and private agencies in the coordination of programs and activities. These interagency coordination and collaborations will make CES more efficient in reaching its target audience, leveraging more resources to cover more activities, and will have enhanced program delivery. These joint efforts will also help in providing a holistic approach to our planned programs thus making

them more effective.

The collaborations and coordinations that we have developed in our planned programs will increase program participation and producer confidence in having all their concerns addressed in a timely manner.

#### **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 specifically with non-traditional groups

##### **Brief explanation.**

Due to the small geographic area of the Virgin Islands, AES scientists work in close contact with the local agricultural community, which fosters considerable communication and responsiveness to farmers' needs. AES programs hold field days that are advertised in the local media (print, TV, radio). Virgin Islands farmers and interested citizens tour current projects and have an opportunity to comment on the work that is being performed. Selected farmers are invited to AES seminars when the topic is relevant to their operations.

The Cooperative Extension Service (CES) involved all stakeholders and their representatives in the process of developing educational activities for this plan of work. Because of the increasing diversity of the Virgin Islands' community, the CES Advisory Council has been increased to 15 community leaders who are representatives of the respective programs in Extension. Their main purpose is to provide guidance and direction to the agency in its community outreach activities. They advise, counsel, and confer on the development of annual and long-range plans; represent the attitudes, opinions and feelings of stakeholders with regards to CES' outreach activities and assist in the development of new activities; assist in communication between CES and its stakeholders. These 15 members are also members of different community groups and some are also members of the 4-H Advisory Council and the Homemakers Club. This group meets twice annually. Special meetings are held as needed by the Council or are called at the discretion of the CES State Director. This group evaluates Extension programs and makes recommendations that are used to modify or refocus the different programs. Community groups are sometimes invited to enable them to give ideas and information to be used in the development of CES programs. The Chairman of the CES Advisory Council will also be a member of AES Advisory Council.

At the last Advisory Council meeting, members of the Council were able to review AES' and CES' planned programs and give recommendations on the different programs. They recommended other programs and activities that they thought would benefit the farming community and the general population.

**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
- Open Listening Sessions
- Needs Assessments
- Use Surveys
- Other ((Individual, direct contacts from the community))

**Brief explanation.**

The Agricultural Experiment Station's Advisory Council consists of farmers that represent a cross-section of the Virgin Islands farming community (plants, aquaculture and livestock). All AES Program Leaders sit in on the meetings as well as a representative from the Cooperative Extension Service. The farmers are given the opportunity to raise their concerns. AES scientists try to incorporate researchable issues into their research programs.

Non-researchable concerns are referred to CES or appropriate federal or state agencies for action.

CES would continue to evaluate its programs by giving participants of all seminars, meetings, and workshops survey forms to complete. Farm and clientele visits would be made occasionally to determine the impact of the programs, and suggestions made by clientele would be recorded and used to make improvement in the educational activities.

CES would continue to conduct listening sessions and public meetings to determine program focus and program upgrade. Listening sessions and other program activities would be advertised through CES quarterly newspapers, the University and Research and Public Service newsletters, and the local television and radio stations.

**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
- Survey specifically with non-traditional groups
- Meeting with invited selected individuals from the general public



- Other (Clients contact AES with specific requests)

**Brief explanation.**

In addition to our formal stakeholder meeting we are in contact with the wider stakeholder community frequently. When we assist with workshops we get feedback that we incorporate into our research programs as appropriate.

CES will continue to collect information and recommendations from its stakeholders at their quarterly meeting. Surveys of CES stakeholders will be conducted twice a year to get stakeholders involvement in setting priorities and addressing issues in the community. CES will hold two general public meetings where information will be advertised on the radio, television, and newspapers to ensure that the Virgin Islands population has an equal chance of letting us know their concerns. This will also help in updating our programs to take care of community needs.

**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 Action Plans
- To Set Priorities

**Brief explanation.**

Stakeholders input will be considered in the budget allocation of programs. Stakeholders involvement in CES programs will help in setting priorities and addressing emerging issues in the community. CES will continue to strengthen its collaboration with the Department of Agriculture, the Department of Health, the Department of Labor, the Department of Education, the Department of Human Services, V.I. Housing Authority, and the Office of the Governor in addressing at-risk issues in the community. Stakeholders input will be used in redirecting Extension programs.

AES scientists try to incorporate researchable issues into their research programs. Non-researchable concerns are referred to CES or appropriate federal or state agencies for action.

**V. Planned Program Table of Content**

S. No.	PROGRAM NAME
1	Global Food Security and Hunger: Small Livestock and Beef Production
2	Climate Change - Livestock production
3	Computer Training and Technology Program
4	Eastern Caribbean Extension Outreach and Interchange
5	Global Food Security and Hunger: Sustainable Agriculture
6	Global Food Security and Hunger: Urban Gardening
7	Climate Change: Urban Forestry Program
8	Marketable Skills for Limited Resource Families, Youth and Communities
9	Food Safety Education-EFNEP and EFNEP Youth
10	A Healthy, Well-Nourished Population
11	4-H Youth and Volunteer Development
12	Climate Change: Water Quality Program
13	Climate Change: Natural Resources and Environmental Management

## **V(A). Planned Program (Summary)**

### **Program # 1**

#### **1. Name of the Planned Program**

Global Food Security and Hunger: Small Livestock and Beef Production

#### **2. Brief summary about Planned Program**

The Small Livestock and Beef Programs work with an increasing number of small livestock farmers and a limited number of large livestock farmers. Management styles are mostly casual and informal with intensive principles not employed by the primarily part-time livestock producers. With the development of the islands, many farmers are being forced to raise their stock on smaller parcels of land, thereby increasing the incidences of parasites and forage degradation from overgrazing pastures. These also require enhanced management practices that allow for more intensive production. Through work with research entities, the program is incorporating hardier strains of forages that will withstand more intense grazing practices. In addition, farmers are being educated about proper management techniques for heavily stocked pastures. Parasite control issues that develop from intensive grazing are also being explored and dealt with. Because of the climate, parasites, (internal and external), are a common issue year-round throughout the livestock industry in the Virgin Islands. Demonstrations and workshop training sessions are being employed to assist producers in evaluating their current livestock housing status and how improvements can address the parasite issue. Parasite surveys continue to be conducted in conjunction with USDA-Animal and Plant Health Inspection Service to monitor the status of populations and efficacy of the current treatments.

Consumers in the Virgin Islands would like to purchase locally produced animal products. One deterrent is that they are often unaware of where they are available. Pricing along with consistent quality and quantity issues are other hurdles faced by the producers. Market programs will be implemented to standardize pricing and quality standards, as well as educate consumers as to the availability and benefits of locally produced products.

**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

<b>KA Code</b>	<b>Knowledge Area</b>	<b>%1862 Extension</b>	<b>%1890 Extension</b>	<b>%1862 Research</b>	<b>%1890 Research</b>
301	Reproductive Performance of Animals	20%		5%	
302	Nutrient Utilization in Animals	15%		0%	
303	Genetic Improvement of Animals	0%		20%	
306	Environmental Stress in Animals	0%		20%	
307	Animal Management Systems	30%		35%	
311	Animal Diseases	10%		0%	
312	External Parasites and Pests of Animals	10%		10%	
313	Internal Parasites in Animals	0%		10%	
315	Animal Welfare/Well-Being and Protection	10%		0%	
603	Market Economics	5%		0%	
	<b>Total</b>	100%		100%	

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

All livestock producers in the Virgin Islands face similar problems affecting production and profitability, regardless of the species raised. The major causes of these problems are parasitism, market availability, management techniques, nutrition and fertility. The Senepol cattle and St Croix White hair sheep are well adapted to the tropics and these traits are of interest to producers in the region and around the world. Characterizing these traits will allow producers to select for them in their livestock.

The cattle industry and, to a lesser extent, the sheep and goat industry in the Virgin Islands is affected by the brown cattle tick - *Boophilus microplus* - which carries several diseases, including anaplasmosis and several strains of babesiosis (piroplasmiasis), all commonly referred to as "tick fever." The presence of these ticks can cause illness and death in a producer's herd or flock and significantly impacts growth and production. An eradication program has been implemented for the second variety of tick found on St. Croix (*Amblyomma variegatum*).

The unique livestock germplasm in the USVI does have utility and demand in other locations. The expense and restrictions for moving live animals off the island to the mainland require alternative methods to get the germplasm distributed. Projects will be developed to find alternate methods of processing and transporting germplasm (Semen and embryos) so that the desirable traits (heat tolerance, parasite resilience) can be used to benefit livestock producers in other parts of the US mainland and the tropics.

Small ruminants are at risk from infection with intestinal parasites and methods to control these parasites will be evaluated. The use of crossbred lambs in the USVI has increased dramatically. Unfortunately the outside breeds that are being used are not well suited to the local environment and conditions. The Dorper breed has been used extensively but the crossbred lambs do not possess the same level of parasite tolerance as the indigenous hair sheep and mortality due to parasites is high (> 30%). Getting these lambs to survive to market is a top priority for the producers and they need to be able

to do this efficiently to take advantage of the increased production traits.

The swine industry is plagued by internal parasites most commonly caused from poor or improper housing. Many hogs in the Virgin Islands are raised as "free-range" or natural penned with a dirt floor, leading to a high incidence of parasitism.

The second major problem facing Virgin Islands livestock farmers is market availability. Most of the meats and eggs sold and consumed in the Virgin Islands are imported at a low cost, therefore making it more difficult for local producers to sell their products. The public is starting to utilize local products more as they have discovered the better taste and freshness.

Other major problems are inadequate knowledge of proper management techniques leading to challenges with nutrition and fertility in the herds and flocks. Many producers in the Virgin Islands operate their enterprises on a part-time and very informal basis. This casual approach often leads to improper or inadequate housing facilities, pasture usage, identification and records management, which results in infertility, poor growth and a generally unproductive and unprofitable enterprise. In addition, poorly- or non-identified animals create ownership problems for local officials as well as producers when they stray or are lost, especially those involved in motor vehicle accidents, property damage or injury.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

- As real estate becomes more valuable for development purposes, livestock producers face extreme challenges in maintaining sufficient quantity of quality pastures for their animals.
- Many of the producers in the Virgin Islands are part-time farmers and, as a result, do not have the means to invest the required sums of money necessary for proper solutions to issues.
- In an economically challenged community most consumers will prefer to purchase locally produced products ONLY IF they are competitive in price and quality.
- In order to control the spread of parasites, the populations of wild and feral animals must be monitored and kept separate from domestic livestock; and domestic livestock must be properly housed.
- To assure increased fertility and production in domestic livestock, their nutrition levels must be consistently maintained at adequate levels.
- Some producers will not identify their livestock as required, until penalized for non-identification.
- Agricultural Experiment Station research information on improved forages and livestock rearing techniques will be made available to Extension staff for dissemination to the public in a timely manner.
- Extension staff will work cooperatively with Agricultural Experiment Station staff in addressing

areas of concern for local livestock producers.

- Senepol cattle are well suited to the tropical environment. The level of external parasites will be evaluated to determine if there are genetic traits that relate to parasite burdens and how that relates to production traits.
- Physiological traits that help make local livestock adapted to the tropical climate will be evaluated.
- There is a demand for the unique genetic material of the local livestock breeds

**2. Ultimate goal(s) of this Program**

- To identify, and assist in the control of livestock parasites -- such as ticks and worms
- To increase the nutritional plane of livestock and therefore increase fertility among the herds and flocks
- To maintain a mandatory livestock identification program for the Virgin Islands and a brand registry file to assist in identifying owners of livestock
- To increase consumer demand for locally produced livestock products
- To increase the adoption of more drought-resistant, high quality forages for use by all livestock producers
- To assist producers in obtaining/constructing proper housing systems for their livestock
- To increase the number of farmers implementing accurate performance testing and records management systems in their herds/flocks
- To assist farmers with predator control within sheep and goat herds through fencing and guard animals.
  - To evaluate the relationship between external parasite burdens and production traits of cattle
  - To determine what traits of sheep and cattle make them adapted to the tropics.
  - To develop methods to transport livestock germplasm off the island for use in breeding programs elsewhere

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.5	0.0	1.6	0.0
2018	1.5	0.0	1.6	0.0
2019	1.5	0.0	1.6	0.0
2020	1.5	0.0	1.6	0.0
2021	0.0	0.0	1.8	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- A "Buy Local, Eat Fresh" program will be continued to further promote the purchase and consumption of locally produced animal products
- A parasite monitoring program will be continued for all livestock farms to document parasite populations and concentrations, with data being used in tick control programs
- Test sites will be set up and monitored for enhanced forage evaluation in pasture and drought conditions
- A program will be continued to demonstrate to producers the health and financial advantages of proper and adequate housing for livestock
- Methods of nutrition evaluation will be demonstrated to producers so that they can determine the effects of reproduction and performance
- Develop an information exchange between established and developing farmers through farm visits to see what can be done to improve management and protection
  - Broadcast regular radio programs focusing on different areas of livestock production
  - Conduct research
  - Publish results
  - Present data at conferences
  - Collaborate with other members of multistate research project

Research will be conducted to evaluate reproductive traits of yearling Senepol heifers and bulls. Tick burdens of Senepol cattle will be evaluated at various point in the production cycle. The effect of weaning age on intestinal parasites of ewes, lambs and rams will be evaluated in an accelerated lambing system.

**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"> <li>• Workshop</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• Newsletters</li> <li>• Other 1 (Radio)</li> <li>• Other 2 (Publications)</li> </ul>

**3. Description of targeted audience**

- Virgin Islands livestock producers
- Virgin Islands consumers
- Virgin Islands youth
- Livestock producers in the tropics, greater Caribbean, Central and South America and the southern US.

## V(G). Planned Program (Outputs)

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

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

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

## V(H). State Defined Outputs

### 1. Output Measure

- Workshops/demonstrations would be conducted on management, nutrition, housing, and identification of livestock.
- Pasture testing and demonstration sites would be set up for forage evaluation.
- Farms would be visited for general evaluation of management techniques and counseling.
- Farms would be visited for parasite monitoring and evaluation.
- Farms would be visited to weigh animals to monitor performance.
- Continue to implement a "Buy Local" campaign with local farmers for use by producers in the community.
- Provide training to farmers in identification methods.
- Number of farmers using late weaning of hair lambs
- Using tick burdens as a selection criteria in Senepol cattle
- Identifying traits of adapted livestock
- Using new method of artificial insemination with liquid semen as opposed to frozen semen



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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Establish and/or monitor (5) sites annually to demonstrate the use of drought-resistant and nutritional forages for pastured livestock.
2	Decrease animal losses due to parasites and poor nutrition by 5%.
3	Increase the sales and consumption of locally produced livestock products such as meat and eggs by 5%.
4	Increase the number of livestock herds/flocks using complete identification and recordkeeping practices by 10%
5	Increase the number of pig farmers that are raising their livestock in recommended facilities by 5%.
6	Using tick burdens as a selection tool in Senepol cattle
7	Develop methods to distribute germplasm

**Outcome # 1**

**1. Outcome Target**

Establish and/or monitor (5) sites annually to demonstrate the use of drought-resistant and nutritional forages for pastured livestock.

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 312 - External Parasites and Pests of Animals
- 302 - Nutrient Utilization in Animals
- 315 - Animal Welfare/Well-Being and Protection

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Decrease animal losses due to parasites and poor nutrition by 5%.

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 312 - External Parasites and Pests of Animals
- 307 - Animal Management Systems
- 306 - Environmental Stress in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 302 - Nutrient Utilization in Animals
- 301 - Reproductive Performance of Animals
- 303 - Genetic Improvement of Animals

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Increase the sales and consumption of locally produced livestock products such as meat and eggs by 5%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 603 - Market Economics

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Increase the number of livestock herds/flocks using complete identification and recordkeeping practices by 10%

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 307 - Animal Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Increase the number of pig farmers that are raising their livestock in recommended facilities by 5%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Using tick burdens as a selection tool in Senepol cattle

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 307 - Animal Management Systems
- 303 - Genetic Improvement of Animals
- 312 - External Parasites and Pests of Animals
- 306 - Environmental Stress in Animals
- 311 - Animal Diseases

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 7**

**1. Outcome Target**

Develop methods to distribute germplasm

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 301 - Reproductive Performance of Animals
- 307 - Animal Management Systems
- 303 - Genetic Improvement of Animals

**4. Associated Institute Type(s)**

- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes

- Government Regulations
- Competing Public priorities

### **Description**

The Virgin Islands lies in a hurricane prone zone. Natural disasters such as hurricanes will disrupt all aspects of life in the Virgin Islands, from supply availability to facilities (and their reconstruction following an event.) Severe drought will shift a producer's priorities from improvement to survival when resources must be redirected to providing basics like feed and water. Extreme rain events can also cause problems. Flooding events can create issues with maintaining proper fencing and keeping animals safe and contained. There is also an increase in parasite activity due to the wet conditions at this time.

Economy can affect outcomes because as the economy worsens, producers have less disposable resources available for what they view as "non-essential."

Appropriation changes, public policy changes and government regulations can affect the expected outcomes since producers are often slow and /or reluctant to modify their current behavior to reflect the new environment. Over time, changes are adopted, but outcomes may need to be redirected or modified.

Farming is not at the top of most Virgin Islanders' priority list. If a choice is to be made between farming and something that they care more about, farming will lose out. Therefore, funding for farming related issues can fluctuate greatly based on what issue is currently in the spotlight.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

- Before-After
  - Knowledge tests (before, during and after workshops, demonstrations and shortcourses)
- During
  - On-site surveys
  - Remote surveys
  - Producer interviews (formal and informal)
  - Farm location inspections/visitations
  - Examination of slaughter data from Abattoir
  - Examination of export testing results
  - Examination of pregnancy testing results.
- Comparisons between program participants and non-participants
  - Examination of slaughter from Abattoir
- Comparisons between different groups of individuals or program participants experiencing different levels of intensity.
  - Examination of slaughter data from Abattoir.
  - Examination of export testing results.

**V(A). Planned Program (Summary)**

**Program # 2**

**1. Name of the Planned Program**

Climate Change - Livestock production

**2. Brief summary about Planned Program**

Selecting cattle that are well suited to the environment can help to increase productivity and efficiency. Determining what traits can be measured and their impact on environmental adaptation is important. In the tropics heat stress is a prevalent condition that livestock are reared under. Developing and utilizing methods to monitor physiological parameters as indicators of heat stress and adaptation to the tropical climate are critical for livestock producers. Assessing the physiology of tropically adapted breeds of livestock can lead to the development of more efficient strategies to employ in extreme environments to alleviate heat stress.

**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
305	Animal Physiological Processes	0%		50%	
306	Environmental Stress in Animals	0%		50%	
	<b>Total</b>	0%		100%	

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

**1. Situation and priorities**

The high heat and humidity in the USVI cause livestock to be under heat stressed conditions at all times of the year. Locally developed breeds of livestock (cattle and sheep) are tolerant to these conditions. By evaluating the local livestock the traits that make them adapted to the local environment can be identified. Once these traits are identified they can be evaluated to determine what benefits they provide and how they can be incorporated into management systems to take advantage of them.

**2. Scope of the Program**

- In-State Research
- Multistate Research

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

**1. Assumptions made for the Program**

Senepol cattle and St Croix White hair sheep are well suited to the tropical environment. They possess traits that can be measured.

**2. Ultimate goal(s) of this Program**

Identify and evaluate the traits that contribute to the adaptation of local livestock breeds.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.0	0.0	1.6	0.0
2018	0.0	0.0	1.6	0.0
2019	0.0	0.0	1.6	0.0
2020	0.0	0.0	1.6	0.0
2021	0.0	0.0	1.6	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- Conduct Research Experiments
- Publish results
- Present data at conferences

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

**Extension**

Direct Methods	Indirect Methods

**3. Description of targeted audience**

Target audience is livestock producers in areas of heat stress and collaborators on the multistate research project.



## **V(G). Planned Program (Outputs)**

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

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

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

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Abstracts presented at conferences

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Continued use of heat tolerant breeds in local livestock operations

**Outcome # 1**

**1. Outcome Target**

Continued use of heat tolerant breeds in local livestock operations

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 306 - Environmental Stress in Animals
- 305 - Animal Physiological Processes

**4. Associated Institute Type(s)**

- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes

**Description**

Due to our location the USVI is subject to hurricanes which can hinder research projects. The local economy which is going through a downturn 13 can have a major impact on reductions in local appropriations to the University.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

Feedback will be obtained from discussions with local farmers either as part of informal meetings or formal meetings (Advisory Board, Field Days, Ag Fair). Feedback will also be obtained from fellow scientists at conferences where the data is being presented.

**V(A). Planned Program (Summary)**

**Program # 3**

**1. Name of the Planned Program**

Computer Training and Technology Program

**2. Brief summary about Planned Program**

The University of the Virgin Islands (UVI) Cooperative Extension Service Computer Training and Technology Program is designed to increase the participants' knowledge and usage of computers. The class begins with learning how to use Microsoft Window functions such as drag and drop, right click, left click, boot up, shut down etc. After learning Microsoft Window functions, participants learn word processing using Microsoft Word. The class ends with E-mail/Internet as participants learn how to setup e-mail accounts and search for information using the world wide web. The main objective of this course is to get all participants computer literate, according to UVI standards.

**3. Program existence :** Intermediate (One to 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
903	Communication, Education, and Information Delivery	100%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

Unfortunately in the USVI, there is a large population of computer illiterate adults. Many of these individuals are from low income households and may not have the necessary funds to enable them to acquire the needed computer skills. Some of these individuals need to acquire these computer skills in order to get employment to better their household income.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

1. There is a population in the USVI that needs to acquire/increase their knowledge and usage of

computer applications.

2. If the population in the USVI acquire/increase participation in this program they will be able to be more effective in their day to day activities, such as communicating.

3. If the population in the USVI acquire/increase participation in this program they will increase their opportunity of acquiring employment.

**2. Ultimate goal(s) of this Program**

Participants will acquire/increase their knowledge of Microsoft Window by 70%.

Participants will acquire/increase their knowledge of Microsoft Word by 70%.

Participants will acquire/increase their knowledge of E-mail by 70%.

Participants will acquire/increase their knowledge of the Internet by 70%.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.6	0.0	0.0	0.0
2018	1.6	0.0	0.0	0.0
2019	1.6	0.0	0.0	0.0
2020	1.6	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Advertise the Computer Training and Technology Program. Conduct eight weeks Basic Computer Training Courses that will teach participants how to use Microsoft Windows, Microsoft Word, E-mail, and search for information using the World Wide Web.

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

**Extension**

Direct Methods	Indirect Methods
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<ul style="list-style-type: none"><li>● Education Class</li><li>● Workshop</li><li>● Demonstrations</li></ul>	<ul style="list-style-type: none"><li>● Public Service Announcement</li></ul>
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### 3. Description of targeted audience

The population will consist mainly of computer illiterate adults in the USVI that are from low income households. Also members of the clothing construction and EFNEP classes.

### V(G). Planned Program (Outputs)

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

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

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

### V(H). State Defined Outputs

#### 1. Output Measure

- Conduct a seven-week basic computer training course designed to increase the participants' knowledge and usage of computer in Basic Computer Maintenance, Microsoft Word, and E-mail/Internet.
- Conduct three-day workshops on Internet communication.
- Conduct six-day workshops on Microsoft Excel
- Conduct five-day workshops on Microsoft PowerPoint

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Participants will acquire/increase their knowledge of Microsoft Window by 70%.
2	Participants will acquire/increase their knowledge of Microsoft Word by 70%.
3	Participants will acquire/increase their knowledge of E-mail by 70%.
4	Participants will acquire/increase their knowledge of the Internet by 70%.
5	Participants will acquire/increase their knowledge of Microsoft Excel by 70%.
6	Participants will acquire/increase their knowledge of Microsoft PowerPoint by 70%.

**Outcome # 1**

**1. Outcome Target**

Participants will acquire/increase their knowledge of Microsoft Window by 70%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Participants will acquire/increase their knowledge of Microsoft Word by 70%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Participants will acquire/increase their knowledge of E-mail by 70%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery



**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Participants will acquire/increase their knowledge of the Internet by 70%.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Participants will acquire/increase their knowledge of Microsoft Excel by 70%.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Participants will acquire/increase their knowledge of Microsoft PowerPoint by 70%.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

#### **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

#### **Description**

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

Conduct a pre-assessment of all participants' computer skills before they begin the program and a post-assessment after they have completed the program. The participants will also evaluate the instructor and the course at the end of the program.

**V(A). Planned Program (Summary)**

**Program # 4**

**1. Name of the Planned Program**

Eastern Caribbean Extension Outreach and Interchange

**2. Brief summary about Planned Program**

The Cooperative Extension Service (CES), through its affiliated international organizations, the Caribbean Food Crops Society, the Caribbean Association of Researchers and Herbal Practitioners (CARAPA), and the Caribbean Council of Higher Education in Agriculture (CACHE), will continue to assist the Eastern Caribbean countries and the Organization of Eastern Caribbean States with organizational capacity building in working effectively with their local clientele. CES will assist these organizations in strengthening the agricultural network of scientists, farmers and technicians in the Caribbean region. CES will provide technical assistance in agricultural production, processing and distribution to help improve the standard of living of the people of the Eastern Caribbean. CES will strengthen the networking capabilities for the different agricultural projects and also sustain the educational linkages in the Caribbean. We would develop training and transfer functions in specific fields in collaboration with appropriate national and regional bodies.

**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
603	Market Economics	10%		0%	
606	International Trade and Development Economics	10%		0%	
903	Communication, Education, and Information Delivery	80%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

The U.S. Virgin Islands are in a natural and potentially pivotal position with respect to U.S.-Eastern Caribbean (EC) interchange because of our geographic proximity to the twenty-five main islands/island groups of the Lesser Antilles, the similarities to these in agroclimate, ecology, and socioculture. The U.S. Virgin Islands has become a gateway to the Caribbean. The agriculture sector in the six countries in the Organization of Eastern Caribbean States (OECS) still accounts for 16 percent of regional gross national product, employs 30 percent of the work force, and is a major source of foreign exchange. Yet, the EC

islands are all engaged in major diversification of their agriculture and related enterprises, and during the transition, major training and information needs arise, especially in the smaller islands that are not being fully met.

Through the Caribbean Food Crops Society (CFCS), technical assistance has in the past been given to these smaller islands by CES technical personnel whenever the need arises. CFCS is an independent professional organization on inter-disciplinary orientation and membership. Almost all CES specialists and agents are members of this society. The main objective of CFCS is to advance and foster Caribbean food production, processing, and distribution to help improve the standard of living of the people of the Caribbean. The Secretariat of the CFCS is located at UVI/CES, the Director is vice-chair of the Board, and the Associate Director is the general secretary of the society. This has created networking capabilities for the different agricultural projects, and has strengthened educational linkages in the Caribbean. Proceedings of the annual meetings have been completed under UVI/CES leadership, and assistance has been given in planning of future meetings and general collaboration between countries of the Caribbean. UVI/CES is also a founding member of the Caribbean Association of Researchers and Herbal Practitioners and the Caribbean Council of Higher Education in Agriculture and has played a major role in agricultural exchanges and linkages in the Caribbean.

CES continues to explore opportunities for expanding linkages with individuals and institutions in the agricultural and human resources field. We have the opportunity to develop training and transfer functions in specific fields

## **2. Scope of the Program**

- In-State Extension

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

### **1. Assumptions made for the Program**

- CES will maintain its relationships with CFCS, CACHE, and CARAPA.
- Existing Extension personnel will be maintained.
- Extension personnel will continue to be on the Board of Directors of CFCS, CACHE, and CARAPA.
  
- External funding will be acquired for personnel travel in the Eastern Caribbean.

### **2. Ultimate goal(s) of this Program**

- Through existing programs, strengthen educational linkages in agriculture on ten Eastern Caribbean islands.
- Provide opportunities for training of producers/operators in different aspects of sustainable agriculture, horticulture, germplasm exchange, market identification and development, pest and pesticide management, livestock production, and pasture and forage management.
- Provide opportunities for the training and growth of Eastern Caribbean youth, leaders, and volunteers in youth organization development.
- Provide opportunities for consultation in food and nutrition to homemakers on five islands.
- Provide assistance to CFCS, CACHE, and CARAPA in program coordination, publication and planning of education workshop and training programs.
- Provide an avenue for marketing of local agricultural products in the Eastern Caribbean.

## **V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.2	0.0	0.0	0.0
2018	1.2	0.0	0.0	0.0
2019	1.2	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Professional linkages will be established with other agricultural organizations in the Eastern Caribbean. Shortcourses, workshops, and training sessions will be conducted for agricultural specialists, youth leaders and volunteers. Extension specialists will provide consultations on food and nutrition programs, sustainable agriculture, horticulture, and livestock production and management. Breeding animals will be exchanged with other islands through the Breeders Exchange Program. A directory of individuals and institutions in agricultural research and development in the Eastern Caribbean will be expanded and updated. UVI/CES telecommunication systems for collaborative training with other regional institutions will be utilized to train extension specialists and agents. Proceedings, newsletters and other publications will be published for CFCS, CACHE, and CARAPA. CES will assist in the planning and execution of international and regional meetings for CFCS, CACHE, and CARAPA.

**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"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

The target audience of this program will be extension specialists, extension agents, district supervisors, extension educators and research scientists in the Eastern Caribbean. Producers and farm operators will also be targeted for this oprogram. Regional institutions, homemakers and youth will also be targeted.

## V(G). Planned Program (Outputs)

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

- Number of contacts
    - Direct Adult Contacts
    - Indirect Adult Contacts
    - Direct Youth Contacts
    - Indirect Youth Contact
  - Number of patents submitted
  - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

## V(H). State Defined Outputs

### 1. Output Measure

- Agricultural linkages will be established with five organizations in the Eastern Caribbean countries.
  - International and regional workshops will be coordinated.
  - Proceedings, newsletters and other publications will be published for CFCS, CACHE, and CARAPA.
  - Update and expand directory of individuals and institutions in agricultural research in the Eastern Caribbean.
  - Animal breeding stock will be exchanged between countries in the Eastern Caribbean.
  - Extension specialists will provide consultation on sustainable agriculture, horticulture and livestock production and management.
  - Provide forum for training youth leaders and volunteers (amount of youth trained).
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Agricultural linkages established with regional organizations
2	International and regional workshops coordinated
3	Amount of animal breeding stock exported to Eastern Caribbean countries
4	Directory of individuals and institutions in agricultural research in the Eastern Caribbean
5	Proceedings, newsletters and other publications published for CFCS, CACHE, and CARAPA

**Outcome # 1**

**1. Outcome Target**

Agricultural linkages established with regional organizations

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 606 - International Trade and Development Economics
- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

International and regional workshops coordinated

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 606 - International Trade and Development Economics
- 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Amount of animal breeding stock exported to Eastern Caribbean countries

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 606 - International Trade and Development Economics
- 603 - Market Economics



#### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 4**

##### **1. Outcome Target**

Directory of individuals and institutions in agricultural research in the Eastern Caribbean

##### **2. Outcome Type : Change in Condition Outcome Measure**

##### **3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

##### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 5**

##### **1. Outcome Target**

Proceedings, newsletters and other publications published for CFCS, CACHE, and CARAPA

##### **2. Outcome Type : Change in Condition Outcome Measure**

##### **3. Associated Knowledge Area(s)**

- 903 - Communication, Education, and Information Delivery

##### **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

##### **Description**

Natural disasters can adversely impact the scheduling and execution of activities. Changes in economy of the Virgin Islands will shift priorities to other programs.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

Pre and post evaluations will be conducted to assess baseline information on knowledge levels and subsequent increase in knowledge and awareness. Onsite surveys will be conducted.

**V(A). Planned Program (Summary)**

**Program # 5**

**1. Name of the Planned Program**

Global Food Security and Hunger: Sustainable Agriculture

**2. Brief summary about Planned Program**

The Sustainable Agriculture Program will serve as a broad based umbrella initiative to conduct educational training in several areas, including but not limited to (a) marketing, (b) value-added processing, (c) production practices (drip irrigation, crop rotation, mulching, etc.), (d) composting, (e) computer literacy, and (f) farm financial and operational planning, organizing, management and recordkeeping. Through a combination of workshops, shortcourses, lectures, demonstrations, etc., farmers will be trained and encouraged to adopt management, production, processing, and marketing practices that are environmentally responsible and economically viable.

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

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

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

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

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	20%		40%	
205	Plant Management Systems	20%		50%	
307	Animal Management Systems	20%		0%	
403	Waste Disposal, Recycling, and Reuse	20%		10%	
601	Economics of Agricultural Production and Farm Management	20%		0%	
	<b>Total</b>	100%		100%	

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

**1. Situation and priorities**

The Sustainable Agriculture program primarily serves to educate and encourage farmers to adopt sustainable agricultural practices that are environmentally sensitive, economically viable, and enhance the overall well being of the territory.

Many of our clients continue to utilize some traditional management and production practices (e.g. hand watering, etc.) that are often inefficient and result in less than optimum yields and economic returns. In addition, most producers operate on property with inadequate water resources to sustain optimum

yields and profitable economic returns. Without proper farm financial and operational planning, organizing, managing, and recordkeeping practices farmers are often not prepared to take advantage of funding opportunities which can enhance their businesses. Crop and livestock farmers typically sell their products without considering marketing strategies to add value and/or promote the shelf life of their commodities.

The sustainability of local farm enterprises can be improved to enhance production levels, operational efficiency, economic return, and environmental stewardship. The long term success of these farms depends upon educational outreach programs that will disseminate information to producers regarding recommended research-based (a) management and production practices, (b) farm financial and operational planning, organizing, managing, and recordkeeping practices, (c) enhancing water resources, (d) alternative enterprises and commodities, and (e) value added technologies.

Virgin Islands crop and livestock farmers are in need of continuous training regarding the latest research based sustainable management and production practices. Producers also need to acquire computer literacy skills in order to utilize financial and operational recordkeeping systems and improve business planning, organizing, and management strategies to enhance the sustainability of their farm operations. Infrastructural development for water collection and storage must be improved to increase production levels and economic viability of local farms.

Finally, farmers need to increase their knowledge and adoption of marketing strategies, including alternative enterprises and strategies to add value to agricultural commodities to increase profits.

## **2. Scope of the Program**

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

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

### **1. Assumptions made for the Program**

- Funding support from the Sustainable Agriculture Research & Education (SARE) Program will continue to be available for the duration of the program.
- Farmers will be motivated to change/enhance their behavior and practices based on the training and educational initiatives outlined in this Plan of Work.

### **2. Ultimate goal(s) of this Program**

- To increase knowledge, awareness, and the adoption of sustainable crop management and production practices by farmers
  - To increase knowledge, awareness, and the adoption of sustainable livestock management and production practices by farmers
  - To increase knowledge, awareness, and the application of computer literacy to utilize farm financial and operational planning, organizing, managing, and recordkeeping practices to enhance and sustain crop and livestock production systems
  - To increase the number of farmers engaging in the recycling of organic matter through the practice of composting
  - To increase the availability of water resources for farm production, and to increase the adoption of

sustainable crop and livestock production practices that promote the efficient use of water

•To increase the number of producers who adopt alternative enterprises and/or value-added strategies to enhance profits

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.6	0.0	6.0	0.0
2018	3.6	0.0	6.0	0.0
2019	3.6	0.0	6.0	0.0
2020	3.6	0.0	6.0	0.0
2021	3.6	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

. Shortcourses, workshops, and demonstrations will be conducted to disseminate information about recommended, research-based sustainable production practices, including composting, drip irrigation, etc.

2. Publications (e.g. fact sheets) and newsletter articles will be developed and published to disseminate information regarding sustainable production and marketing practices.

3. Announcements will be made through the print and electronic media to promote educational activities and disseminate information about sustainable agricultural practices.

4. Farm visits and telephone contacts will be made to address clientele problems and to disseminate information about the program.

5. Workshops and other projects will be conducted in partnership with other entities to implement strategies to increase farm water supply and enhance the efficient use of this resource.

**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"> <li>● Workshop</li> <li>● Demonstrations</li> <li>● Other 1 (Site Visits)</li> <li>● Other 2 (E-Mail, Telephone)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Other 1 (Web-based Information)</li> </ul>

### 3. Description of targeted audience

The program's general target audience will consist of crop and livestock producers, outreach professionals from government and academic institutions, students, and young adults who aspire to be farmers. The primary audience will be farmers who are typically socially disadvantaged, limited resource individuals who lack the necessary technical training, technological tools, and infrastructure for optimum farm production.

### V(G). Planned Program (Outputs)

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

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

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

### V(H). State Defined Outputs

#### 1. Output Measure

- Number of shortcourses, workshops, demonstrations, annual fairs and exhibits
- Number of publications
- Number of announcements through print and electronic media
- Number of farm visits and telephone contacts

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Increase the number of farmers who become more aware of sustainable agriculture practices by 5%
2	Increase the number of farmers who become more aware of value-added strategies to increase farm profitability by 10%
3	Increase the number of farmers who increase or enhance their knowledge of farm financial and operational planning, organizing, managing, and recordkeeping practices by 10%

**Outcome # 1**

**1. Outcome Target**

Increase the number of farmers who become more aware of sustainable agriculture practices by 5%

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse
- 205 - Plant Management Systems
- 307 - Animal Management Systems
- 111 - Conservation and Efficient Use of Water
- 601 - Economics of Agricultural Production and Farm Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Increase the number of farmers who become more aware of value-added strategies to increase farm profitability by 10%

**2. Outcome Type : Change in Knowledge Outcome Measure**

**3. Associated Knowledge Area(s)**

- 307 - Animal Management Systems
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 111 - Conservation and Efficient Use of Water

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Increase the number of farmers who increase or enhance their knowledge of farm financial and operational planning, organizing, managing, and recordkeeping practices by 10%



**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

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

**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
- Public Policy changes
- Government Regulations
- Competing Public priorities

**Description**

1. Natural disasters in general and hurricanes in particular can adversely impact the scheduling and execution of educational activities. This challenge is further complicated by the fact that trainers and the target audiences may be located on separate islands.

2. The state of the local economy can directly and indirectly affect the success of the program by influencing the level of matching state funding available for projects. Local economic conditions can also impact the effectiveness of state funded partner agencies in the execution of planned activities.

3. Changes in public policy can potentially influence priorities and resource allotment to state partner agencies. This would be especially important if policy changes are not sensitive to agricultural development.

4. New government regulations or changes that affect the availability or off-island purchase of agricultural inputs can impact developments in sustainable agriculture.

5. Currently, in the U.S. Virgin Islands public policy supports the tourism industry as the principal source of revenue for the territory. This policy directly impacts decisions regarding the agricultural development of the territory.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

Pre and Post evaluations will be conducted to assess baseline information on knowledge levels and

subsequent increase in knowledge and awareness. This method of evaluation will be used especially for workshops short courses.

**V(A). Planned Program (Summary)**

**Program # 6**

**1. Name of the Planned Program**

Global Food Security and Hunger: Urban Gardening

**2. Brief summary about Planned Program**

The Urban gardening program will provide information, education, and technical advice to home gardeners, nonprofit organizations, public and private agencies, and residents about caring for and cultivating plants.

**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
205	Plant Management Systems	95%		80%	
403	Waste Disposal, Recycling, and Reuse	5%		20%	
	<b>Total</b>	100%		100%	

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

**1. Situation and priorities**

Virgin Islanders love to garden. Gardening continues to provide mental, physical and economic benefits to young and old. The rising cost of imported basic necessities including food items has created a desire among residents to reduce their cost of living. A 2005 consumer expenditure study conducted by the University of the Virgin Islands Eastern Caribbean Center showed that the average cost for fruits and vegetables was approximately \$717.96 per household which, ranks the Territory among the top five most expensive states including Washington, D.C. and Hawaii. The cost has increased significantly since then.

Heart disease, cancer, hypertension, and diabetes are the top medical problems facing Virgin Islands residents. Many residents have begun to make lifestyle changes such as getting more exercise, reducing stress levels and changing dietary habits. They are also requesting more information on being able to manage their terrestrial resources more efficiently in order to achieve some of the lifestyle changes that they are seeking.

Additionally, the growth and expansion of commercial development continues to reduce the amount of open areas. Urban planners are now including more green space zones in their recommendations to developers. Cultivated ornamental plants have become more common among, and within, commercial and domestic structures. Management of these zones is critical in order for the survival of the plants. Education

in the most current best management practices will be needed to ensure that the benefits sought by planners and residents are achieved.

**2. Scope of the Program**

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

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

**1. Assumptions made for the Program**

• Current research on the use of low-cost, sustainable technologies exists. •Additional funding will be realized for staff training and program implementation. •V.I. residents will be motivated to use the knowledge received to make changes in the management of their home, school and institutional landscapes. •Horticultural organizations will be a catalyst for encouraging change among the wider unreached residents. •The cost of living of homeowners will be positively impacted as a result of this program. •Residents, developers, and policy makers will use the University as the source for capacity building within the community.

**2. Ultimate goal(s) of this Program**

The goal of the Urban Gardening program is to assist Virgin Islands residents with managing the terrestrial resources around their home, schools, and business.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.2	0.0	4.5	0.0
2018	1.2	0.0	4.5	0.0
2019	1.2	0.0	4.5	0.0
2020	1.2	0.0	4.5	0.0
2021	1.2	0.0	4.5	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Educational classes, workshops, seminars  
 Development of publications, resource materials, curriculum guides

- Conducting field days, field demonstrations, exhibits and tours
- One-on-one counseling
- On-site visits
- Use of electronic and social media
- Website development
- Vegetable trials
- Microirrigation
- Biotechnology
- Aquaponics
- Germplasm evaluation and breeding

**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"> <li>• Education Class</li> <li>• Workshop</li> <li>• One-on-One Intervention</li> <li>• Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Newsletters</li> <li>• TV Media Programs</li> <li>• Other 1 (Demonstration Sites)</li> <li>• Other 2 (Website)</li> </ul>

**3. Description of targeted audience**

- Homeowners
- Horticultural Organizations
- Public Housing Residents
- Senior citizens homes
- School teachers
- Policy Makers
- Master Gardeners Candidates
- Youth groups

## **V(G). Planned Program (Outputs)**

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

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

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

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Number of educational classes to help residents plan and create a garden
- Number of workshops/demonstrations using efficient technologies, practices and principles in gardening
- Number of educational classes in the benefits of proper gardening
- Number of consultations with residents, public and private agencies, about gardening
- Number of articles/publications on urban gardening management
- Number of fairs and exhibits displaying best management practices and other information pertaining to the Urban Gardening program
- Number of print, electronic, and social media appearances/programs promoting urban gardening
- Number of demonstration sites developed using urban gardening principles and practices
- Number of public and private entities and individuals establishing gardens
- Number of residents, non-profit organizations, and public and private entities becoming more aware of the benefits of composting.
- Number of abstracts presented at conferences

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Increase the number of residents who will become more aware of the benefits of gardening by 10%
2	Increase the number of residents,who increase their knowledge of more efficient low cost technologies, practices, and principles by 10%
3	Increase the number of residents, public and private agencies who will establish gardens by 10%
4	Increase the number of residents, public and private agencies who start composting by 5%
5	Increase the number of growers using microirrigation and controllers
6	Increase the number of root crop growers
7	Increase the number of commercial aquaponic systems



**Outcome # 1**

**1. Outcome Target**

Increase the number of residents who will become more aware of the benefits of gardening by 10%

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Increase the number of residents, who increase their knowledge of more efficient low cost technologies, practices, and principles by 10%

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Increase the number of residents, public and private agencies who will establish gardens by 10%

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Increase the number of residents, public and private agencies who start composting by 5%

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Increase the number of growers using microirrigation and controllers

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 6**

**1. Outcome Target**

Increase the number of root crop growers

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Research

**Outcome # 7**

**1. Outcome Target**

Increase the number of commercial aquaponic systems

**2. Outcome Type : Change in Action Outcome Measure**

**3. Associated Knowledge Area(s)**

- 403 - Waste Disposal, Recycling, and Reuse
- 205 - Plant Management Systems

**4. Associated Institute Type(s)**

- 1862 Research

**V(J). Planned Program (External Factors)**

**1. External Factors which may affect Outcomes**

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

**Description**

Natural disasters such as tropical storms and hurricanes may setback some aspects of this program depending on the severity of these weather events.

Because of the resources that have to be imported, economics and government regulation will play a role in the scope of the success of the program.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

Evaluation tools will be used to gauge the effectiveness of the planned program outputs. Attempts will be made to ascertain the changes in behavior, increase in knowledge and the effect on the communities that will benefit from the outputs prescribed through this program.

**V(A). Planned Program (Summary)**

**Program # 7**

**1. Name of the Planned Program**

Climate Change: Urban Forestry Program

**2. Brief summary about Planned Program**

The Urban Forestry program seeks to assist public and private agencies, policy makers, community organizations, and individuals in the preservation, conservation, and management of the urban and suburban tree populations in our communities.

**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	20%		0%	
124	Urban Forestry	80%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

The terrestrial landscape of the Virgin Islands is changing rapidly. Because of limited land space on each island, management decisions concerning the Territory's tree populations have become more difficult. Lawmakers continue to seek a balance between changing economic forces, environmental concerns and demographics. As a result, policy decisions create situations that put landowners in tough decision making positions about the management of their forest resources.

A 2011 UVI publication, "Waves of Change", stated that approximately 40% of the waste stream entering the Territory's landfill is yard waste or biodegradable plant products. Some of these materials can be reused and recycled to provide economic opportunities for entrepreneurs in our communities. Efforts have been made by local authorities over the past 10-15 years to address these issues. Hurricanes and other tropical storms have destroyed and damaged many trees throughout the Territory. Our community's ability to prepare and respond to these disasters is hampered by a lack of utilizing up to date scientific information. This information could have helped to reduce the severity of the damage to our tree populations and improve their response and recovery process.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

• Through partnership with local and regional authorities, local policymakers will utilize more expertise and research findings as a tool for establishing policy and guidelines for managing the tree populations in the Territory. •Communities will become motivated to pay closer attention to the management of the trees as a result of the information that they will have received through direct and indirect contact from educational institutions. •Entrepreneurs will find opportunities in the reuse and recycling of yard waste and spawn small industries that will reduce the waste stream entering the landfill.

**2. Ultimate goal(s) of this Program**

- Increase the knowledge and awareness of Virgin Islanders about the benefits and opportunities resulting from applying sound principles and practices to the management of tree populations.
- Increase the number of landowners and residents establishing entrepreneurial opportunities for natural resources.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.7	0.0	0.0	0.0
2018	0.7	0.0	0.0	0.0
2019	0.7	0.0	0.0	0.0
2020	0.7	0.0	0.0	0.0
2021	0.7	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Partnerships will be established and strengthened with public and private agencies, and community leaders and groups to provide education, information, and technical advice to the general population. This will be achieved through the use of publications, seminars, mass media, field days and exhibits as well as personal contacts.

**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"> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Other 1 (Radio Appearances)</li> <li>● Other 2 (Website)</li> </ul>

**3. Description of targeted audience**

The targeted audience will be public and private landowners and agencies, community leaders and organizations, youth groups, and civic organizations.

**V(G). Planned Program (Outputs)**

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

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

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

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Number of educational classes on the benefits of tree.
- Number of workshops/demonstrations on tree care including pruning, planting, selection etc.
- Number of one-on-one consultation with residents about tree care.
- Number of fairs and exhibits displaying best management practices and other information pertaining to the Urban Forestry
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.



**V(I). State Defined Outcome**

O. No	Outcome Name
1	Increase the number of homeowners, landowners, policy makers who become more aware of the potential economic, social, and environmental contributions of the urban and suburban forest by 10%
2	Increase the number of homeowners, residents and landowners, public and private agencies, and nonprofit organizations who increase their knowledge of the care and management of the urban forest by 10%
3	Increase the number of landowners, public agencies and residents who become educated about and plant trees properly in the urban and suburban forest by 10%

**Outcome # 1**

**1. Outcome Target**

Increase the number of homeowners, landowners, policy makers who become more aware of the potential economic, social, and environmental contributions of the urban and suburban forest by 10%

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Increase the number of homeowners, residents and landowners, public and private agencies, and nonprofit organizations who increase their knowledge of the care and management of the urban forest by 10%

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Increase the number of landowners, public agencies and residents who become educated about and plant trees properly in the urban and suburban forest by 10%

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 123 - Management and Sustainability of Forest Resources

#### **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
- Government Regulations
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

#### **Description**

Hurricanes and other natural disasters force municipalities to move expeditiously to recover and bring some semblance of normalcy back to the affected areas. The severity of the disasters will have an effect on already established recovery plans and practices designed to apply best management practices. The results can be that established recovery plans may be passed or circumvented under emergency power laws.

An increasing population, due to an increase in births and migration, is another factor that may change the outcome of this planned program. Because of the Virgin Islands status as a US territory, increasing numbers of individuals from foreign countries are migrating to the Virgin Islands seeking a better life. As a result, the demand for housing has increased tremendously. Policymakers and municipal authorities may have to change or adjust existing policies and plans thus affecting the decisions of landowners.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

Evaluation tools will be used to gauge the effectiveness of the planned program outputs. Attempts will be made to ascertain the changes in behavior, increase in knowledge and affect on the communities that will benefit from the outputs prescribed through this program.

## **V(A). Planned Program (Summary)**

### **Program # 8**

#### **1. Name of the Planned Program**

Marketable Skills for Limited Resource Families, Youth and Communities

#### **2. Brief summary about Planned Program**

The Family and Consumer Sciences program has successfully offered workshops, short courses and activities that provide participants the opportunity to explore career options, entrepreneurship and workforce preparation. In 1995, the "Women at the Crossroads" series was offered. In collaboration with the U.S. Department of Labor Women's Bureau, approximately 144 low-income, at-risk women completed this six-week training over a three-year period. The success of this program suggests that this model should be replicated to effectively address the needs of many low-income, at-risk, single parents.

Programming focuses primarily on short courses that teach Clothing Construction, Home Decorating, Crafts and Cultural Arts. Many program participants repeat courses from year to year and have developed the skills to become effective volunteers. They have also indicated the need to augment their experiences with workforce preparation skills. The opportunity to learn how to turn their skills into small home-based businesses to help supplement their limited family incomes has also generated considerable interest.

To multiply the outreach efforts of a diminishing Family and Consumer Sciences staff, a master volunteer program is needed. Participants who have completed these courses previously, are often excellent candidates to serve as volunteers. They are positively motivated by their experience and now have the appropriate skill set that would enable them to become effective teachers for beginning short courses, or to serve as volunteers working with 4-H youth clientele. Using volunteers would allow a very small staff to maximize and multiply resources and reach a greater number of interested stakeholders.

**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
801	Individual and Family Resource Management	75%		0%	
802	Human Development and Family Well-Being	15%		0%	
806	Youth Development	10%		0%	
	<b>Total</b>	100%		0%	

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

1. Situation and priorities

Presently, program offerings include Clothing Construction and Batik classes in the fall and spring on St. Thomas and Clothing Construction on St. John in the spring. A "Youth Sewing" component is offered in annual UVI-CES 4-H Summer Academy. In December 2013, a total of 24 individuals completed the Clothing construction and batik classes on St. Thomas for the year. Ten (10) Senior Community Service Employment Program (SCSEP) individuals from the Department of Human Services completed the Clothing Construction/Batik class in spring 2013 on St. Thomas; four (4) SCSEP individuals completed the Clothing Construction class on St. John.

Virgin Islands families, youth and children are impacted by a magnitude of critical issues that adversely affect their quality of life. Limited resources, high unemployment, high cost of living, and a large number of families headed up by single, female heads of households, have guided the formation of various programs. These programs assist families, youth and children in developing the knowledge, skills and attitudes that will enable them to improve their quality of life.

Based on the data book from VI Kids Count (2013), the number of children under 18 years of age, based on the most recent VI census, decreased from 206-2009 with an increase in 2010 which approximated the 2007 level, or 25.4% of the population in 2010. Overall unemployment increased from 5.8% in 2008 to 8.1% in 2010 with the largest percentage increase on St. Croix. The median income of families increased from 2009 by approximately \$2,000 or \$45,058 reported for 2010. Additionally, the overall per capita income for all individuals in the VI increased from \$17,545 in 2008 to \$21,362 in 2010; nevertheless, the national rate was \$39,791 during the same year. The most recent data (2010) indicates that 31.4% of families with related children live in poverty in the V.I. Furthermore, based on that same data, 30.3% of all children live in poverty which depicts a steady increase from 2008 to 2010. All families living in poverty constituted 36.4% of the population - an increase from 2008. In 2009, 67.1% of single female heads of household were employed - a slight decrease from 2008. Income differences continue to persist between men and women.

Welfare reform, while well intended, has forced many single-parents to seek menial low paying jobs with no benefits. Many of these underemployed parents are young women with limited educational or social skills. More often than not, they do not have the time, resources or motivation to seek out additional training, whether formal or informal, that would enable them to successfully enter the workforce and become competent, contributing members of their families and communities.

Providing innovative, interactive, non-formal opportunities such as the proposed "Women at the Crossroads" series is essential for this target audience. The Women at the Crossroads program allows low income, single parents and elderly women to take charge in making healthcare and other important life decisions. Receiving this information will increase knowledge, build marketable skills and develop positive attitudes which allow them to become competent, caring, contributing members of their family and community.

## **2. Scope of the Program**

- In-State Extension

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

#### **1. Assumptions made for the Program**

- FCS staffing will increase to include at least one additional professional staff person serving the St. Thomas/St. John district and one additional staff person serving the St. Croix district.
- The relatively high cost of travel between islands impedes inter-island program development unless aided by shared program appointments, and increased technology applications such as distance learning, teleconferencing and other forms of remote access.
- Each island is unique and has different needs, but shares numerous similarities, resources and opportunities. Through innovative access and design, programs can be developed to more effectively utilize these resources - sharing volunteer, staff and partner resources, and standardized evaluation practices.
- Very small in size, and isolated in the Caribbean Sea, the socioeconomic climate is very similar to a U.S. urban setting as opposed to a rural environment. A larger portion of the population resides in the towns of Christiansted and Frederiksted, St. Croix; Charlotte Amalie, St. Thomas; and Cruz Bay, St. John. A disproportionate number (over 35%) is considered low-income and meets the federal poverty threshold. As such, program development initiatives must be selected that accurately reflect these factors.
- The V.I. Department of Labor will collaborate to develop the "Women at the Crossroads" curricula.
- Current staff members are V.I. residents or long-term residents. Their experience and knowledge of V.I. culture, and community needs make them uniquely qualified to work with the FCS programs.
- Families, youth and communities will be interested in learning how FCS programs can benefit them, and will choose to become involved.
- Potential volunteers will see the benefit and need to share their skills and experiences with other youth and adults.

#### **2. Ultimate goal(s) of this Program**

- To build the capacity of individuals and families to improve their quality of life.
- To conduct trainings, workshops and programs that provide individuals and families the opportunity to build marketable skills and maximize limited resources.

- To promote entrepreneurship as a means of supplementing personal and family income.
- To collaborate with government agencies and programs to identify potential clientele and to market program offerings
- To partner with community-based individuals and programs to obtain client referrals and to serve as resources and guest presenters.
- To collaborate with 4-H to recruit and train low-income, at-risk adults receiving public assistance to participate in the "Women at the Crossroads" series.
- To train and certify Master Volunteer Leaders to serve as mentors, provide volunteer orientation and conduct training in various subject matter areas.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.9	0.0	0.0	0.0
2018	1.9	0.0	0.0	0.0
2019	1.9	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Conduct workshops and demonstrations to promote the different FCS program offerings. Set up volunteer recruitment booths at World Food Day, St. Thomas/St. John Agriculture and Food Fair, and the V.I. Agriculture and Food Fair (St. Croix).

- Provide orientation, training and professional development for volunteers, partners, 4-H/Family and Consumer Sciences/CYFAR staff, and CES personnel.
- Utilize multi-media outlets to promote FCS programs to attract potential clientele.
- Conduct workshops and short courses that help low-income, at-risk audiences build knowledge, skills and attitudes that will positively impact their quality of life.
- Collaborate with government departments, non-profit agencies, community-based programs, and special interest groups to recruit, train and support 4-H volunteer development.

**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"> <li>• Workshop</li> <li>• Demonstrations</li> <li>• Other 1 (Short Course)</li> <li>• Other 2 (Summer Camp)</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Other 1 (Flyers)</li> </ul>

**3. Description of targeted audience**

- Current and newly recruited FCS participants,
- Low-income, at-risk, un- or underemployed adults residing in public/federally subsidized housing communities, and Children, Youth & Families at-Risk clientele.
- Clientele and staff being served through fellow UVI, CES and AES programs.
- Clientele referred from Department of Human Services, Department of Labor - Unemployment Office; V.I. Housing Authority- Tenant Services Office, and other agencies working with similar audiences.
- Parents of current 4-H club members and summer program participants.
- Youth and adults (general public) responding to multi-media 4-H volunteer campaign,
- Youth and adults indicating interest in FCS programs at World Food Day and fairs.
- Departments, agencies, clubs, and programs working with FCS.



## **V(G). Planned Program (Outputs)**

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

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

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

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Number of short courses conducted
- Number of workshops facilitated as part of "Women at the Crossroads" short course
- Number of special interest workshops conducted
- Number of youth, volunteers, staff and partners trained

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Through participation in Basic Clothing Construction Short Courses, participants will develop knowledge and awareness of sewing machine parts, basic tools and equipment, fabric line and design, measuring techniques, use of patterns, and glossary of terms.
2	Through participation in Basic Clothing Construction Short Courses, participants will learn how to baste, stitch, trim and finish seam allowances using a serger, put in hems and waist bands, apply zippers, insert elastic, insert darts, and make button holes. Acquisition of these skills will allow participants to construct at least one simple outfit resulting in personal savings
3	As a result of completing the Basic Clothing Construction Short Course, 75% of participants will enroll in the Intermediate/Advanced level of this course. In addition to using basic skills developed in the basic course, participants will learn how to apply pockets and collars, put in linings, use more detailed patterns, and incorporate more difficult fabrics. Their skills and interest level will allow them to realize a savings and to use their skills to enhance their personal income by sewing for others
4	Through participation in the Basic Batik Short Courses, participants will become aware of the various types of batiik designs. Participants will learn how to design and develop batik designs for their fabric; hot to work with various methods of creating these designs and learn the steos in creating a batik fabric.
5	As a result of their training and interest in this area, participants will provide outreach to and train church, school and youth group members about how to create batik designs.
6	Through participation in Batik Short Courses, participants will learn how to make batik projects that can be used to beautify the home and serve as gifts. Additional personal income will be generated through either word-of-mouth sales or by establishing their own small home-based business.
7	Through 'Women at the Crossroads', participants will develop knowledge of workforce preparation, personal development, personal finances, women's health and wellness issues, leadership and
8	Through 'Women at the Crossroads' participants will prepare a letter of application, build a personal resume, conduct a mock interview, complete a job application template and assemble a personal portfolio in preparation for an actual entry level employment interview.
9	Through 'Women at the Crossroads', participants will explore the impact that poise, personality, personal appearance, positive attitude and self-confidence have on enhancing family and workforce dynamics. As a result of their experiences, participants will select and model appropriate dress, and prepare and present a personal goals statement.
10	Through 'Women at the Crossroads', participants will develop a personal budget, establish a checking account, develop a living will and explore the benefits of investing
11	Through 'Women at the Crossroads', participants will learn about health issues impacting women, complete personal health screenings, identify nutritious foods and practice healthy eating
12	Through 'Women at the Crossroads', participants will build leadership skills needed to become effective volunteer leaders
13	As a result of graduating and being certified through the 'Women at the Crossroads' series, participants will successfully enter the workforce and/or improve their quality of living

**Outcome # 1**

**1. Outcome Target**

Through participation in Basic Clothing Construction Short Courses, participants will develop knowledge and awareness of sewing machine parts, basic tools and equipment, fabric line and design, measuring techniques, use of patterns, and glossary of terms.

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Through participation in Basic Clothing Construction Short Courses, participants will learn how to baste, stitch, trim and finish seam allowances using a serger, put in hems and waist bands, apply zippers, insert elastic, insert darts, and make button holes. Acquisition of these skills will allow participants to construct at least one simple outfit resulting in personal savings

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

As a result of completing the Basic Clothing Construction Short Course, 75% of participants will enroll in the Intermediate/Advanced level of this course. In addition to using basic skills developed in the basic course, participants will learn how to apply pockets and collars, put in linings, use more detailed patterns, and incorporate more difficult fabrics. Their skills and interest level will allow them to realize a savings and to use their skills to enhance their personal income by sewing for others

**2. Outcome Type** : Change in Knowledge Outcome Measure

### **3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 4**

##### **1. Outcome Target**

Through participation in the Basic Batik Short Courses, participants will become aware of the various types of batik designs. Participants will learn how to design and develop batik designs for their fabric; how to work with various methods of creating these designs and learn the steps in creating a batik fabric.

**2. Outcome Type :** Change in Knowledge Outcome Measure

##### **3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

##### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 5**

##### **1. Outcome Target**

As a result of their training and interest in this area, participants will provide outreach to and train church, school and youth group members about how to create batik designs.

**2. Outcome Type :** Change in Knowledge Outcome Measure

##### **3. Associated Knowledge Area(s)**

- 806 - Youth Development
- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Through participation in Batik Short Courses, participants will learn how to make batik projects that can be used to beautify the home and serve as gifts. Additional personal income will be generated through either word-of-mouth sales or by establishing their own small home-based business.

**2. Outcome Type : Change in Knowledge Outcome Measure**

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 7**

**1. Outcome Target**

Through 'Women at the Crossroads', participants will develop knowledge of workforce preparation, personal development, personal finances, women's health and wellness issues, leadership and

**2. Outcome Type : Change in Knowledge Outcome Measure**

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 8**

**1. Outcome Target**

Through 'Women at the Crossroads' participants will prepare a letter of application, build a personal resume, conduct a mock interview, complete a job application template and assemble a personal

portfolio in preparation for an actual entry level employment interview.

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 9**

**1. Outcome Target**

Through 'Women at the Crossroads', participants will explore the impact that poise, personality, personal appearance, positive attitude and self-confidence have on enhancing family and workforce dynamics. As a result of their experiences, participants will select and model appropriate dress, and prepare and present a personal goals statement:

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 10**

**1. Outcome Target**

Through 'Women at the Crossroads', participants will develop a personal budget, establish a checking account, develop a living will and explore the benefits of investing

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 11**

**1. Outcome Target**

Through 'Women at the Crossroads', participants will learn about health issues impacting women, complete personal health screenings, identify nutritious foods and practice healthy eating

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 12**

**1. Outcome Target**

Through 'Women at the Crossroads', participants will build leadership skills needed to become effective volunteer leaders

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development
- 802 - Human Development and Family Well-Being
- 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 13**

**1. Outcome Target**

As a result of graduating and being certified through the 'Women at the Crossroads' series, participants will successfully enter the workforce and/or improve their quality of living

**2. Outcome Type : Change in Knowledge Outcome Measure**

**3. Associated Knowledge Area(s)**

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being

**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

**Description**

• The Virgin Islands (V.I.) lies in a hurricane-prone zone. Natural disasters disrupt all aspects of life in the V.I. and can prove to be a stressful challenge for children, youth and families in coping with the resultant upheaval. In the event that a natural disaster were to occur, every effort would be made to provide access to and support of programs such as the American Red Cross and FEMA, to assist clients in obtaining assistance and in regaining some sense of normalcy and comfort.

• The V.I. currently has one of the highest unemployment rates in the nation; nearly 40% of our households operate below the poverty threshold, and there is a disproportionately high number of families headed by single, female heads of household. Finding mechanisms to successfully engage this population in ways that are feasible and meaningful for them is a challenge.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

- Before-After:

Pre- and post-tests will be administered before and after each training

Knowledge tests (interactive activities) will be administered to determine familiarity with course content.

- During:

Unit tests will be given at the conclusion of each unit.

Interviews and feedback will be provided on an on-going basis.

Personal portfolios will be developed and reviewed.

- Time Series:

Participants will be surveyed at designated intervals after graduation for two years to document employment efforts, successes and challenges.

- Other:

Peer evaluations will be conducted periodically and as a part of the closing activities.





**V(A). Planned Program (Summary)**

**Program # 9**

**1. Name of the Planned Program**

Food Safety Education-EFNEP and EFNEP Youth

**2. Brief summary about Planned Program**

The Food Safety Education and EFNEP Program focuses attention on the importance of safe food handling and preparation in home kitchens; as well as educating low income families about basic nutrition and behavior change practices. Educators work to increase public awareness of the invisible cause of food borne illness and microorganisms that may make food unsafe when basic food safety techniques are not followed. Participants will experience increased awareness among about food safety issues related to personal hygiene, food storage, food preparation and food handling. Focus is placed on food safety issues related to eating away from home, i.e. in restaurants, mobile food vans, food booths and purchasing of food from street vendors, i.e. fish. The program helps prevent food borne illness outbreaks in the territory. The program is administered through workshops, classes, and demonstrations. The geographical location where the program is administered includes schools, day-care centers, churches, senior centers, community centers, and clinics.

**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
703	Nutrition Education and Behavior	65%		0%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	25%		0%	
724	Healthy Lifestyle	10%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

The purpose of this program is to decrease the incidence of food borne illness outbreaks in the U.S. Virgin Islands. Although the incidence of food borne illness outbreaks is not well documented in the territory, these islands have many risks for food borne illness outbreaks, including the tropical climate and

unpredictable power outages. In addition, daily food borne illness risks to individuals include inappropriate

home storage, purchasing, and preparation practices. Currently, food safety practices are not taught in any consistent or comprehensive manner in the U.S. Virgin Islands by any other agency or organization. A comprehensive food safety education program could help decrease the incidence of food borne illness outbreaks so that food borne illness does not become a menace to the health of the population.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

- People will be motivated to learn and change their behavior.
- Staff and volunteers can be recruited and trained to perform necessary tasks.
- Internal funding sources will be maintained at current or higher levels.
- External funding opportunities will be secured throughout the course of the program.
- Schools, churches, clinics, and community centers will want the program to be conducted at their facility.

**2. Ultimate goal(s) of this Program**

- To raise awareness among the EFNEP participants about food safety issues related to personal hygiene, food storage, food preparation, and food handling.
- To raise awareness among the EFNEP participants about food safety issues related to eating away from home (e.g., restaurants, mobile food vans, food booths) and purchasing food from street vendors (e.g., fish).
- To increase enrollment in the EFNEP program, thereby increasing the number of individuals who will receive food safety education.
- To educate EFNEP participants (adults and youth) on basic food safety principles.
- To increase the number of food safety habits practiced by EFNEP participants.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
		1862	1890	1862

2017	3.8	0.0	0.0	0.0
2018	3.8	0.0	0.0	0.0
2019	3.8	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- Identify new locations to conduct classes.
- Recruit and train staff and volunteers to deliver food safety information to EFNEP participants (adults and youth).
- Develop and/or obtain culturally sensitive food safety curriculum appropriate for EFNEP participants (adults and youth).
- Develop and maintain relationships with partners including government agencies, clinics, places of worship, public and private schools, senior citizen centers, and day care centers.
- Develop a web page that relays information on issues relating to the program.

**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"> <li>• Education Class</li> <li>• Other 1 (Fair-type settings)</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Newsletters</li> <li>• TV Media Programs</li> <li>• Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

The program targets all U.S. Virgin Islanders but especially low income individuals who are responsible for preparing the family's meal, school age children, and pregnant teens and adults.

## **V(G). Planned Program (Outputs)**

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

- Number of contacts
    - Direct Adult Contacts
    - Indirect Adult Contacts
    - Direct Youth Contacts
    - Indirect Youth Contact
  - Number of patents submitted
  - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Number of 6-8 week class series conducted for EFNEP participants (adults and youth)
  - Number of volunteers recruited and trained to deliver food safety program
  - Number of fair-type settings in which food safety information will be presented
  - Number of web sites developed and maintained
  - Number of partnerships with agencies and organizations that will assist in improving the food safety practices of U.S. Virgin Islanders
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of adults learning basic food safety information
2	Percentage of adults adopting and maintaining at least one food safety practice
3	Number of school age children learning basic food safety information
4	Percentage of children adopting and maintaining at least one food safety practice
5	Increase awareness among the EFNEP participants about food safety issues related to personal hygiene, food storage, food preparation, and food handling
6	Increase awareness among the EFNEP participants about food safety issues related to eating away from home (e.g., restaurants, mobile food vans, food booths) and purchasing food from street vendors (e.g., fish)

**Outcome # 1**

**1. Outcome Target**

Number of adults learning basic food safety information

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Percentage of adults adopting and maintaining at least one food safety practice

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of school age children learning basic food safety information

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Percentage of children adopting and maintaining at least one food safety practice

**2. Outcome Type :** Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Increase awareness among the EFNEP participants about food safety issues related to personal hygiene, food storage, food preparation, and food handling

**2. Outcome Type :** Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

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

**4. Associated Institute Type(s)**

- 1862 Extension



## **Outcome # 6**

### **1. Outcome Target**

Increase awareness among the EFNEP participants about food safety issues related to eating away from home (e.g., restaurants, mobile food vans, food booths) and purchasing food from street vendors (e.g., fish)

**2. Outcome Type :** Change in Knowledge Outcome Measure

### **3. Associated Knowledge Area(s)**

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

### **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.)
- Other (Cultural Environment)

#### **Description**

- The U.S. Virgin Islands lies in a hurricane prone zone. Natural disasters such as hurricanes will cause power outages that can affect an individual's ability to properly store food supplies.

- The cultural environment can affect outcomes because a large number of individuals consume food purchased from mobile food vans. Unfortunately, food vendors who apply for food handlers' cards from the public health department are not required to take a food safety training course. Therefore, individuals may still be at risk for food borne illnesses as a result. In addition, Virgin Island residents often purchase local fish from street vendors. The fish is sold by the side of the road and is often not refrigerated. This practice may also affect program outcomes.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

- Before-After

Knowledge tests will be administered to EFNEP participants before and after 6-8 week class series.

The nutrient composition of a participant's 24-hour diet recalls before and after a class series will be compared.

Knowledge tests will be administered to volunteers during training sessions.

- During

Knowledge tests will be administered to EFNEP participants during 6-8 week class series.

Unit tests will be administered to volunteers as prescribed in training manual.

**V(A). Planned Program (Summary)**

**Program # 10**

**1. Name of the Planned Program**

A Healthy, Well-Nourished Population

**2. Brief summary about Planned Program**

The Healthy, Well-Nourished Population Program provides community-based nutrition and lifestyle education to all U.S. Virgin Island residents, but especially residents at high risk -including low-income audiences. The program also focuses attention on the importance of prevention of childhood obesity. The purpose of this program is to educate the target population about basic nutrition and healthy life style practices in the hopes of the prevention of childhood obesity and other nutrition related diseases. The focus of this program is to get individuals to eat more fruit, vegetables and whole grain foods and to cut down on portion sizes. The program is administered through workshops, classes, and demonstrations.

**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
701	Nutrient Composition of Food	20%		0%	
703	Nutrition Education and Behavior	60%		0%	
724	Healthy Lifestyle	20%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

The purpose of this program is to decrease the mortality and morbidity rates from heart disease, cancer, cerebrovascular diseases (e.g., stroke), diabetes, and decrease incidence of childhood obesity in the U.S. Virgin Islands through healthy lifestyle practices, behaviour change modification, and nutrition education programs. In 2001, the leading causes of death in the U.S. Virgin Islands were heart disease (158.2 deaths per 100,000), cancer (104.8 deaths per 100,000), cerebrovascular diseases (43.2 deaths per 100,000), and diabetes (28.5 deaths per 100,000) based on the U.S. National Center for Health Statistics, National Vital Statistics Report (2001). Incidence and morbidity rates are also high in the territory. By reducing the incidence of these diseases and decreasing the mortality and morbidity rates, the territory would have a reduction in the health care economic burden, while raising the productivity and quality of life.

The higher rates of heart disease, cancer, cerebrovascular diseases, and diabetes are probably exacerbated by two factors: one being a high poverty level and another is the limited number of qualified nutrition professionals. The U.S. Virgin Islands' poverty level of 28.7% is significantly higher than the national average of 12.4%. The median family income for the average Virgin Islands resident (\$24,704) is significantly less than the national average of \$41,994 (U.S. Census Bureau, Census 2000). In addition, the territory has a high percentage of single family homes headed by a female (24.9%). It is well documented that low-income families are at risk for becoming overweight and developing chronic diseases, such as heart disease and diabetes. The lack of qualified individuals (e.g., licensed or registered dietitians) who can provide culturally appropriate health messages is also contributing to the higher rates of disease in the territory. Currently, there are only a small number of qualified individuals who are able to conduct classes and counsel individuals in the area of nutrition and related behaviour modification. A comprehensive nutrition education program, which provides information about disease prevention and management, behaviour change modification, and healthy lifestyles, could help decrease the territory's mortality and morbidity rates.

## **2. Scope of the Program**

- In-State Extension

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

### **1. Assumptions made for the Program**

- People will be motivated to learn and change their behaviour.
- Staff and volunteers can be recruited and trained to perform necessary tasks.
- Internal funding sources will be maintained at current or higher levels.
- External funding opportunities will be secured throughout the course of the program.
- Schools, churches, clinics, and community centers will want the program to be conducted at their facility.
- Information exists on how to encourage behaviour change in a population.

### **2. Ultimate goal(s) of this Program**

- To increase public access to culturally sensitive nutrition education materials.
- To increase nutrition education among school-aged children, especially elementary-aged children.
- To increase public awareness about the relationship between lifestyle and nutrition habits to the development of various diseases.
- To increase the number of trained personnel that are able to deliver nutrition, lifestyle, and behaviour change information to the community.

To develop and maintain partnerships with various departments and organizations in order to successfully administer the program.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.7	0.0	0.0	0.0
2018	3.7	0.0	0.0	0.0
2019	3.7	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Develop culturally sensitive nutrition and health education products and resources to be made available to professionals, students, and the public. The following are examples of the products and resources to be developed and made available for distribution:

a beverage poster, brochure and/or flyer that lists the sugar and calorie content of commonly consumed beverages in the territory;

vegetable nutrient composition poster, brochure and/or flyer that highlights the nutritional value of local vegetables--it will include the vitamin, mineral, and fiber content of local vegetables;

a poster, brochure, and/or flyer detailing the sodium, fat, cholesterol, carbohydrate, and fiber content of commonly consumed local foods;

a diabetes exchange list booklet that include local foods and beverages; and

a culturally sensitive cookbook using local and familiar produce.

- Conduct disease specific workshops, short courses, seminars, and other educational activities focusing on nutrition education and behaviour change modification.

- Recruit and train staff and volunteers to deliver nutrition, diet, and health relevant information to the community.

- Develop and/or obtain culturally sensitive nutrition/health curriculum appropriate for school age children at all grade levels.

- Develop and maintain relationships with partners including government agencies, clinics, places of worship, public and private schools, senior citizen centers, and day care centers.
- Develop a web page that relays information on issues relating to the program.

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

<b>Extension</b>	
<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>• Education Class</li> <li>• Workshop</li> <li>• Demonstrations</li> <li>• Other 2 (Fair-type settings)</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• Newsletters</li> <li>• TV Media Programs</li> <li>• Web sites other than eXtension</li> </ul>

**3. Description of targeted audience**

This program is directed at all U.S. Virgin Island residents. However, special attention is given to high risk groups such as residents diagnosed with diseases such as diabetes, hypercholesterolemia, hypertension, and obesity; senior citizens; and school age children.

**V(G). Planned Program (Outputs)**

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

- Number of contacts
    - Direct Adult Contacts
    - Indirect Adult Contacts
    - Direct Youth Contacts
    - Indirect Youth Contact
  - Number of patents submitted
  - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

## **V(H). State Defined Outputs**

### **1. Output Measure**

- a. Number of 6-8 week class series conducted for EFNEP participants (youth & adults)
  - b. Number of volunteers recruited and trained to deliver nutrition education program.
  - c. Number of fair-type settings in which nutrition/health information will be presented.
  - d. Number of web sites developed and maintained.
  - e. Number of nutrition and health education materials developed and made available to professionals, students, and the public.
  - f. Number of partnerships with agencies and organizations that will assist in improving the health practices of U.S. Virgin Islanders.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of individuals who have indicated benefits from developed educational materials.
2	Percentage of adults adopting and maintaining at least one healthy lifestyle practice. Percentage of adults helping youth to practice healthy lifestyles in order to prevent childhood obesity
3	Number of school age children learning basic nutrition information and physical fitness
4	Percentage of children adopting and maintaining at least one healthy eating habit and exercise activity
5	Increase awareness among the general public of the relationship between food intake, physical fitness, stress management and disease prevention.
6	Number of individuals who report improvement in health status (e.g., lower blood sugar, and/or cholesterol level). & increase awareness of participants about prevention of childhood obesity.



**Outcome # 1**

**1. Outcome Target**

Number of individuals who have indicated benefits from developed educational materials.

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Percentage of adults adopting and maintaining at least one healthy lifestyle practice. Percentage of adults helping youth to practice healthy lifestyles in order to prevent childhood obesity

**2. Outcome Type** : Change in Action Outcome Measure

**3. Associated Knowledge Area(s)**

- 724 - Healthy Lifestyle

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of school age children learning basic nutrition information and physical fitness

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

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

#### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 4**

##### **1. Outcome Target**

Percentage of children adopting and maintaining at least one healthy eating habit and exercise activity

##### **2. Outcome Type : Change in Knowledge Outcome Measure**

##### **3. Associated Knowledge Area(s)**

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

#### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 5**

##### **1. Outcome Target**

Increase awareness among the general public of the relationship between food intake, physical fitness, stress management and disease prevention.

##### **2. Outcome Type : Change in Knowledge Outcome Measure**

##### **3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle
- 701 - Nutrient Composition of Food

#### **4. Associated Institute Type(s)**

- 1862 Extension

#### **Outcome # 6**

##### **1. Outcome Target**

Number of individuals who report improvement in health status (e.g., lower blood sugar, and/or cholesterol level). & increase awareness of participants about prevention of childhood obesity.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 703 - Nutrition Education and Behavior

**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
- Other (Cultural Environment)

**Description**

- The U.S. Virgin Islands lies in a hurricane prone zone. Natural disasters such as hurricanes will disrupt all aspects of life in the Virgin Islands - priorities will shift from acquiring knowledge/changing behavior to survival (acquiring food, supplies and safe drinking water).

- Economy can affect outcomes because an individual's ability to implement certain health practices is often influenced by their discretionary income. Currently the U.S. Virgin Islands has one of the highest unemployment rates in the nation.

- The cultural environment in the U.S. Virgin Islands may affect outcomes because current dietary practices (high carbohydrate and high fat diets) are deeply rooted in the community. In addition, in the past Virgin Islanders were physically active however now the majority of the population lead quite sedentary lifestyles.

**V(K). Planned Program - Planned Evaluation Studies**

**Description of Planned Evaluation Studies**

- Before-After

Knowledge tests will be administered to participants before and after workshops, classes, and demonstrations.

The nutrient composition of a participant's 24-hour diet recalls before and after a nutrition education series will be compared.

Knowledge tests will be administered to volunteers during training sessions.

- During

Knowledge tests will be administered to participants during workshops, classes, and demonstrations.

Unit tests will be administered to volunteers as prescribed in training manual.

## **V(A). Planned Program (Summary)**

### **Program # 11**

#### **1. Name of the Planned Program**

4-H Youth and Volunteer Development

#### **2. Brief summary about Planned Program**

According to the U.S. Virgin Islands Kids Count Data Book 2012, the number of children (birth to age 18) in the territory and their percentage in the overall population decreased markedly from a peak of 36,480 (representing 33%) in 1997 to 27,026 (representing 25% of the population) in 2010. The majority of children (52%) still reside on St. Croix, 45% live on St. Thomas and 3% call St. John home. Slightly over 21,000 children are considered school-aged (ages 5-18) and therefore represent a potential target audience for 4-H positive youth development programs.

In spite of the declining youth population, it is still very apparent that effective youth development programs like 4-H are successful in building positive and sustained relationships between youth and adults, providing activities that build important life skills, and creating opportunities for youth to use these skills as participants and leaders in valued community activities.

In the Virgin Islands, these relationships, skills and community engagement are best achieved through the traditional 4-H community club model, in-school clubs and a summer day camp experience. Well trained, highly motivated and empowered leaders - both youth and adult - remain the single most important factor in establishing strong, vibrant 4-H clubs and day camp programs. A regular, structured orientation and training program for staff and volunteer leaders is necessary to support vibrant, innovative and engaging 4-H clubs, programs, events and activities that routinely feature the key characteristics of positive youth development - competence, confidence, character, connection and caring.

Closer collaboration with UVI components, CES and CYFAR programs will allow us to more effectively and efficiently train and support volunteer and youth audiences. Partnering with local Departments of Education, Labor, Human Services and other government agencies may assist us in marshalling resources critical to developing well-trained volunteer leaders. Working in cooperation with community based and non-profit organizations will allow us to multiply effort to recruit highly interested, knowledgeable volunteers to undertake 4-H projects of special interest leadership.

In particular, the summer months present a unique opportunity for young people to gain new knowledge, build life skills and adopt positive attitudes. Educational programming in a safe, secure environment is cited as one of the primary reasons parents choose to enroll their children in 4-H. Developing nurturing relationships with competent, compassionate adults continue to be recognized as a positive attribute of both the 4-H club system and the 4-H summer day camp experience. Affordable, high quality, educational programming for school-aged youth, and summer employment for high school and college students continue to be major factors in setting 4-H summer program priorities.

Budgetary challenges continue to plague the University and the Cooperative Extension Service. As a result, it is increasingly difficult to identify funding for routine 4-H programs, event, and activities not to mention the customary six-week summer day camp model. It is apparent that new funding streams will need to be identified or that programs may need to be realigned to reflect the current economic climate.

**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
802	Human Development and Family Well-Being	15%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%		0%	
806	Youth Development	80%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

The 4-H program is under the leadership of the Assistant Director, 4-H/Family & Consumer Sciences Program. One professional 4-H staff person works on St. Croix and a paraprofessional staff person serves St. Thomas. With both staff at retirement age, it is imperative that new, entry-level be recruited to insure program continuity.

In 2013, as reported in the 4-H Enrollment Report ES-237, 25 adults and 31 teens provided leadership and support for three (3) organized 4-H community clubs, one (1) in-school club, four (4) after school 4-H clubs, and two (2) military 4-H clubs enrolling a total 4-H membership of 434 youth territory-wide; 378 members are on St. Croix, 56 members are on St. Thomas. The UVI-CES 4-H Summer Academy enrolled 211 youth, ages 5-14 in a five-week day camp program located on St. Croix (156) and St. Thomas (55).

Recruiting, training and placing motivated volunteers remains the single biggest challenge to establishing the most effective and vibrant club system. However, given staffing limitations, little emphasis can be placed on formal volunteer leader recruitment and training much less providing ongoing support. Increasingly, our current volunteer corps is being challenged due to continuing economic challenges. Inability to find work, high unemployment, and the need to take on additional work to make ends meet at home, have resulted in some volunteers no longer being able to serve. As a result, it is becoming increasingly difficult to identify volunteers.

A well-trained volunteer corps requires additional professional staffing and/or realigning and prioritizing 4-H programming so that current staffing can focus predominantly on volunteer recruitment, training, retention, and support. In addition, staff could explore potential new volunteer audiences. One potential volunteer audience might be those adult residents of public housing communities needing to fulfil the community service requirement in order to remain a tenant in good standing. Other possible volunteer audiences might include AmeriCorps/VISTA, UVI students, teens and partner agencies.

Effort continues to insure that 4-H programming reflects national 4-H mission mandates, incorporates UVI strategic thrusts and is responsive to the needs of our community. In 2013, 4-H clubs conducted 11 community service projects as a requirement of the charter process. Over 80 youth representing 9 schools participated in 4-H National Youth Science Day, and 12 youth and adults have delivered "4-H VI: Get Up, Get Out, Get Active," a 4-H Healthy Living program by the Walmart Corporation to over 2,000 youth throughout the territory. In order to continue this effort, additional external funding and staffing will be needed.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

- 4-H staffing will increase to include at least one additional professional staff person serving the St. Thomas/St. John district and one additional professional 4-H staff person serving the St. Croix district.
- External funding opportunities will continue to be available and staff will have the time and resources available to tap into them.
- Internal funding sources will be maintained at current or higher levels.
  - Many families, parents and youth will be interested in learning about how 4-H programs can benefit their children, families and communities, and will choose to become involved in 4-H.
  - Young people, with support, encouragement and parent participation, will want to develop the knowledge, skills and attitudes to become conscious, caring, contributing members to their club, community, island, country and world in which they live.

**2. Ultimate goal(s) of this Program**

- Provide positive youth development programming during out-of-school and summer monthsfortargetaudience
- Recruit and training adult volunteer leaders
- Develop programs that reflect the outcomes of the needs assessment and embrace University, Extension and 4-H strategic thrusts.
- Build and support vibrant 4-H clubs

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	6.0	0.0	0.0	0.0
2018	6.0	0.0	0.0	0.0

2019	6.0	0.0	0.0	0.0
2020	0.0	0.0	0.0	0.0
2021	0.0	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- Recruit, orient and train volunteers and staff
- Conduct workshops on leadership, public speaking and other positive youth development topics
- Organize regular positive youth development programs, events and activities
- Organize and implement annual summer day camp program
- Promote 4-H through presentations, displays, and other media outlets
- Support volunteers, counsellors and clubs
- Identify and solicit funding to support programs, events and activities
- Facilitate youth and adult volunteers, and 4-H staff participation in annual Southern Region 4-H Volunteer Leaders' Forum, National 4-H Conference and other relevant national 4-H events or other positive youth development opportunities.

**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"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Other 1 ((Radio))</li> </ul>

**3. Description of targeted audience**

School-aged youth residing in the Virgin Islands

- 4-H members, volunteer leaders and their parents
- Public and non-public high school students needing community service hours to fulfill graduation requirements,
- Clientele and staff being served through fellow UVI, CES and AES programs



- High school and college students seeking summer employment
- Educators interested in summer employment

### **V(G). Planned Program (Outputs)**

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

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

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

### **V(H). State Defined Outputs**

#### **1. Output Measure**

- Number of volunteers serving
- Number of volunteers trained
- Number of clubs operating
- Number of youth enrolled
- Number of positive youth development events organized
- Number of counsellors hired
- Number of campers enrolled

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Number of volunteers serving
2	Number of volunteers trained
3	Number of clubs operating
4	Number of youth enrolled as reported on ES-237
5	Number of positive youth development events organized
6	Number of counsellors hired for summer camp
7	Number of campers enrolled in summer camp

**Outcome # 1**

**1. Outcome Target**

Number of volunteers serving

**2. Outcome Type** : Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Number of volunteers trained

**2. Outcome Type** : Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Number of clubs operating

**2. Outcome Type** : Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 4**

**1. Outcome Target**

Number of youth enrolled as reported on ES-237

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 5**

**1. Outcome Target**

Number of positive youth development events organized

**2. Outcome Type** : Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 6**

**1. Outcome Target**

Number of counsellors hired for summer camp

**2. Outcome Type** : Change in Knowledge Outcome Measure

**3. Associated Knowledge Area(s)**

- 806 - Youth Development

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 7**

**1. Outcome Target**

Number of campers enrolled in summer camp

**2. Outcome Type : Change in Condition Outcome Measure**

**3. Associated Knowledge Area(s)**

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

**Description**

• The Virgin Islands lies in a hurricane-prone zone. Natural disasters disrupt all aspects of life in the V.I. and prove to be a stressful challenge for children, youth and families in coping with the resultant stress. In the event that a natural disaster were to occur, volunteers and staff would be expected to assess their personal situation and insure theirs and their family's safety. Once their immediate needs are met, volunteers and staff would be reassigned to disaster relief efforts (eg. Red Cross, FEMA, etc.)

• 4-H would make every effort to provide support networks to assist victims in regaining some sense of normalcy and comfort.

• The V.I. currently has one of the highest unemployment rates in the nation; nearly 40% of our households operate below the poverty threshold and there is a disproportionately high number of families headed up by single, female heads of household. Finding ways to successfully engage this population in ways that are feasible and meaningful for them is a challenge.

- Increased security and the need to guarantee a safe, secure and nurturing environment requires that volunteers must provide a police record, submit and be screened by the national sex offenders registry, and complete finger printing records. These requirements come at a substantial cost to predominantly low-income volunteers. This factor can be a deterrent to potential volunteers if not handled with empathy and concern.

- The No Child Left Behind initiative has made 4-H programming in the public schools a real challenge. A renewed emphasis on math and reading competencies has taken valuable classroom time away from the sciences, exploratory programs and opportunities for in-class and after-school options such as 4-H. It is imperative that our activities can be packaged in such a way that they can augment/supplement existing academic initiatives.

- The V.I. 4-H Program competes with many other youth development programs such as Boys and Girls Club, Girl Scouts and Boy Scouts. In addition, many schools and churches have developed their own after school programs. Historically, 4-H does not enjoy the traditional base that other stateside 4-H programs have. Therefore, a dynamic and effective media campaign is needed to attract 4-H alumni, and others to consider 4-H their volunteer experience of choice.

### **V(K). Planned Program - Planned Evaluation Studies**

#### **Description of Planned Evaluation Studies**

- Before-After:

Post-tests, surveys, focus groups, project fairs and interviews may be used to determine success

- During:

Member interviews will be conducted

Campers will maintain record books

**V(A). Planned Program (Summary)**

**Program # 12**

**1. Name of the Planned Program**

Climate Change: Water Quality Program

**2. Brief summary about Planned Program**

The Water Quality Program provides leadership through educational outreach to empower individuals to change practices and behaviors in order to protect public health and environmental quality in the U.S. Virgin Islands. The program provides information and technical assistance to the public on ways to minimize or prevent nonpoint source (NPS) pollution of our groundwater and surface waters (including guts, ponds, bays, lagoons and other coastal waters), and promotes the development of comprehensive watershed management strategies that incorporate the use of low-impact development practices and conservation of natural resources.

**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
101	Appraisal of Soil Resources	10%		0%	
104	Protect Soil from Harmful Effects of Natural Elements	10%		0%	
111	Conservation and Efficient Use of Water	10%		0%	
112	Watershed Protection and Management	10%		0%	
133	Pollution Prevention and Mitigation	60%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

Urban, suburban, commercial, and tourism-related developments are distinctly and adversely altering the Virgin Islands' fragile watersheds at a rapid rate. In particular, poor land clearing and landscaping practices are degrading flora, wildlife, soil, and water resources. Sediment resulting from soil erosion on construction sites, dirt roads and other disturbed areas is the largest pollutant of Virgin Islands waters, by volume. Millions of gallons of inadequately treated sewage are pumped into coastal waters daily by way of outfall pipes and failing septic systems, posing human and environmental health threats. Solid waste disposal has reached a crisis situation and the two landfills (one on St. Thomas and one on St. Croix) are

unlined, lack leachate collection systems, and are sited within the coastal zone. Future developments, as well as population growth, will further strain the islands' already inadequate and over-burdened infrastructure.

**2. Scope of the Program**

- In-State Extension

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

**1. Assumptions made for the Program**

- Development pressures generated by both residents and off-island interests can overwhelm conservation efforts and the effective use of best management practices (BMP's).
- Local agencies charged with environmental regulation and stewardship lack the resources and personnel to deal with the myriad of water quality problems and enforcement issues that they are faced with on a daily basis.
- Multi-organizational efforts can yield effective and efficient water quality outcomes.

**2. Ultimate goal(s) of this Program**

Develop and promote educational programs about health risks associated with water quality impairment, failing septic systems and toxic household products.

Increase the public's knowledge of the characteristics and functions of aquatic ecosystems (gulfs, salt ponds, mangrove lagoons, bays and oceans), including their role within a watershed, and increase knowledge of pollution prevention practices and personal actions they can employ to conserve and protect aquatic ecosystems and watersheds.

Develop and maintain partnerships for more effective and sustained solutions to long-term water quality and quantity issues.

Identify and/or develop technical materials related to watershed planning, low-impact development and non-point source pollution control practices and systems for use by policy-makers and regulatory personnel and disseminate information related to these topics through the local news media.

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.4	0.0	0.0	0.0
2018	1.4	0.0	0.0	0.0
2019	1.4	0.0	0.0	0.0
2020	1.4	0.0	0.0	0.0



2021	1.4	0.0	0.0	0.0
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**V(F). Planned Program (Activity)**

**1. Activity for the Program**

Train local government agency personnel, maintenance professionals, community group and non-governmental organization representatives, and volunteers to deliver information on water quality protection to their respective audiences and the general public utilizing the V.I. Home & Farm Water Quality Assessment (VI\*A\*Syst) program.

Develop and disseminate locally-oriented outreach materials related to water conservation, drinking water protection, wastewater disposal and best management practices for pollution prevention for delivery through the VI\*A\*Syst program, with particular emphasis on materials targeted towards youth and under-served audiences.

Educate homeowners and renters about residential environmental management including use of least-toxic household products and non-point source pollution control to protect aquatic ecosystems utilizing VI\*A\*Syst materials.

Develop publications, workshops, and presentations that relay information on the issues of watershed protection, non-point source pollution control, drinking water protection, and wastewater disposal and best management practices to reduce impacts to the general public.

Utilize the media to promote Water Quality programs through various methods, including, but not limited to, radio and television PSAs, television video spots, local talk shows (radio & TV), and videotapes of workshops, presentations, and symposia.

Provide technical assistance on a variety of topics, including but not limited to, erosion, sediment, and stormwater control; xeriscaping - incorporating native, drought-tolerant plants into the landscape; watershed planning; water quality assessment; drinking water protection; and environmental assessment, to government agencies, community groups, various areas of the private sector, and the general public.

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

**Extension**

<b>Direct Methods</b>	<b>Indirect Methods</b>
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Other 1 (Tours)</li> <li>● Other 2 (E-Education)</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● TV Media Programs</li> <li>● Other 1 (Publication Development)</li> <li>● Other 2 (Fairs)</li> </ul>

**3. Description of targeted audience**

Policy-makers and regulatory personnel, community groups, teachers and students, business community, non-governmental organizations, and the general public.

## V(G). Planned Program (Outputs)

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

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

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

## V(H). State Defined Outputs

### 1. Output Measure

- Education/Classes/Training in water quality protection and VI \* A \* Syst Program
- Workshops / Presentations about water quality protection, less toxic household products and NPS BMP's through the VI \* A \* Syst Program, on-site wastewater treatment, cistern care, and watershed protection.
- One-on-one consultations with residents, government employees, students
- Tours of VI natural areas with students, community groups and others to raise awareness about watersheds and water quality protection.
- Educational/research publications, articles, posters related to non-point source pollution, on-site wastewater treatment, watersheds, VI \* A \* Syst, and protection of VI native plant communities.
- Fairs
- TV/Media

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	Awareness of the health risks associated with water quality impairment and water and wastewater treatment systems will increase, and fifty (50) homeowners will learn how various household substances (i.e. Fat/Oil/Grease & Pharmaceuticals and Personal Care Products, etc.) potentially can negatively affect onsite wastewater treatment systems (OWTS), water resources, marine life and human health.
2	Requests for site visits and VI*A*SYST assessments and presentations will increase. 75 clients or more will each adopt at least one VI*A*SYST recommended practice such as the use of non-toxic household products, etc.
3	Fifty (50) homeowners will improve cistern water quality by following CES recommendations.
4	Over 100 VI youth will become aware of the vital connections between human activities and water quality, how land-based activities affect coastal water quality, and why watershed protection is important to them and their well-being. Youth and volunteer involvement in water quality protection and resource conservation will increase.

**Outcome # 1**

**1. Outcome Target**

Awareness of the health risks associated with water quality impairment and water and wastewater treatment systems will increase, and fifty (50) homeowners will learn how various household substances (i.e. Fat/Oil/Grease & Pharmaceuticals and Personal Care Products, etc.) potentially can negatively affect onsite wastewater treatment systems (OWTS), water resources, marine life and human health.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 133 - Pollution Prevention and Mitigation
- 112 - Watershed Protection and Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 2**

**1. Outcome Target**

Requests for site visits and VI\*A\*SYST assessments and presentations will increase. 75 clients or more will each adopt at least one VI\*A\*SYST recommended practice such as the use of non-toxic household products, etc.

**2. Outcome Type :** Change in Condition Outcome Measure

**3. Associated Knowledge Area(s)**

- 133 - Pollution Prevention and Mitigation
- 112 - Watershed Protection and Management

**4. Associated Institute Type(s)**

- 1862 Extension

**Outcome # 3**

**1. Outcome Target**

Fifty (50) homeowners will improve cistern water quality by following CES recommendations.

**2. Outcome Type :** Change in Condition Outcome Measure

### **3. Associated Knowledge Area(s)**

- 133 - Pollution Prevention and Mitigation

### **4. Associated Institute Type(s)**

- 1862 Extension

## **Outcome # 4**

### **1. Outcome Target**

Over 100 VI youth will become aware of the vital connections between human activities and water quality, how land-based activities affect coastal water quality, and why watershed protection is important to them and their well-being. Youth and volunteer involvement in water quality protection and resource conservation will increase.

### **2. Outcome Type : Change in Condition Outcome Measure**

### **3. Associated Knowledge Area(s)**

- 101 - Appraisal of Soil Resources
- 133 - Pollution Prevention and Mitigation
- 112 - Watershed Protection and Management
- 104 - Protect Soil from Harmful Effects of Natural Elements

### **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
- Populations changes (immigration, new cultural groupings, etc.)

### **Description**

• The VI environment is affected by hurricanes, droughts, and Sahara dust. Tsunamis and earthquakes are possibilities. These all have the potential to alter program outcomes. Program outcomes may shift to include disaster assessment and restoration efforts.

- Changes in the local economy can stimulate or diminish successes of outcomes and affect: ability of clients to invest in recommended BMP's; availability of public or private or funding for local conservation projects or to start an ecotourism business, etc.
- Changes in program appropriations may limit staff, materials and equipment, etc. needed to accomplish outcomes.
- Changes in government regulations (i.e. Environmental Protection regulations, Coastal Zone regulations, zoning laws) could require changes to outcome goals.
- Competing public priorities such as public land-use issues, etc. could trigger a shift in program focus and outcomes.
- Competing programmatic challenges could reduce resources and the success of outcomes.
- Changes in populations (immigration, new cultural groupings) are unpredictable and may alter outcomes.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

- Evaluation forms to be filled out after workshops, etc. will continue to be distributed.
- Evaluation methods will be strengthened to deal with community-based program development (i.e. home owners association, watershed associations, etc.).
  - Recommendations about collecting evaluation information from low-literacy and non-English speaking populations will be reviewed and the potential for program sustainability will be evaluated before new community-based programs or projects are developed.

**V(A). Planned Program (Summary)**

**Program # 13**

**1. Name of the Planned Program**

Climate Change: Natural Resources and Environmental Management

**2. Brief summary about Planned Program**

The Natural Resources and Environmental Management Program (NREM) utilizes education and extension activities to support learning and decision-making by citizens, public officials, developers, farmers, educators and students. NREM outreach activities encourage the adoption sustainable resource management practices that protect critically linked terrestrial and marine ecosystems in the U.S. Virgin Islands (VI), as well as public health. The program will foster a more complete understanding of terrestrial plant resources, watershed processes impacted by humans, ways to minimize nonpoint source (NPS) pollution of ground or surface waters, low-impact development practices, and climate-related research findings that can enable adaption to predicted conditions of global climate change.

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

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

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

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

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	35%		0%	
123	Management and Sustainability of Forest Resources	35%		0%	
134	Outdoor Recreation	20%		0%	
136	Conservation of Biological Diversity	10%		0%	
	<b>Total</b>	100%		0%	

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

**1. Situation and priorities**

- The Virgin Islands' (VI) marine and terrestrial ecosystems are closely inter-related and are heavily impacted by a population of over 110,000 residing on only 130 square miles.

- The Virgin Islands are currently in a state of over-development evidenced by the rapid pace of housing starts, accelerated shopping mall and road construction, tourism growth, critical solid waste disposal problems, and inadequate infrastructures.

- Urban, suburban, commercial, and tourism-related development are altering the Islands' fragile

ecosystems at a rapid rate because of poor land clearing and landscaping practices that negatively impact flora, wildlife, soil, water resources, and the environmental attractions that support the islands' tourism economy.

- The diverse, multi-cultural society reacts differently to issues affecting natural resource management. The small size and vulnerability of the resource base increases the sensitivity of these issues, the level of impact on the resources, and the socio-political complexities of management.

- It has become increasingly important to understand the perceptions of different groups in regards to environmental resources to improve management effectiveness, reduce the social conflicts over resource use, and change practices resulting in ecosystem degradation and loss of biodiversity.

- Government agencies have established or increased their environmental education and outreach programs, but these agencies currently do not have the capability to specifically focus on native VI flora. These agencies and others rely on UVI-CES to provide technical expertise and detailed information about native plant communities and their potential usefulness, as well as ecotourism development.

- Government agencies also need assistance with educating their employees and the general public about the importance of adopting best management practices that protect and restore VI natural ecosystems.

- There are also demands from educators, students, the business community, natural resource managers and the general public for technical assistance, training and materials related to natural resources and environmental issues, especially information related to native plants, useful plants, rare and endangered plants, forest resources, and ecotourism.

## **2. Scope of the Program**

- In-State Extension

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

#### **1. Assumptions made for the Program**

- The Virgin Islands are rapidly becoming urbanized without the benefits of the adoption of an official comprehensive land use plan. Although a comprehensive land use plan has been developed; it has not been enacted into law because it is believed by many that a plan will impede development. Excessive and improper landclearing, deforestation, destruction of native habitats and endangered species, lack of conservation easements and general ecosystem degradation result from a lack of comprehensive planning by regulatory agencies, developers and the general public.

- Development pressures generated by both by residents and off-island interests can overwhelm conservation efforts and the effective use of best management practices (BMP's).

- Most residential properties are small parcels under one acre (usually between 1/8 - 1/2 acre). Small lot size contributes to high impervious cover, introduction of large amounts of non-native vegetation and forest fragmentation with no effective regulation to control deforestation and the loss of natural biodiversity.

- It is perceived by some municipal officials that a weak regulatory response and lack of comprehensive planning can be somewhat countered by educating the public about the importance of adopting best management practices (BMP's) to protect and preserve the natural environment.



- Information about BMP's and VI forest ecosystems are available through UVI-CES.
- Current staff members are VI natives or long-time residents. Their experience and knowledge of the VI natural environment and cultural history attract many to seek their technical assistance.
- UVI-CES maintains some of the best collections of resource materials related to environmental management and the VI natural environment including various reports, inventories, VI ethnobotanical collections, and manuscripts that are extremely rare or non-existent elsewhere. A Virgin Islands Diagnostic Herbarium is housed and available to the public at the St. Thomas UVI-CES office and St. George Botanical Garden on St. Croix. The St. Croix Environmental Information Repository is housed and available to the public at the St. Croix UVI-CES office.
- Many local residents and property owners will be interested in learning more about BMP's, as well as the VI natural environment and what they can do to protect it.
- Many people and businesses will be interested in learning about how VI natural resources can be useful to them, to increase their enjoyment of the natural environment, to help them generate income from natural product development or to assist them in creating attractions for the tourist industry.
- Some natural resources managers will continue to adopt environmental management practices suggested by UVI-CES.
- Funding previously received from the VI Department of Agriculture's Urban and Community Forestry Program for native tree restoration projects, environmental landscaping workshops and publications on native forest ecosystem will be available in the future.

## **2. Ultimate goal(s) of this Program**

- To promote and emphasize holistic natural resource protection and conservation programs and projects on a watershed basis while also focusing on the potential of individual stewardship.
- To increase understanding of human effects on native habitats and natural resources (soil and water resources, native plants); habitat preservation and the incorporation of native plants into landscaping, and the potential usefulness of native plants for medicinal and other purposes.
- To annually increase adoption of best management practices that conserve, protect and/or enhance native forest and watershed protection.
- To provide interactive educational opportunities for Virgin Islands youth involving natural & cultural resources and other environmental issues to stimulate interest in the development of an ecotourism industry (especially on St. Croix) and careers in environmental management.
- To provide information and technical assistance to promote ecotourism (especially on St. Croix) through workshops, advisory committees, training programs for tour guides, and ecotours.
- To work with UVI's Conservation Data Center (CDC) and Center for Marine and Environmental Studies (CMES) in utilizing GIS mapping and other technologies for research and outreach purposes associated with the classification and monitoring of VI plant and marine communities and watershed studies.
- Conduct site visits to identify and/or protect native plants and habitats, endangered plants, and to reduce non-native plant invasion.

- Facilitate public-private partnerships between UVI, government agencies and community groups.
- To increase knowledge about climate change research and the possible impacts on the Virgin Islands and its inhabitants (i.e., coastal impacts, soil erosion caused by increased rainfall, more exposure to Sahara dust, etc.).

**V(E). Planned Program (Inputs)**

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	1.4	0.0	0.0	0.0
2018	1.4	0.0	0.0	0.0
2019	1.4	0.0	0.0	0.0
2020	1.4	0.0	0.0	0.0
2021	1.4	0.0	0.0	0.0

**V(F). Planned Program (Activity)**

**1. Activity for the Program**

- Continue participation with the development and implementation of environmental management, habit protection and restoration plans for territorial parks and recreation areas.
  - Continue participation with the development and implementation of environmental management master plans for Magens Bay, Estate Adventure Trail, and Great Pond Park recreation areas and a Magens Bay watershed advisory committee. Habitat protection and restoration plans/procedures will also be used to restore and/or protect other critical habitats, areas of particular concern in the territory, and areas designated as part of the VI Territorial Park initiative established by the Legislature of the VI in 2004.
- Develop resource conservation education outreach materials to engage the islands' growing immigrant populations and disseminate materials and information utilizing an innovative approach that incorporates and builds upon indigenous knowledge and practices.
- Develop websites, educational materials, workshops, presentations and demonstrations (informal learning sites) that relay information regarding native plants, ecosystems and habitats; naturalized, exotic, endangered and threatened plant species; urban forestry and other resource conservation issues.
- Utilize the media to promote Natural Resources programs through various methods, including, but not limited to, radio and television PSAs, television video spots, E-education, local talk shows (radio & TV), and presentations.
- Identify and/or develop technical materials related to resource conservation; pollution control practices; and native, medicinal, naturalized, exotic, endangered and threatened plant species for use by researchers, policy-makers and regulatory personnel.

- Provide technical assistance on a variety of topics, including but not limited to, plant identification, selection and maintenance; native, naturalized, exotic, endangered and threatened plant species; natural products development, environmental assessment; ecotourism development and other resource conservation issues to government agencies, community groups, various areas of the private sector, students and the general public.

- Play a lead role in facilitating the interaction of community groups and leaders to address natural resource conservation and management issues, as well as pollution control and prevention.

- Conduct ecotours for local schools and groups (mostly on St. Croix) to stimulate interest in careers in science, ecotourism or environmental management and to provide students and others with a general introduction to VI natural and cultural resources.

**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"> <li>• Education Class</li> <li>• Workshop</li> <li>• One-on-One Intervention</li> <li>• Other 1 (Tours)</li> <li>• Other 2 (E-Education)</li> </ul>	<ul style="list-style-type: none"> <li>• Public Service Announcement</li> <li>• TV Media Programs</li> <li>• Web sites other than eXtension</li> <li>• Other 1 (Publication development)</li> <li>• Other 2 (Fairs)</li> </ul>

**3. Description of targeted audience**

- Policy-makers and regulatory personnel, community groups, teachers and students, business community, non-governmental organizations, and the general public.

- Those charged with managing public recreation areas including the Magens Bay Authority, VI Territorial Park Advisory Committee, St. Croix East End Marine Park Committee, and Great Pond Park.

- Local environmental associations and Rotary Clubs that engage in activities to conserve and manage the VI environment.

## **V(G). Planned Program (Outputs)**

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

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

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

## **V(H). State Defined Outputs**

### **1. Output Measure**

- Education/Classes in natural resources management, VI forest ecosystems
- Workshops/presentations - VI forests, medicinal plants, environmental landscaping, watershed awareness, VI cultural and natural history, ecotourism, in-door air quality
- One on One consultation with residents, government employees, students
- Tours of VI natural areas for students and community groups
- E-education - NREM websites updated
- Publications, articles, posters related to natural resources and environmental management
- Fairs
- TV/Media

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

**V(I). State Defined Outcome**

O. No	Outcome Name
1	The recommended environmental management BMP's will be adopted by one natural resource manager annually and successful BMP's will be used as prototypes for other critical habitats, parks and areas designated as part of the VI Territorial Park.
2	As a result of direct and indirect contacts or after attending non-formal education programs, the number of adults and students who adopt practices that protect native plants and their habitats because of their increased understanding of the human effects on native ecosystems will increase by 200.
3	Increase the number of stakeholders (government personnel, developers, community groups and students) who became more aware of the connections between terrestrial and marine communities, how watersheds function, and the importance of watershed protection by 500.
4	The number of Virgin Islands youth who increase their awareness of VI natural and cultural resources, and careers in environmental management and ecotourism will increase annually by 300

### **Outcome # 1**

#### **1. Outcome Target**

The recommended environmental management BMP's will be adopted by one natural resource manager annually and successful BMP's will be used as prototypes for other critical habitats, parks and areas designated as part of the VI Territorial Park.

#### **2. Outcome Type : Change in Condition Outcome Measure**

#### **3. Associated Knowledge Area(s)**

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

#### **4. Associated Institute Type(s)**

- 1862 Extension

### **Outcome # 2**

#### **1. Outcome Target**

As a result of direct and indirect contacts or after attending non-formal education programs, the number of adults and students who adopt practices that protect native plants and their habitats because of their increased understanding of the human effects on native ecosystems will increase by 200.

#### **2. Outcome Type : Change in Condition Outcome Measure**

#### **3. Associated Knowledge Area(s)**

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

#### **4. Associated Institute Type(s)**

- 1862 Extension

### **Outcome # 3**

#### **1. Outcome Target**

Increase the number of stakeholders (government personnel, developers, community groups and students) who became more aware of the connections between terrestrial and marine communities, how watersheds function, and the importance of watershed protection by 500.

#### **2. Outcome Type : Change in Condition Outcome Measure**

### 3. Associated Knowledge Area(s)

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

### 4. Associated Institute Type(s)

- 1862 Extension

## Outcome # 4

### 1. Outcome Target

The number of Virgin Islands youth who increase their awareness of VI natural and cultural resources, and careers in environmental management and ecotourism will increase annually by 300

### 2. Outcome Type : Change in Condition Outcome Measure

### 3. Associated Knowledge Area(s)

- 134 - Outdoor Recreation

### 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
- Populations changes (immigration, new cultural groupings, etc.)

### Description

• The VI environment is affected by hurricanes, droughts, and Sahara dust. Tsunamis and earthquakes are possibilities. These all have the potential to alter program outcomes. Program outcomes may shift to include disaster assessment and restoration efforts.

• Changes in the local economy can stimulate or diminish successes of outcomes and affect the ability of clients to invest in recommended BMP's; availability of public or private or funding for local

conservation projects or to start an ecotourism business, etc.

- Changes in program appropriations may limit staff, materials and equipment, etc. needed to accomplish outcomes.
- Changes in government regulations (i.e. Environmental Protection regulations, Coastal Zone regulations, zoning laws) could require changes to outcome goals.
- Competing public priorities such as public land-use issues, etc. could trigger a shift in program focus and outcomes.
- Competing programmatic challenges could reduce resources and the success of outcomes.
- Changes in populations (immigration, new cultural groupings) are unpredictable and may alter outcomes.

## **V(K). Planned Program - Planned Evaluation Studies**

### **Description of Planned Evaluation Studies**

- Informal interviewing of stakeholder and/or project participants has been used successfully before, during and after projects. Project participants have agreed that these informal and culturally acceptable evaluation methods established good communications that resulted in successful project outcomes.
- Evaluation forms to be filled out after workshops, etc. continue to be distributed.
- Evaluation methods will be strengthened to deal with community-based program development (i.e. homeowners association, watershed associations, etc.). Evaluation methods will be strengthened by referring to evaluation resources such as the State Strengthening Evaluation Guide used by the CYFAR program.
- Recommendations about collecting evaluation information from low-literacy and non-English speaking populations will be reviewed and the potential for program sustainability will be evaluated before new community-based programs or projects are developed.