

# University of the Virgin Islands Combined Research and Extension Plan of Work 2020-2024

**Status: Final**  
**Date: 11/25/2019**

## I. Plan Overview

### 1. Executive Summary

St. Croix, St. Thomas and St. John comprise the primary inhabited U. S. Virgin Islands (USVI), consisting of 68 islands and cays located in the Caribbean. 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 and excellent harbors. Three miles east of St. Thomas, St. John is approximately 20 square miles; 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 pre-disasters fiscal conditions of USVI was well documented with high debt levels and a large structural budget deficit. The economic challenges of the USVI continues. They were exacerbated by the destruction caused by the two category 5 hurricanes, Irma and Maria in September, 2017. The jobs created for recovery projects funded by FEMA caused a reduction in the unemployment rates in the territory. The unemployment rates were approaching 20% immediately following the storms due to many businesses being closed. As recovery work begun, the unemployment rates began to drop as recovery related jobs, primarily funded by FEMA, became available. The overall unemployment rate ranged from 17.0 to 7.2%, with the district of St. Thomas having the highest level of 18.5% to 7.8%. The territory was already facing a financial crisis due to a very high debt level and a structural budget deficit before the hurricanes. Following the storms, it became worse. 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 University of the Virgin Islands (UVI) Cooperative Extension Service (CES) planned programs in the USVI. 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
<b>INCOME</b>				
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	\$19,883	\$22,458	\$25,730
<b>HOUSEHOLDS BELOW POVERTY THRESHOLD (2009)</b>				
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 USVI 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 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 territory's socioeconomic woes are illustrated by the fact that while median family incomes have changed very little, the number of children living in poverty has grown from 31% in 2012 to 37% in 2014. This increase is mirrored by a similar growth in the number of children living with single parents (59%). Unemployment in the territory has improved slightly, however, that translates into an increasing percentage of an already disproportionately large number of single, female, heads of household entering or reentering the workforce.

In the USVI, positive youth development is optimally attained using the traditional 4-H community club model, however, in-school clubs and special interest programs are growing in popularity providing shorter-term, targeted opportunities for both youth and adults to explore specific interests. 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 of CES and the Agricultural Experiment Station (AES) with UVI components will allow us to more effectively and efficiently train and support our clients. Partnering with local Departments of Education, Agriculture, Labor, Human Services and other government agencies will assist in marshalling critical resources. In addition, partnering with community-based and non-profit organizations will allow us to multiply efforts.

The critical issues for CES and AES have been structured to deal with the problems facing the USVI community. The UVI in its new Strategic Plan placed emphasis on leadership and excellence in academics, research and public services. To become a beacon for community engagement and outreach with research-based, data-driven, and proven strategies. Community engagement remains a 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 all of our stakeholders. We have consolidated programs where applicable. 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 USVI 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 CES will maintain partnerships with various departments of the local government and other organizations in order to successfully administer these programs.

The 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 of the Caribbean. 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 USVI, and protecting the natural resource base. AES has research activity in animal science, aquaculture, biotechnology, forage agronomy, vegetable crops, and Agroforestry.

Our vision is to generate information that leads to improved agricultural practices in the USVI and the Caribbean Region by conducting scientifically based agricultural 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, in collaboration with CES, more widely to farmers and the local community. Through science based conferences and journals our research results will be made available to the national and international scientific communities. 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.

## 2. FTE Estimates

Year	1862 Extension	1862 Research
2020	21.5	13.0
2021	21.5	13.0
2022	21.5	13.0
2023	21.5	13.0

2024	21.5	13.0
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## II. Merit / Peer Review Process

AES faculty participate in five multi-state research projects all of which 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 to see if they can identify another funding source and submit a grant application to conduct the research.

Scientists submit proposals to the Director to ensure the projects are aligned with the University strategic plan, the Research and Public Service Component Master Plan and the AES strategic plan. The Director sends the proposal to at least three individuals qualified to review the proposal. These individuals can be within or external to the University community.

Research results are shared with the community through seminars, workshops and training sessions coordinated with the CES. Attendance is monitored and follow-up is conducted by CES staff.

In order to guide resource allocation and programming decisions – CES staff, advisory council members, and other stakeholders such as, community representatives, university colleagues, and federal and local government entities weigh in on what is most needed by residents to increase their self-efficacy and resiliency in cultivating marketable skills. After programs are developed and delivered, a post feedback mechanism provides information, which guide future program offerings.

Programs developed by CES agents and specialists are sent to State Program Leaders for approval and submission to the Associate Director and State Director for their input and budget allocations. The programs are then forwarded for internal University review and approval before being sent to the Advisory Council for input and approval. The programs are then shared with specific Commissioners/Directors in the Virgin Islands Government for comments/input. The final programs are sent to the State Director for implementation.

All programs are advertised to encourage participation of the underserved/underrepresented populations. Program activities are held primarily in the evenings and on weekends to accommodate the needs of clientele. Special efforts are made to increase the membership of underrepresented racial/ethnic minority group members into structured 4-H/Youth and family community clubs, and special interest groups.

To reach the greatest number of stakeholders and maximize our resources, we collaborate with other government and private agencies in coordinating programs activities. These collaborations make AES and CES more efficient in reaching their target audience, leveraging more resources to cover more activities and enhance program delivery. These joint efforts also provide a holistic approach to our planned programs thus making them more effective.

The UVI new Strategic Plan, Greatness Through Innovation, focuses on leadership and excellence in academics, research and public service. AES and CES planned programs are consistent with the University plan and mission.

## III. Stakeholder Input

### 1. Actions to Seek

Due to the small geographic area of the USVI, AES scientists work closely with the local agricultural community, which fosters considerable communication and responsiveness to farmers' needs. USVI farmers and interested citizens tour

current projects and have an opportunity to comment on the work that is being performed. Farmers are invited to AES seminars.

Multiple stakeholder group opinions will be sought to assist the program in providing the most relevant and current information to residents. The following groups will be solicited to provide feedback: CES staff, community residents, education staff, university faculty/staff/students, youth and government officials.

CES personnel have developed long-standing relationships/associations with all sectors of the VI population and will use both direct and indirect methods to encourage stakeholder participation. Primary contacts with this base of stakeholders are often direct, informal and verbal; these contacts often lead to shared participation in projects. Stakeholders also frequently share CES information with their friends, increasing stakeholder numbers and participation.

Input will be sought through direct contact methods (word-of-mouth, meetings, phone/email, radio or TV conversations) and indirect methods (advertising through various media, informative articles/publications, flyers, PSAs and social media outreach). CES personnel will continue to visit areas and events where current and potential stakeholders congregate (i.e., recreational areas, markets, agriculture and environmental fairs, public hearings, etc.) to learn about stakeholder concerns, share technical information and/or plan participatory activities. Go directly to public and private schools, housing communities, churches, etc. Go directly to low income individuals who are responsible for preparing family meals, meals for school age children and meals for pregnant teens and adult. CES will continue to work with institutional, government and regional partners to seek input on issues of concern and advice about how to increase public participation in shared projects.

The CES will involve all stakeholders in the process of developing educational activities. Because of the increasing diversity of the Virgin Islands' community, the CES Advisory Council includes 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; assist in the development of new activities and in communication between CES and its stakeholders. The Council members are also members of different community groups and some are members of the 4-H Advisory Council. 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 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.

At Advisory Council meetings, members will continue to review CES planned programs and give recommendations on the different programs. They can recommended other programs and activities that they think would benefit the farming community and the general population.

## **2. Methods to Identify**

The AES'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 CES. 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.

Groups or individual providers of stakeholder input will be identified, based on program and professional experience, through informal meetings with stakeholders or partners, advertisements, radio and TV outreach, and/or social media outreach. In particular, referrals from some of CES's targeted groups will be sought to identify new input sources (for example: farmers, natural resource managers or regulators, STEM educators, taxi drivers, VI businesses/Rotary Clubs, local and federal government partners, VI environmental associations, and NGO's. Efforts will be made to identify stakeholders in other University programs, federal programs or from the ranks of job training applicants and trades professionals to collect input.

We will partner with collaborators to target adult volunteers with specific skills/interests; and work with local housing communities to identify low-income residents who may be interested. In focusing on youth partnering with several entities is critical and will be focused on school administrators and counselors, work with V.I. Department of Labor, partner with V.I. National Guard Youth and Family Program, partner with Caribbean Center for Boys and Girls, partner with community and issue-based groups (e.g. St. Croix Environmental Association, Nature Conservancy, V.I. Good Food Coalition, etc.)

Target groups include: low income families with children living in the household; youth who receive free school lunch and/or breakfast; families who participate in the SNAP program and or other Federal programs; and families living in public housing communities for low income individuals.

We will develop and maintain relationships with partners including government agencies, clinics, places of workshop, public and private schools, senior citizen centers, and day care centers along with government departments.

CES would continue to evaluate its programs by giving participants of all seminars, meetings, and workshops survey forms to complete. Farms and other 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.

### **3. Methods to Collect**

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.

In order to collect data the following will be utilized: surveys; anecdotal responses; pre-post evaluation instruments; observations word of mouth, community events, referrals and market research. Other methods will include one-on-one interviews, informal/formal meetings, collaborative workshops, discussions about particular issues with focus groups or targeted subpopulations and outreach through interactive media.

### **4. How Considered**

Stakeholder input is used when developing new research projects within AES. local issues are incorporated into projects when it is feasible and can be done using good scientific design. Because of limited faculty, staff and resources not all issues can be addressed and they are prioritized by potential impact and available resources.

Survey data will frame needs or gaps in programming and guide new program initiatives; and focus group feedback will help determine new programming trends especially for teens.

Input collected from stakeholders will be analyzed to determine how to achieve the best support and outcomes for planned programs. When appropriate, the planning will be stakeholder-based and designed to build support. Considering and incorporating the input and opinions of stakeholders will be prioritized, and efforts will be made to maintain communication with individuals who seem to be influential in their stakeholder groups to ensure effective program planning outcomes. If necessary, group meetings and collaborative workshops will be conducted to analyze problems, determine levels of stakeholder interest, generate solutions, brainstorm ideas, and /or make decisions and plans.

In educational programs, information obtained from pre and post tests, input from project partners/sponsors, client interviews and focus groups will be used to develop programs needed for educational outreach, areas that require more emphasis and to reinforce the projects mandates to effectively transfer knowledge.

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, Research programs and

setting priorities.

## IV. Critical Issues

### 1 Livestock Production

#### Description:

Hair sheep and Senepol cattle are popular breeds in the USVI, provide income for producers and help satisfy significant market demand. Most livestock producers in the USVI are part-time and face problems affecting production and profitability. This approach often leads to improper/inadequate housing facilities; pasture usage; animal identification; and recordkeeping which results in infertility, poor growth, parasitism and unproductive/unprofitable enterprise. Research areas to be investigated include animal management, reproductive physiology, breeding, mitigating environmental stress, enhancing reproductive efficiency and grazing. The rapid pace of development in the islands is forcing producers to raise their animals on smaller parcels of land. The consequences are forage degradation from overgrazing and increased occurrences of parasites. Working within the SOA and other research entities, the programs will continue incorporating hardier strains of forages that will withstand more intense grazing practices. Farmers will be continually educated on proper management techniques for heavily stocked pastures. Demonstrations and workshops will be conducted to assist producers in evaluating their management practices and determine how improvements can address their issues.

Most of the meats and eggs sold and consumed in the Virgin Islands are imported at a low cost making it difficult for local producers to compete but the public is interested in buying more local products for better taste and freshness. Marketing education programs will be conducted with a focus on quality standards, as well as educating consumers on the availability and benefits of purchasing and consuming locally produced animals and derived products.

**Term:** Long

#### Science Emphasis Areas

Agroclimate Science

Sustainable Agricultural Production Systems

### 2 Computer Training and Technology

#### Description:

Being technologically competent is now very important but many adults lack the relevant skills. Several of these are older persons who are digitally disadvantaged. There are also others from low-income households who have not had the resources or opportunities to acquire the needed skills. Some persons need these skills to become more marketable or to advance in their jobs; ultimately improving their income. There are others who want to accomplish their day-to-day tasks more effectively. In this fast-moving technological world, these skills are needed so that persons are not left behind.

The Computer Technology Training will increase participants' knowledge and usage of relevant technologies including introductory computer classes that begin with Microsoft Windows, Microsoft Word, and E-mail/Internet usage.

The program also includes computer/technology based workshops: Beginning/Intermediate MS PowerPoint - create effective presentations; Beginning/Intermediate Excel - create spreadsheets and utilize various functions; Usefulness of Internet – get the most out of the internet by finding information, shopping, communicating using various platforms, completing job applications, and paying bills online. The Smartphone and Tablet workshops will teach how to create and use email accounts on mobile devices, and use various apps to communicate, such as WhatsApp and Messenger. They will also download and remove apps, use their phones as hotspots, and connect to WiFi networks. In addition, participants learn safe practices while using their smartphones and tablets on networks. The main objective is to make participants computer literate and give individuals the skills they

need to enhance their lives.

Due to COVID-19, workshops and courses will be conducted virtually, when possible. Training videos will be created to allow distance learning. Workshops will be conducted on various videoconferencing platforms.

**Term:** Long

### **Science Emphasis Areas**

Education and Multicultural Alliances

## **3 Sustainable Agriculture**

### **Description:**

The Sustainable Agriculture program will educate and encourage farmers to adopt agricultural practices that are environmentally responsible, economically viable, and enhance the overall wellbeing of the territory. The long term success of local farms depends upon educational outreach programs that will disseminate to producers recommended research-based information on (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. 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. Due to the poor soil quality and rapid organic material turnover in the tropics, cover crops will be evaluated as a way to enhance soil quality and productivity. Cover crops will be evaluated in both livestock grazing scenarios as well as in crop production. Varieties of cover crops will be evaluated for their utility in the tropics. Production of fish and crops in aquaponic and/or hydroponic systems will be evaluated. Plant nutrient requirements and production rates will be evaluated within each system.

Through a combination of workshops, shortcourses, lectures, demonstrations, etc., farmers will be trained and encouraged to adopt best management, production, processing, and marketing practices. 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 through a combination of research and extension programming.

**Term:** Long

### **Science Emphasis Areas**

Agroclimate Science

Sustainable Agricultural Production Systems

## **4 Tropical Horticulture**

### **Description:**

Tropical Horticulture involves AES Horticulture and Biotechnology research projects with CES Urban Gardening program to provide information, education, and technical advice to commercial growers, home gardeners, nonprofit organizations, public and private agencies, and residents about caring for and cultivating fruits and vegetables. Virgin Islanders love to garden. Gardening provides mental, physical and economic benefits to young and older residents. The rising cost of imported basic necessities, including food items, has created a desire among residents to reduce their cost of living. Heart disease, cancer, hypertension, and diabetes are the top health 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.



As new varieties of tropical fruits and vegetable crops are developed they will be evaluated for production potential. Traits relative to production, harvesting and marketing will be evaluated. In addition, because of limited, seasonal rainfall, water requirement and micro-irrigation practices will be evaluated that growers and gardeners can incorporate into their production practice. 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 in landscape designs 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.

**Term:** Long

**Science Emphasis Areas**

Agroclimate Science

Sustainable Agricultural Production Systems

**5 Urban Forestry**

**Description:**

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, policies create situations that put landowners in tough decision-making positions about the management of their forest resources.

Many of the materials entering the waste stream can be reused/recycled to provide economic opportunities for entrepreneurs in our communities. Efforts have been made by local authorities to address these issues over the years. Recent category 5 hurricanes have devastated the Virgin Islands, destroying and damaging many trees throughout the Territory. Our community's ability to prepare and respond to these disasters was 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 our response and recovery process. A tree law was recently passed and its implementation should improve the urban forest, aid in our recovery efforts and help to restore a more resilient urban forest.

The Urban Forestry program will 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.

**Term:** Long

**Science Emphasis Areas**

Agroclimate Science

**6 Marketable Skills for Limited Resource Residents**

**Description:**

Virgin Islands residents, especially limited-resource families, continue to be negatively impacted by challenging socioeconomic conditions. These disparities are further exacerbated by the pandemic and its resultant stressors. Quality of life can be elusive for an already large number of households headed up by a single, female parent facing unprecedented unemployment and an increasingly higher cost of living. Minimal education and vocational training translate to entry-level, minimum wage positions often part-time with no benefits, and based on shift work that is not family-friendly. Providing a suitable environment for children to learn at home creates additional financial burden and stress for parents equally ill-equipped to support their children's education.

These circumstances provide a compelling backdrop and an opportunity for the newly formed UVI School of

Agriculture, through the Cooperative Extension Service, to connect limited resource families to the university and engage them in meaningful non-formal educational opportunities designed to assist limited-resource clients to pursue certificate programs, enter the workforce, cultivate their interests and explore opportunities to use their interests, skills and training to create their own entrepreneurial ventures.

With appropriate staffing, the 4-H/Family and Consumer Sciences program is willing to “respond to the needs of the community to once again offer workshops, short courses and programs that focus on Career and Workforce Readiness as well as Entrepreneurship.

**Term:** Long

**Science Emphasis Areas**

Family & Consumer Sciences

**7 Food Safety Education**

**Description:**

The Food Safety Education, in collaboration with the Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program (SNAP Ed) will continue to address the importance of safe food handling and food preparation in home kitchens throughout the territory with a specific focus on limited-resource families. According to the V.I. Department Health Division of Environmental Health, foodborne illnesses are far more prevalent than current statistics reflect. It is commonly understood that foodborne illnesses are frequently misdiagnosed and therefore are not reported, however, routine food safety best practices are often ignored.

The 4-H/Family and Consumer Sciences program is committed to educating children, youth, families and the community about food safety best practices to ensure a safe and healthy food supply for all residents. Personal hygiene, food storage, food preparation and cross-contamination, and recommended food handling practices will be shared via workshops, short courses and certifications.

In addition to food safety topics covered through EFNEP, SNAP Ed and educational programs, food safety will be covered as part of 4-H Healthy Habits programming as well.

Additional funding and programmatic support may be leveraged through USDA’s Food Safety Outreach Program (FSOP) and community partners providing ServSafe training and certification.

**Term:** Long

**Science Emphasis Areas**

Food Safety

Human Nutrition

**8 A Healthy, Well-Nourished Population**

**Description:**

A Healthy, Well-Nourished Population is supported by community-based and lifestyle education programs for Virgin Islands residents with special emphasis on limited resource children, youth, families and communities. The Virgin Islands has one of the highest rates of health complications arising from an overly obese population. High blood pressure, heart disease and diabetes are highly prevalent and exacerbated by a diet rich in starches, low levels of physical activity, and limited consumption of fresh fruits and vegetables. One of the most effective means of changing behavior to work with the family as a unit. Targeting youth while providing education for parents and the community at large is a best practice to ensure lasting change and improved healthy lifestyles.

The Expanded Food and Nutrition Education Program (EFNEP), SNAP-Ed and 4-H will continue to lead the way in providing juried educational programming focused on engaging participants in understanding the importance

of:

Drinking more water and low-fat milk  
Eating more fresh fruits and vegetables  
Increasing consumption of whole grains  
Starting our day with breakfast  
Go lean with protein  
Planning and budgeting our food dollar  
Practicing food safety skills

**Term:** Long

**Science Emphasis Areas**

Family & Consumer Sciences  
Human Nutrition

**9 4-H - Positive Youth Development and Volunteerism**

**Description:**

In the Virgin Islands, positive youth development continues to be optimally attained through the traditional 4-H Community Club model, however, in-school and SPIN (special interest) clubs have proven very successful in engaging youth and recruiting adults as they explore mutual, specific interests. Well-trained, highly motivated and empowered volunteer leaders – both teens and adults – remain the single most important factor in establishing strong, vibrant 4-H clubs and programs.

The 4-H/Family and Consumer Sciences Program should serve as a catalyst to work with UVI to research its policies addressing use of volunteers, and the liability and risk management issues inherent with doing so.

Expanding our professional staff team will allow the program to pursue the development of a Volunteer Development manual that will bring our volunteer program into the 21st century, outlining rigorous orientation and training programs, appropriate screening, and empowering and valuing volunteers as a critical component supporting our educational outreach efforts within the UVI School of Agriculture, Cooperative Extension and the 4-H/Family & Consumer Sciences.

Additional efforts and resources will be used to create a cutting edge, vibrant, engaging virtual learning space and resources that can be used as long as the pandemic environment persists. Once in-person opportunities return, virtual resources can continue to be used to extend our reach and allow clientele to access our programs in ways that we have not been able to do so in the past.

**Term:** Long

**Science Emphasis Areas**

Youth Development

**10 Protecting the VI Natural Resources and Environment**

**Description:**

Critically linked VI terrestrial and marine ecosystems need protection. Extension activities encourage the adoption of sustainable natural resource and watershed management practices to preserve environmental and natural resources base, assist post-hurricane recovery, restore post-hurricane landscapes, conserve cultural and natural history resources in recreational areas, and stimulate/grow a vital tourism/ecotourism industry. Extension

educational activities promote learning and inform decision-making by citizens, public officials, resource managers, farmers, developers, educators and students to foster and promote a more complete understanding of terrestrial plant resources, ethnobotany, watershed processes impacted by humans, how to minimize nonpoint source (NPS) pollution of ground or surface waters, low-impact development practices, healthy home strategies and climate-related research findings to enable adaptation to predicted climate change conditions.

**Term:** Long

**Science Emphasis Areas**

Agroclimate Science  
Environmental Systems

**11 Animal Science - Small Ruminants**

**Description:**

Hair sheep are a popular ag commodity in the territory and provide income for producers and satisfy significant market demand. Research to evaluate management systems and practices to enhance productivity under tropical conditions will be conducted. Areas to be investigated include reproductive physiology, breeding, heat tolerance and grazing.

**Term:** Long

**Science Emphasis Areas**

**11 Beef Cattle Production**

**Description:**

A local breed of cattle, Senepol, has traits that make it extremely adapted to the tropical climate, both locally and around the world. Studies will be conducted to study the traits that make them adapted along with general cattle productivity traits to develop selection practices. Research will also be conducted on animal management, breeding, mitigating environmental stress and enhancing reproductive efficiency and using assisted reproductive technology.

**Term:** Long

**Science Emphasis Areas**

**13 Agronomy - Cover Crops**

**Description:**

Due to the poor soil quality and rapid organic material turnover in the tropics, cover crops will be evaluated as a way to enhance soil quality and productivity. Cover crops will be evaluated in both livestock grazing scenarios as well as in crop production. Varieties of cover crops will be evaluated for their utility in the tropics.

**Term:** Long

**Science Emphasis Areas**

**14 Aquaculture**

**Description:**

Production of fish and crops in aquaponic and/or hydroponic systems will be evaluated. Plant nutrient requirements and production rates will be evaluated within each system.

**Term:** Long

**Science Emphasis Areas**

**15 Horticulture**

**Description:**

As new varieties of field crops are developed they will be evaluated for production potential in the tropics. Traits relative to production, harvesting and marketing will be evaluated. In addition because of limited, seasonal rainfall water requirement and micro irrigation practices will be evaluated.

**Term:** Long

**Science Emphasis Areas**

**16 Biotechnology - Plant Breeding**

**Description:**

Field crops and plant varieties will be selected for use under tropical conditions. Crops to be evaluated can include both leafy crops, fruits and root crops. Tissue culture propagation as well as standard germination processes will be incorporated.

**Term:** Long

**Science Emphasis Areas**