



# HUNGER FIGHTERS UNITE!

A Simulation Lesson for the  
World Food Prize Michigan Youth Institute Pre-College Program

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Adapted and written by:

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**mail:**  
U.S. Department of Agriculture  
Office of the Assistant Secretary for Civil Rights  
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## Suggested Outline for Hour or Session 1

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5 Minutes	Welcome and name tents
10 Minutes	Topic Introduction
10 Minutes	Pre-Test
10 Minutes	Building knowledge/concepts for today
10 Minutes	Sticky note/rank leadership roles
10 Minutes	Post-Test
5 Minutes	Reflect and pick challenge topic and role



## Welcome!



Calling all Hunger Fighters!

Travel the globe with us to impact change in food security. Cultivate your passions for food and citizenship as you take on one of the **world's greatest challenges!** Discover and experience careers, cultures, and connections. Fill your suitcase with ideas and resources for future engagement as you are inspired to become a **future Hunger Fighter!**

(Some PPT slides adapted with permission from the World Food Prize Foundation)



## Let's get started...

1. Got internet or WIFI ready?
2. Pre-test : Scan and fill out.

Add the current QR code and Menti passcode here or use handout pre-test.



# Introduction to Food Security

## The four essential pillars of food security:



**Availability:**

food has to be physically present in adequate quantities within communities



**Access:**

people have the ability and resources (income) to obtain food



**Utilization:**

food is prepared safely and effectively to provide nutritional value



**Stability:**

food is present at all times without disruptions



## Introduction – the Data

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### WHY DOES THIS MATTER?

1 IN 9 PEOPLE DON'T  
HAVE ENOUGH SAFE AND  
NUTRITIOUS FOOD

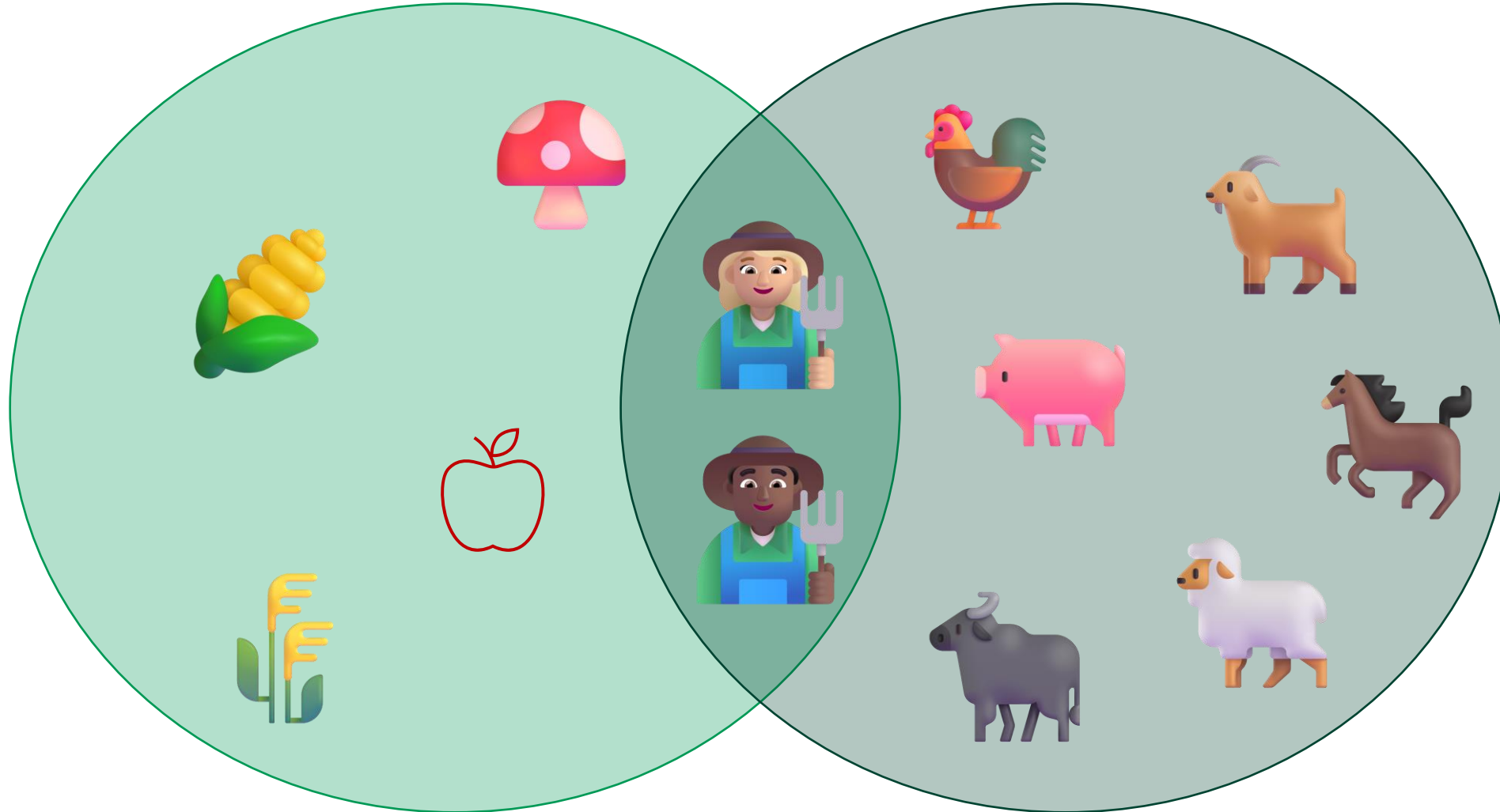






# Introduction – Animal and Crop Agriculture

CROP AGRICULTURE



ANIMAL AGRICULTURE

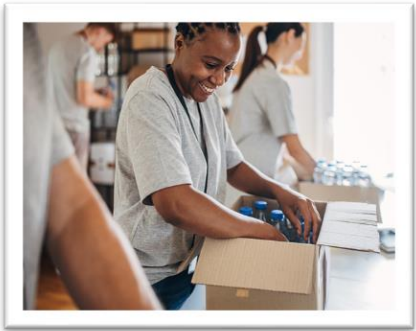




# Global Leadership Roles – Working Together to Make Change

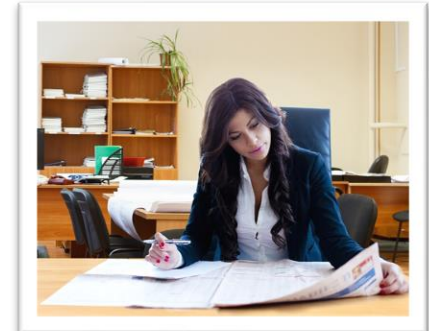
## Non-governmental organization

1. Improve quality of life



## Business owner

1. Growth
2. Operations
3. Future



## Researcher

1. Investigate
2. Solutions



## Farmer/producer

1. Manage
2. Raise
3. Produce

## Government

1. Laws
2. Policies
3. Assisting





# Challenges to Food Security

**Animal Agriculture**

The care and breeding of livestock, poultry and other animals for food, fibers or other products.

**Animal Health**

Protect and improve the health, safety and quality of livestock, poultry and aquaculture.

**Climate Change**

Adapt agricultural practices and policies to respond to significant changes in the Earth's climate.

**Conflict**

Political, economic, environmental or social disagreements. May involve violence or armed conflict.

**Dietary Diseases**

Disease caused by lack of nutrition or a lack of exercise.

**Education**

The delivery of knowledge, skills and information.

**Fisheries and Aquaculture**

Catching or harvesting fish, shellfish and other aquatic organisms for human consumption through wild-caught or farmed operations.

**Food Loss and Waste**

Food that is lost, spoiled or discarded in production, postharvest, processing or consumption.

**Foreign Aid**

Assistance given by one country to another for humanitarian relief or development efforts.

**Human Rights**

Rights that all people are equally entitled to regardless of their nationality, sex, race, ethnicity, religion, language, etc.

**Infectious Diseases**

Infections and illnesses that can be spread from one person to another, among animals or between animals and humans.

**Infrastructure**

The physical structures and facilities critical for the operation of a society, such as roads, bridges, schools, power, etc.

**International Trade**

The exchange of capital, goods and services between countries.

**Malnutrition**

Deficiencies, excesses or imbalances in a person's intake of energy, protein and nutrients.

**Plants**

Utilizing plants to increase and improve food, nutrition, medicine, fibers, fuels and other products.

**Policy and Governance**

The implementation of policies, processes and structures that determine how power is distributed and shared.

**Populations**

The characteristics and movements of the inhabitants of a country including urbanization, migration and growth.

**Poverty**

Lack of financial resources needed to afford basic necessities such as food, housing, education, health care and clean drinking water.

**Renewable Energy**

Energy created from naturally occurring sources such as water, wind, solar and biofuels.

**Sustainable Agriculture**

Best practices to grow food and fiber with a focus on protecting the environment and natural resources.

**Water and Sanitation**

Clean drinking water and adequate sewage disposal to improve human hygiene and health.

**Water Scarcity**

The lack of available water resources to meet the demands within a region.

The four essential pillars of food security:



Availability:



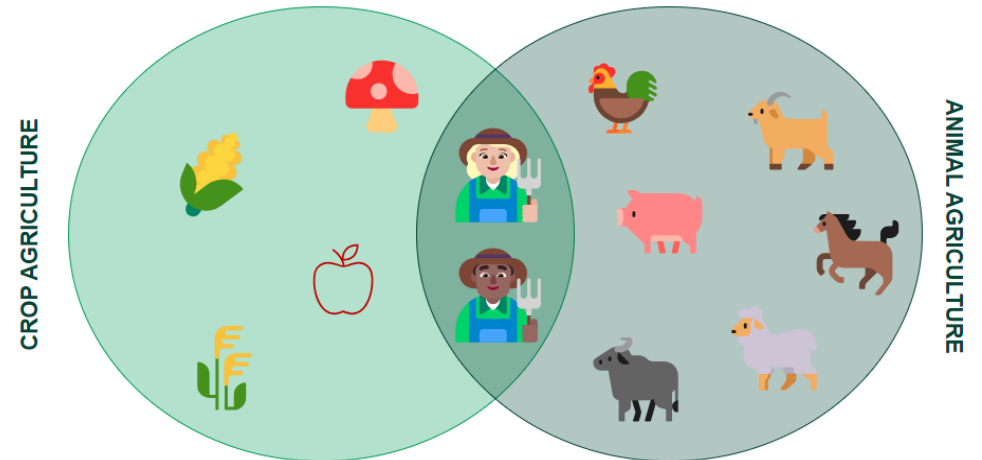
Access:



Utilization:



Stability:





## Sticky Notes Activity

Using the sticky notes, rank the roles of leadership that were just discussed in order of importance as you see them:

1 being highest and 5 being lowest.

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## Post-Test

1. Internet, WIFI is connection needed.
2. Scan and fill out.

Add the current QR code and Menti passcode here or use handout post-test.



## Time to Shift into Small Groups

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- Group 1 – Water and Sanitation
- Group 2 – Animal Agriculture and Health
- Group 3 – Renewable Energy
- Group 4 – Infrastructure

(Each group needs their data slides)

Students will work together to identify factors contributing to food insecurity related to their assigned challenge topic and propose potential solutions to make improvements. Each participant should contribute to the conversation from the perspective of the role they are assigned.



## Suggested Outline for Hour or Session 2

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10 Minutes	Total group overview of the U.S. Virgin Islands
5 Minutes	Get in small groups and assume individual roles
5 Minutes	Real Life examples of making a difference
10 Minutes	Cultural snack break
25 Minutes	Small group research and discussion
5 Minutes	Total Group Reflection



## **UNITED STATES (U.S.) VIRGIN ISLANDS**

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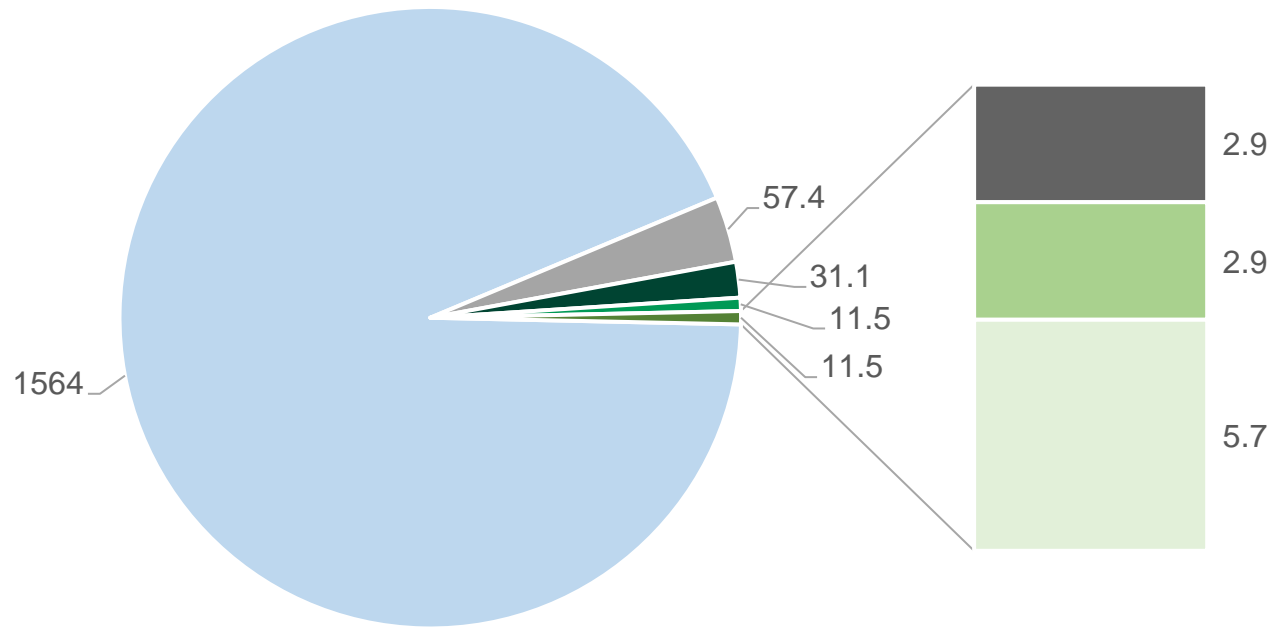
- The Caribbean -**
  - St. Croix**
  - St. John**
  - St. Thomas**



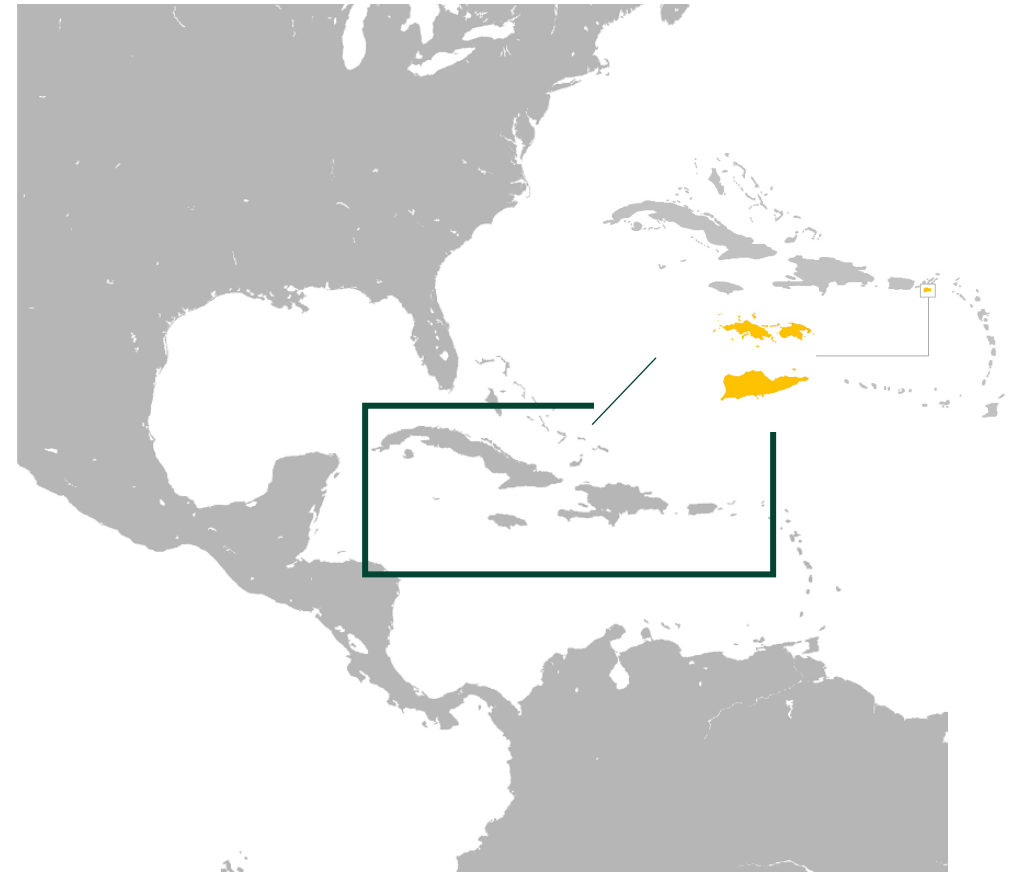


# U.S. Virgin Islands – Overview of Land Availability and Use

Composition of land availability, km2



- Water
- Other
- Arable
- Permanent pasture
- Forests
- Agriculture
- Permanent crops





## U.S. Virgin Islands – Overview of Land Availability and Use – Slide 1

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- Climate and terrain

- Mountainous with rugged hills
- Subtropical climate with low humidity and little temperature variation
- Rainy season is normally September-November
- Primarily saltwater access points

**565**  
farms



**9,324**  
acres



**16.5 acres**  
average farm size





## U.S. Virgin Islands – Overview of Land Availability and Use – Slide 2

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- Climate challenges
  - Hurricanes and earthquakes
  - Droughts and floods

**565**  
farms



**9,324**  
acres



**16.5 acres**  
average farm size





## U.S. Virgin Islands – Overview of Land Availability and Use – Slide 3

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- Development challenges
  - Lack natural freshwater access
  - Coastal development and oceanic preservation
  - Sanitation

**565**  
farms



**9,324**  
acres



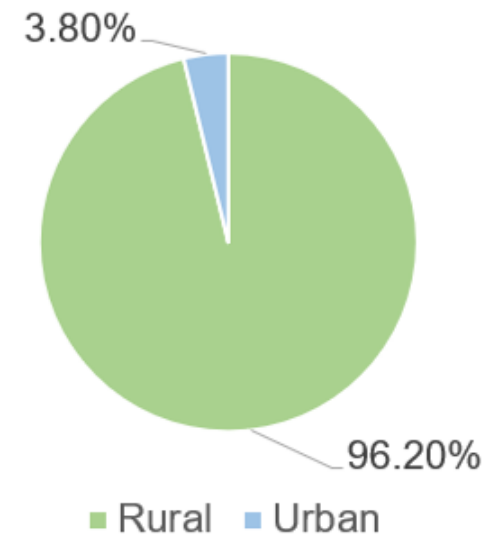
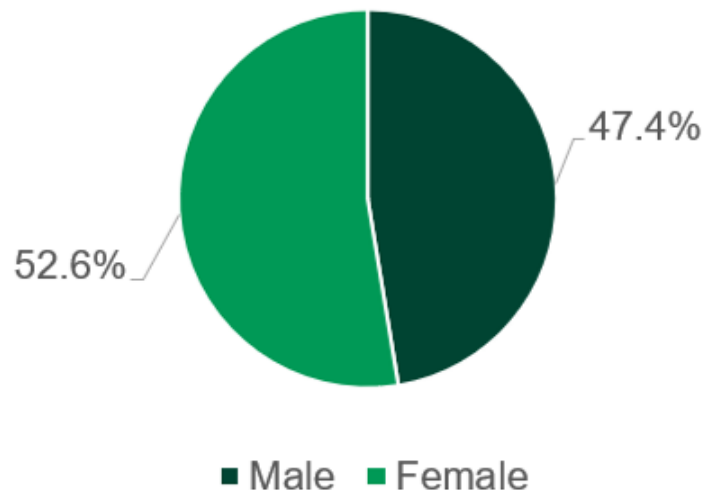
**16.5 acres**  
average farm size





## U.S. Virgin Islands Country Demographics and Population

- Overall, the population is **shrinking but** maintains a fertility rate of **1.97 children/woman**.
- Approximately, 28.9% of the population is **below the poverty line**, 12.9% are **unemployed** and the island generates ~146,500 tons of **municipal solid waste**.
- The main diet consists of typical island foods (**seafood, fungi, etc.**).
- The Virgin Islands are a territory of the United States and **operates within the U.S. government** with an elected governor.

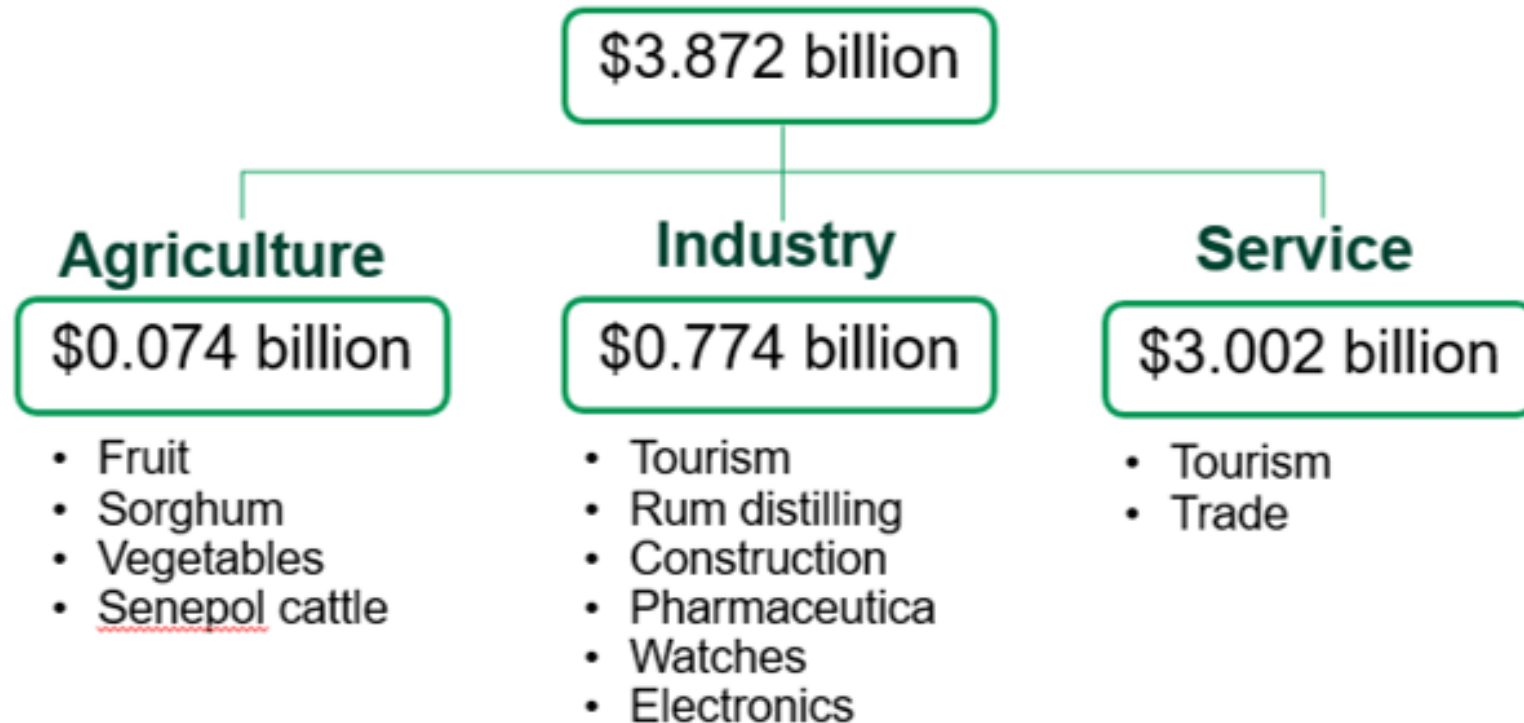




## U.S. Virgin Islands Economic Health

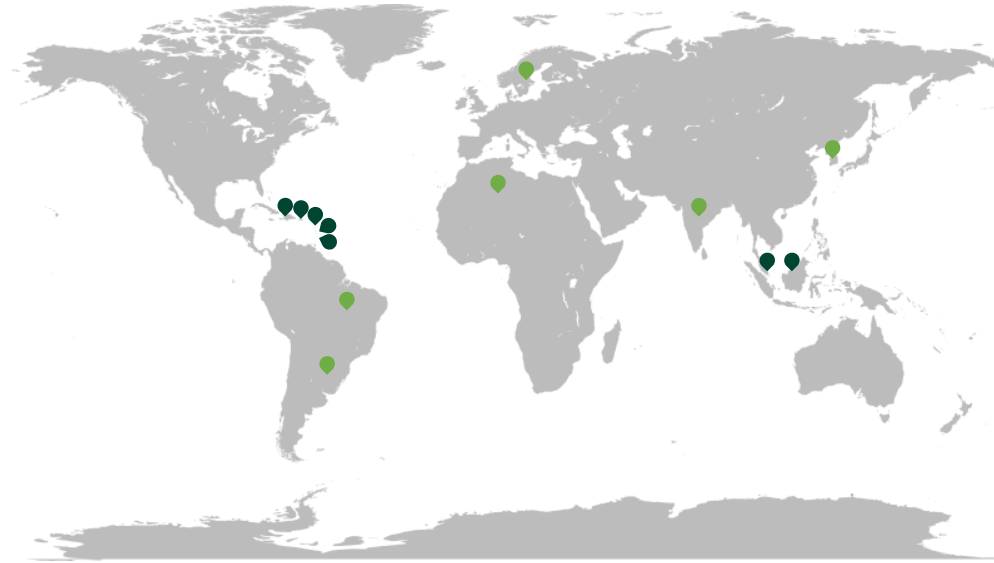
A country's gross domestic product (**GDP**) is an indicator of economic health by providing a summary of all services and products produced within that country.

### U.S. Virgin Islands Real GDP





## U.S. Virgin Islands Economic Health Continued



- Refined petroleum
- Jewelry and watches
- Recreational boats
- Rum

**Exports**

**Imports**

- Refined petroleum
- Crude petroleum
- Rubber pipping
- Jewelry
- Beer

**U.S. Virgin Islands Real GDP**

**\$3.872 billion**





## Real Life Examples of Making a Difference

Deb teaches career exploration and workforce development. She helps young people find opportunities, develop their skills, and set goals for their futures.

Paiton works in animal science research that will potentially have positive long-term impact on animal health.

### What have you done locally?

### Have you ever...

- Helped with or donated to a food drive?
- Helped provide a meal for others?
- Donated or made items for a cause?





## Small Groups Again – Time to Shift

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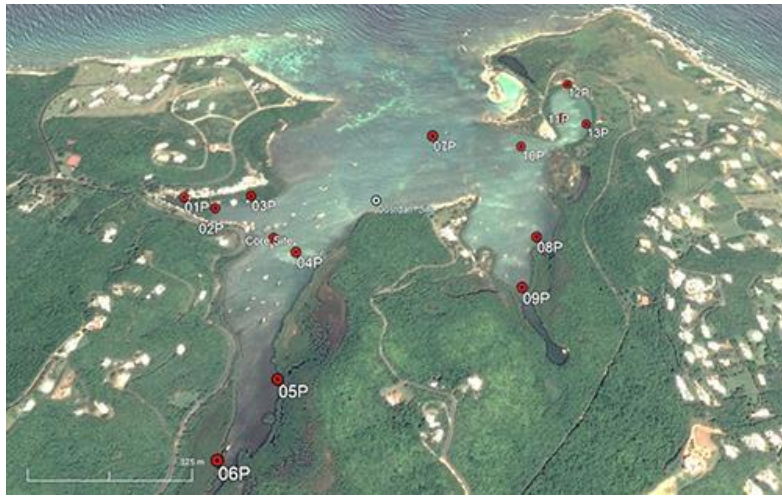
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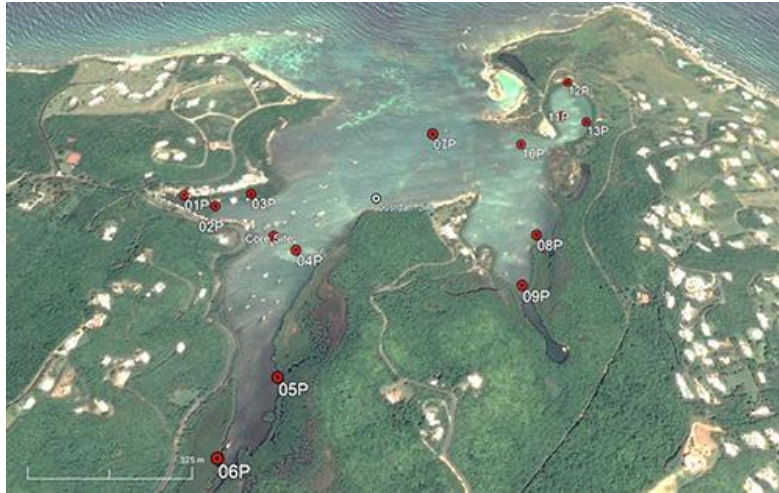
## GROUP 1: U.S. Virgin Islands - Water and Sanitation (Slide 1)



- 98.7% of population has access to improved water sources while 99.4% has access to improved sanitation facilities.
  - However, ~**25% of homes access** municipal water and most collect rainwater in cisterns.
  - After testing, ~**80%** of cistern water tested positive for *Escherichia coli*.



## GROUP 1: U.S. Virgin Islands - Water and Sanitation (Slide 2)



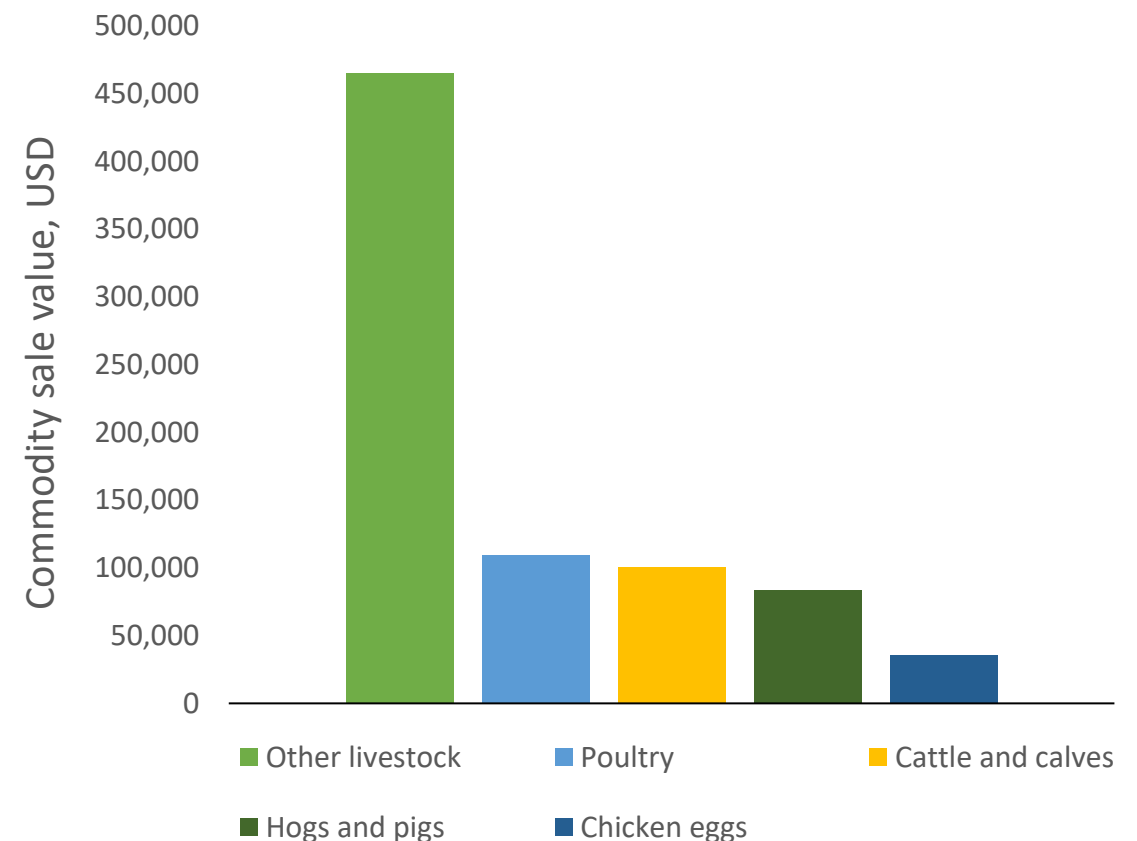
- In September and October 2023, the Environmental Protection Agency (EPA) responded to discolored drinking water.
  - Analysis revealed that 36 sites had **high lead and copper** levels.
  - Houses that sourced water had lower contamination than at distribution meters.
    - Limited sites provide drinking water and treat wastewater.
    - Geography presents challenges to traditional septic systems.





## GROUP 2: U.S. Virgin Islands - Animal Agriculture and Health

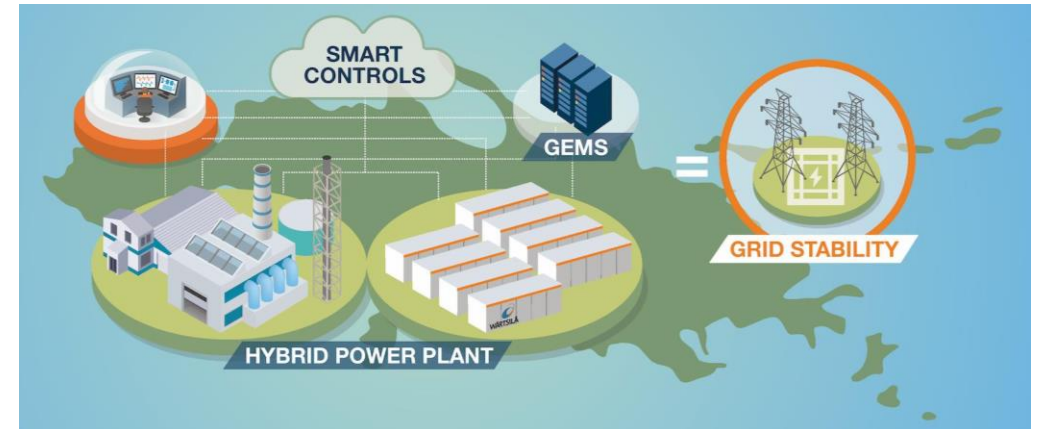
- Due to cold storage limitations, St. Croix currently provides humane animal harvest to all three Virgin Islands to increase access to local meat.
- Producers have limited freshwater access.
- Islands are at risk for droughts.
- Reports suggest livestock harbor *Leptospira* bacteria.
  - This bacteria can lead to **abortions**, **infertility** and **poor production**.





## GROUP 3: U.S. Virgin Islands - Renewable Energy (Slide 1)

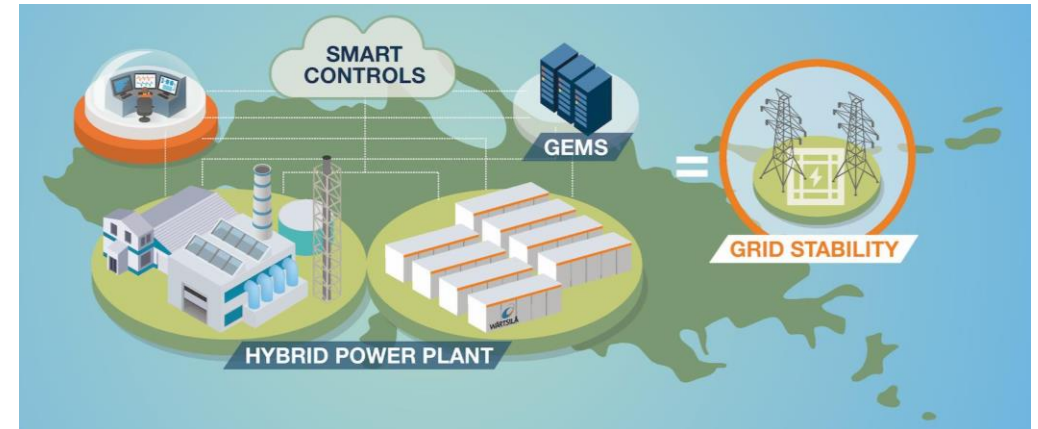
- The islands have no fossil fuel reserves and import petroleum to meet most of their energy needs.
  - They have limited use of renewable energy but do have limited solar energy resources.
  - Around **70% of petroleum** is used for electricity and desalination.
  - Petroleum use is responsible for most of the carbon monoxide emissions.





## GROUP 3: U.S. Virgin Islands - Renewable Energy (Slide 2)

- The crude oil refinery is currently closed due to lasting chemicals from previous facilities.
  - The Water and Power Authority (WAPA) is trying to convert from fuel oil to propane.

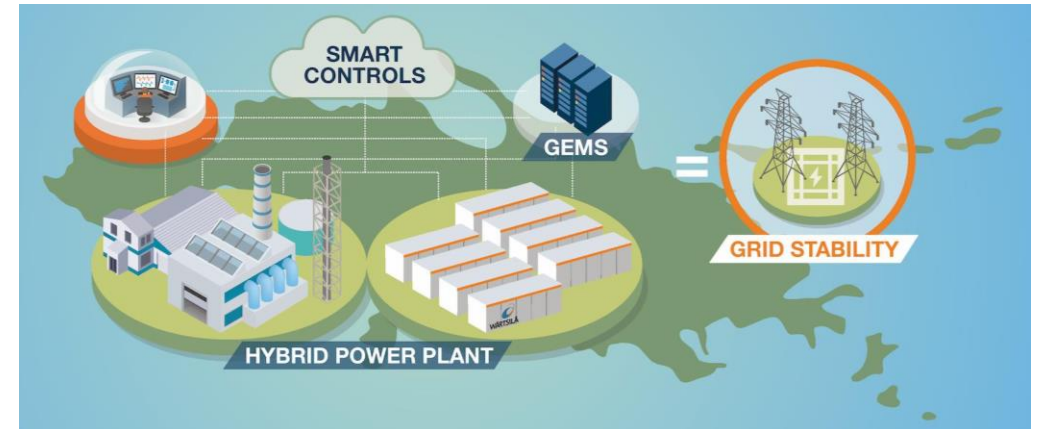






## GROUP 3: U.S. Virgin Islands - Renewable Energy (Slide 3)

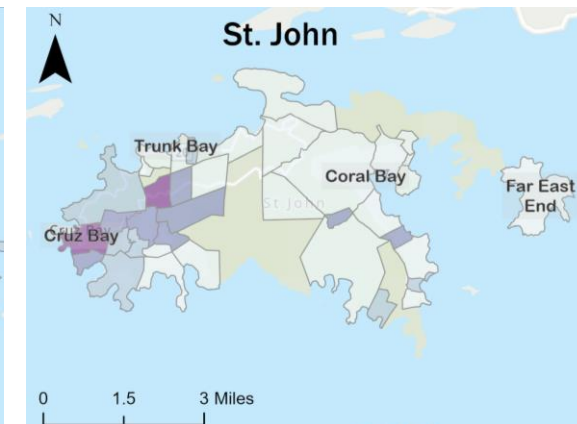
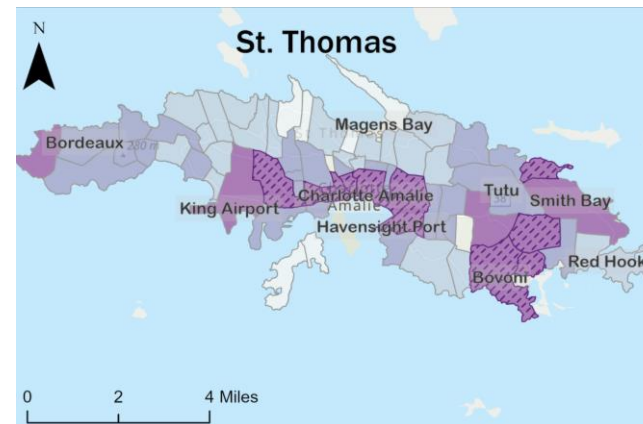
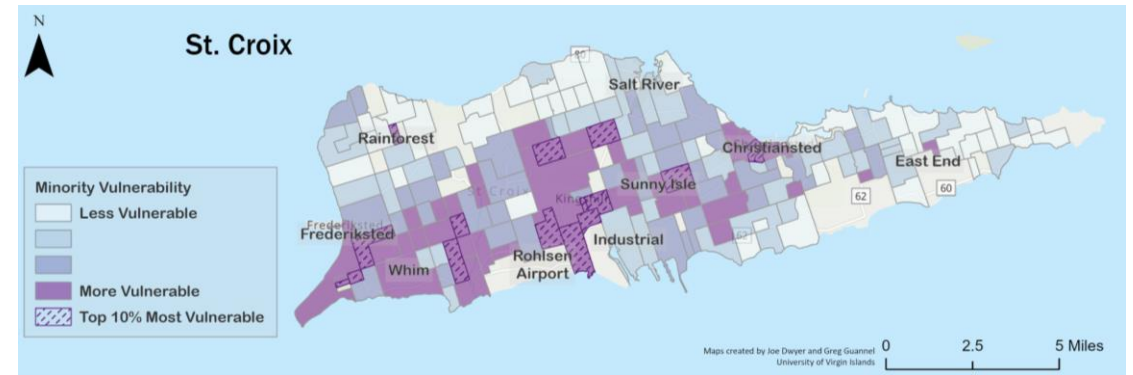
- WAPA is planning to install underground electrical lines and composite poles due to weather risks. This entity has also purchased property for wind and solar farms.
  - 100% of people have access to electricity, but it can be expensive.
  - **80%** of the population has a mobile phone and **64.8%** have internet access.
  - Only **41%** of farms have internet access.





## GROUP 4: U.S. Virgin Islands – Infrastructure (Slide 1)

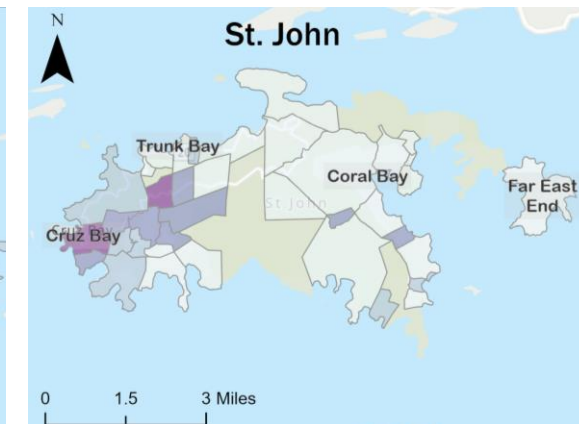
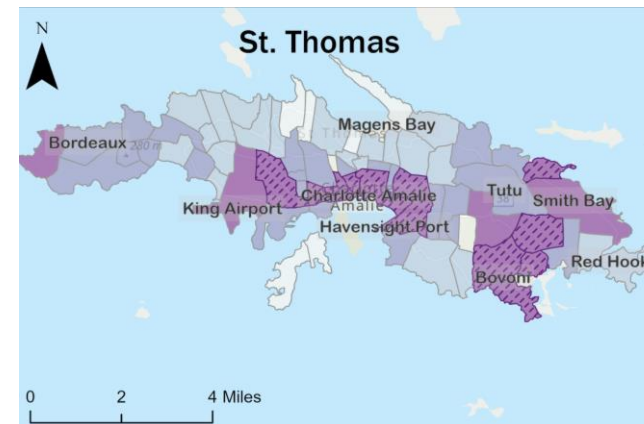
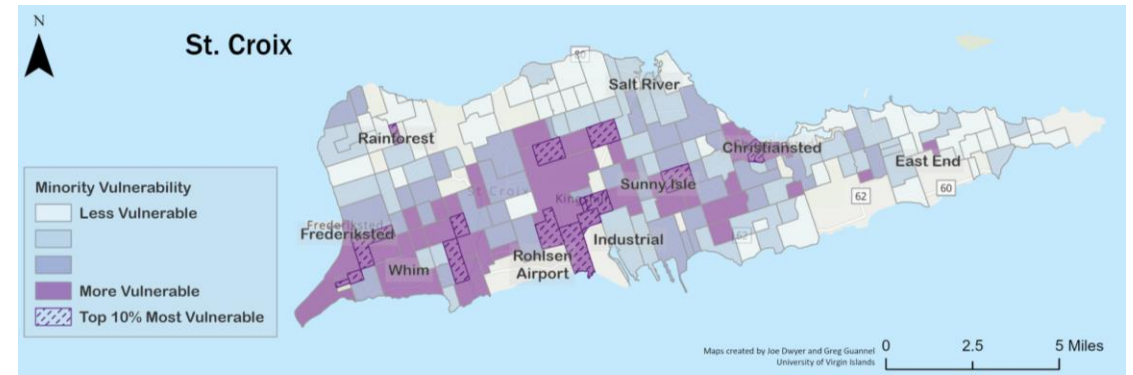
- The islands have several cargo and ferry ports in addition to two international airports.
- 20% of each mile of road is in poor condition.





## GROUP 4: U.S. Virgin Islands – Infrastructure (Slide 2)

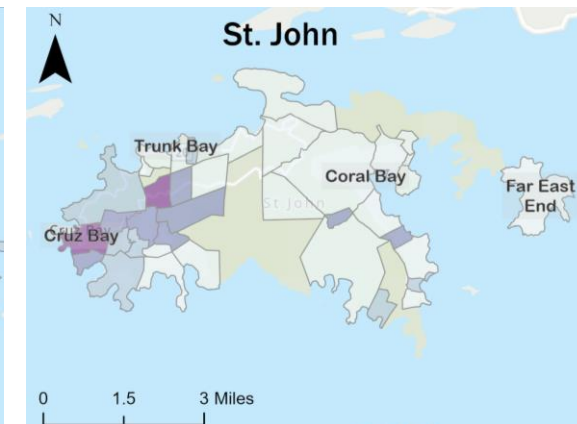
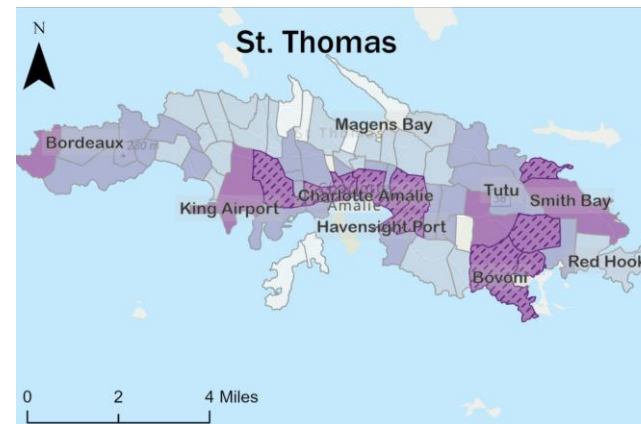
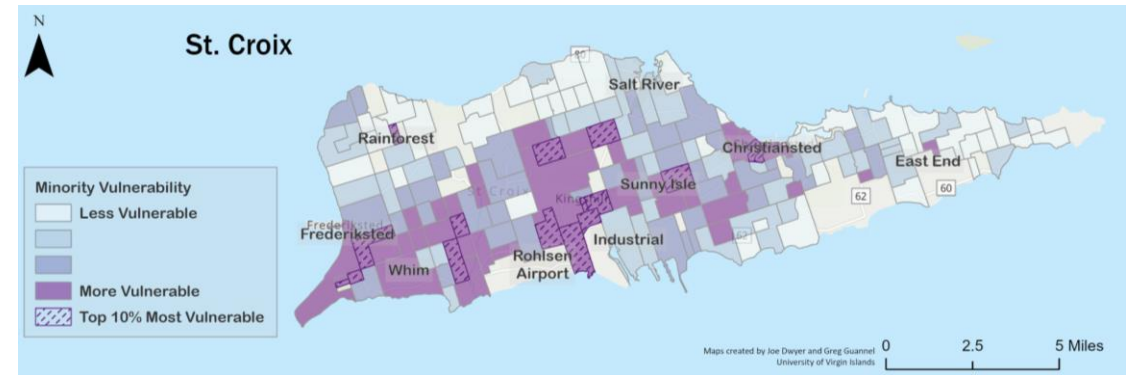
- There are two school districts with elementary, middle and high school buildings.
  - Natural disasters have struck a few school buildings in **2017** which **they have just received funding** to rebuild three elementary schools.





## GROUP 4: U.S. Virgin Islands – Infrastructure (Slide 3)

- The islands have no fossil fuel reserves and import petroleum to meet most energy needs.
- Two islands have their own hospital. St. John has a patient care facility.
- Few individuals have access to cold storage.
- Between the Virgin Island territories, there are five national parks.







## Suggested Outline for Hour or Session 3

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- |            |  |
|------------|--|
| 30 Minutes | Complete small group discussion and prepare to share solution        |
| 20 Minutes | Solution proposal sharing to total group (5-minutes per small group) |
| 10 Minutes | Total Group Reflection   |



## Time to Shift into Small Groups

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# You Have Completed the Simulation!

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Please let us know if you have any questions.

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