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Innovations of Caribbean entrepreneurs in climate resilient technologies

Caribbean Agrifood Business Series

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Green Haven Fresh Farm Aquaponics System

Green Haven Fresh Farm

- Green Haven Fresh Farm is an integrated farm located in Bois D'Inde Choiseul in Saint Lucia.
- The farm consists of :

➢32,000 gallons Vertical Aquaponics System (121,133 liters).

➢10,000 square feet (930 square meters) of greenhouse production (3 greenhouses) growing vegetables.

➢Two seedling nurseries to sow seeds.

➢Three acres (1.2 hectare) of open field production where we grow various crops including but not limit to tomatoes, cucurbits, sweet potatoes etc.

➢80,000 gallons (303,000 liters) underground rain-water harvesting system, harvesting rainwater from all the greenhouses and store for later use.

➢8,000 KW PV solar system harvesting solar energy to power the pumps for the aquaponics and farm.

Aquaponics

- Aquaponics is a sustainable method of farming that combines aquaculture (raising aquatic animals like fish) with hydroponics (growing plants in water). It creates a symbiotic environment where fish waste provides nutrients for plants, and the plants roots filter the water for the fish, creating a balanced ecosystem.
- In aquaponics systems, fish and plants are cultivated together in a closed-loop system, often in a controlled environment like a greenhouse. This method allows for efficient use of water and nutrients, making it a more environmentally friendly approach to agriculture.

Aquaponics

- Aquaponics uses 90% less water than conventional farming method as the water is recirculated and loss only to evaporation or osmosis.
- Aquaponics products are fully organic and have a longer shelf live and better taste.
- The products from the farm are sold to premium markets for a premium price.
- The greatest challenges with aquaponics are the set-up, that it is capital intense and takes a high operating and maintaining cost which is not applicable when growing in the soil.

Green Haven Aquaponics System

- Front view of the Aquaponics system.
- There are four fish tank to the bottom of the system and 10 vertical grow bed.
- The system is 32,000 gallons (121 133 liters). in size and can grow.
- The system can grow 3,000 lbs (1360 kg) of lettuce per cycle and 12,000 lbs (5443 kg) annually.
- The waste from the system after cleaning is applied to soil for conventional farming.

Green Haven Aquaponics

- Image on the left : using ladder to access the vertical grow beds.
- Image on the right : health crop of lettuce production.

Green Haven Aquaponics

- Image on the left : fish harvest to be served in a farm to table agro-tourism tour.
- Image on the right – harvesting fish.

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Thank you

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