

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Horticulture and Aquaculture - Irrigation

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water			40%	
205	Plant Management Systems			20%	
405	Drainage and Irrigation Systems and Facilities			40%	
	Total			100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	0.0	0.0	1.0	0.0
Actual Paid	0.0	0.0	1.0	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

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

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
0	0	18339	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
0	0	9033	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Conduct research projects
 Present data at conferences
 Publish results in scientific journals

2. Brief description of the target audience

The target audiences are the local crop farmers and back yard growers. These producers normally have less than two acres under production. The Virgin Islands has only three producers with total production acreage over two acres.

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	0	0	0	0

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

Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Abstracts presented at conferences

Year	Actual
2014	0

Output #2

Output Measure

- Articles published in scientific journals

Year	Actual
2014	0

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number of farmers adopting irrigation strategies based on soil moisture
2	Knowledge of fertigation and chemigation use in vegetable crop production

Outcome #1

1. Outcome Measures

Number of farmers adopting irrigation strategies based on soil moisture

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The "Challenge of the 21st century" will be coping with water scarcity according to the Food and Agriculture Organization of the United Nations (FAO, 2013) Much effort will be required to meet food and freshwater demands for future global populations. Fresh water is presently a scarcity in the US Virgin Islands since there are no flowing rivers, lakes, or reservoirs and municipal water is derived from costly desalination of sea water. The US Virgin Islands also has an extended dry season that lasts for six months of the year and severely limits agricultural production. Rain water harvesting is the primary means of collecting water for agricultural use. Microirrigation is the most efficient use of water for crop production and the use of fertigation has potential to increase crop production and water use efficiency.

What has been done

During 2014, an extensive effort was undertaken to refurbish and establish a commercial scale rainwater harvesting, catchment, storage, and irrigation distribution system for research and demonstration purposes. This facility consists of a 2 acre rainwater catchment area, a storage pond, five 30,000 gallon storage tanks, pumps, and related infrastructure necessary for sustainable crop production on approximately 5 acres utilizing micro irrigation technologies.

Results

Research is currently being conducted to evaluate the application and efficiency of this facility on various cropping systems. Results will be analysed and presented to local farmer stakeholders, at professional conferences, and utilized within professional publications.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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111	Conservation and Efficient Use of Water
205	Plant Management Systems
405	Drainage and Irrigation Systems and Facilities

Outcome #2

1. Outcome Measures

Knowledge of fertigation and chemigation use in vegetable crop production

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farmers access to fresh water for irrigation is presently a scarcity in the US Virgin Islands since there are no flowing rivers, lakes or reservoirs. The US Virgin Islands also has an extended dry season that lasts for six months of the year and severely limits agricultural production. Fertigation is the most efficient use of water for crop production and the use of fertigation has potential to increase crop production and water use efficiency.

What has been done

An extensive effort was undertaken to refurbish irrigation distribution system for research and demonstration purposes for sustainable crop production on approximately 5 acres utilizing micro irrigation technologies.

Results

Research is currently being conducted to evaluate the application and efficiency of fertigation on various cropping systems. Results will be analysed and presented to local farmer stakeholders, at professional conferences, and utilized within professional publications.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water

205	Plant Management Systems
405	Drainage and Irrigation Systems and Facilities

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Using fertigation incorporated into drip irrigation systems is an efficient method of even distribution of water soluble nutrients to the growing crop plants.

Key Items of Evaluation