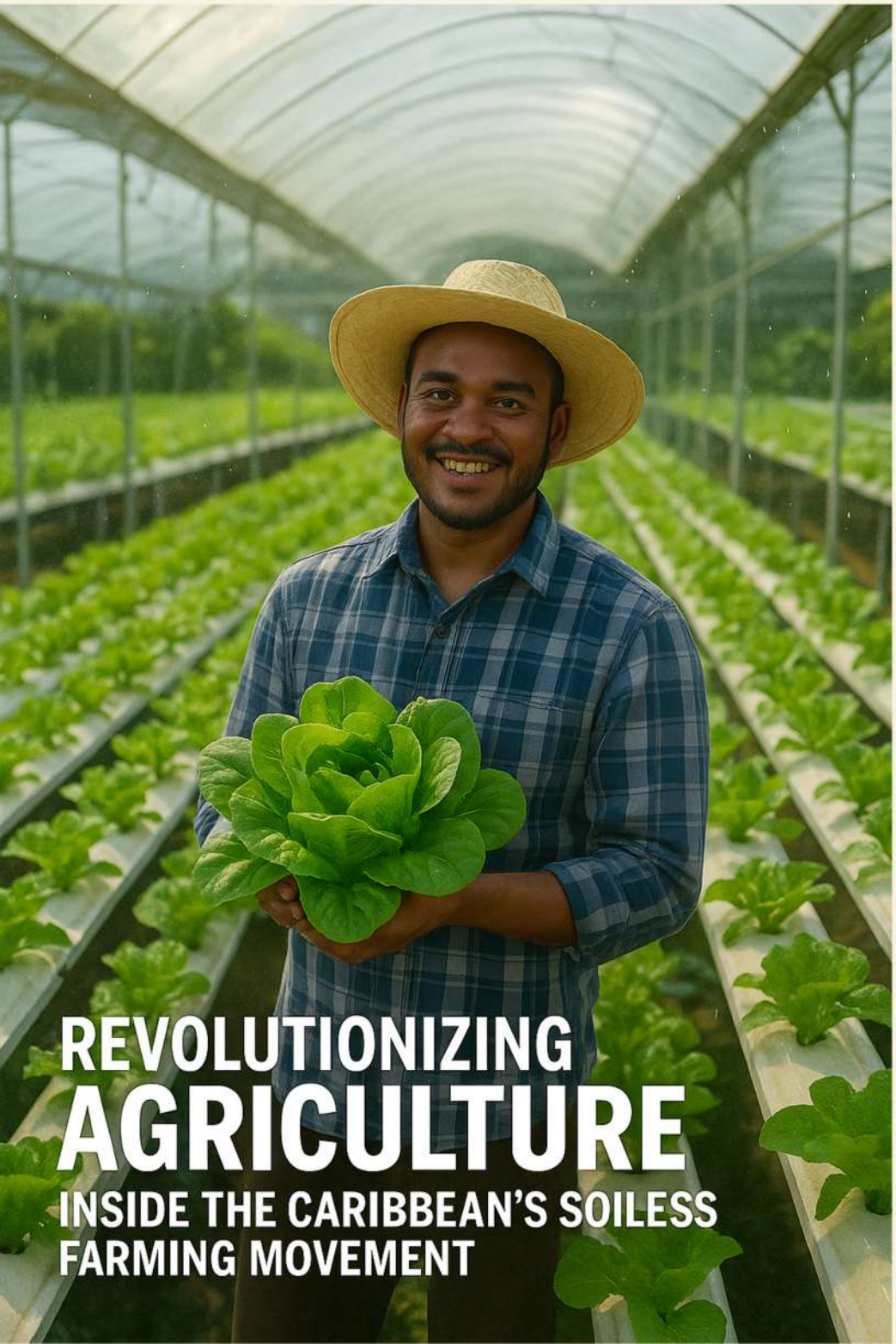
GREEN CARIBBEAN MAGAZINE

July 2025 | 002



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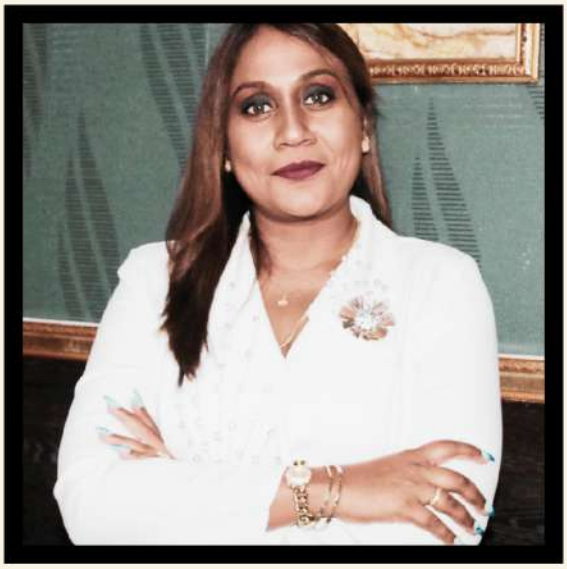
WELCOME TO OUR

REVOLUTIONIZING AGRICULTURE ISSUE



Dear Readers,

As the Caribbean grapples with the realities of climate change, limited arable land, and increasing food import bills, one thing is becoming abundantly clear: the future of farming must be bold, innovative, and resilient.

That's why this month, we're proud to spotlight the quiet revolution reshaping the way we grow food: hydroponics and aquaponics.
In this issue, we journey through the nutrient-rich streams of soilless farming, from greenhouses to aquaponic tilapia tanks.

We celebrate the visionaries, many of them youth, who are building greenhouses instead of giving up on agriculture, and transforming tanks, towers, and trays into vessels of food security.

We'll also explore the challenges, innovations, and business opportunities that come with growing without soil. From smart tech systems to community training programs, there's an exciting shift happening across our islands, and it's rooted in water, not earth.

We hope this issue inspires you to think differently about farming, food, and the future. Whether you're a farmer, policymaker, youth leader, or curious citizen, there's a place for you in this movement.

Stay rooted in purpose and keep growing.

Rayanna Boodram

Editor-in-Chief

"Soilless doesn't mean rootless—this movement is deeply grounded in sustainability, innovation, and Caribbean resilience."

10 Bold Flavours to Choose from

NO SOIL, NO PROBLEM!

In a region blessed with sun but challenged by limited arable land, unpredictable rainfall, and climate extremes, Caribbean farmers are asking a bold question: Can we grow food without soil?

The answer is a resounding yes, and it's called Hydroponics.

In Trinidad and Tobago and across the region, the rainy season usually begins in June and extends through November, often overlapping with the Atlantic hurricane season. This convergence of rainfall and storm activity demands not just vigilance but strategy. While rainfall replenishes water sources, rejuvenates soil, and supports lush vegetation growth, it also introduces threats: flooding, erosion, fungal diseases, and crop loss.

The 2025 forecast from the Caribbean Institute for Meteorology and Hydrology (CIMH) points to above-average rainfall in parts of the Southern Caribbean, along with increased flash flood risk due to climate change driven extremes. For small-scale farmers and urban gardeners alike, preparation will be key.

This rainy season, the message is clear: adaptation is protection. Farmers are encouraged to take proactive steps to mitigate the risks while capitalizing on the benefits.

“While we can't stop the rain, we can adapt our gardens and farms to work with it.”

Poor drainage is the #1 enemy during heavy rainfall. When roots sit in stagnant water, they suffocate, rot, or attract pests.
What you can do:

- Raise your beds: Use mounds, ridges, or container gardening to elevate plant roots above pooling water.
- Dig furrows or trenches between rows to direct water away.
- Add coarse sand or gravel beneath topsoil in pots or beds to speed up water movement.
- Install drainage pipes or French drains if flooding is chronic.

Mulching not only conserves moisture during dry spells but reduces erosion and splash damage during rain.
Tips:

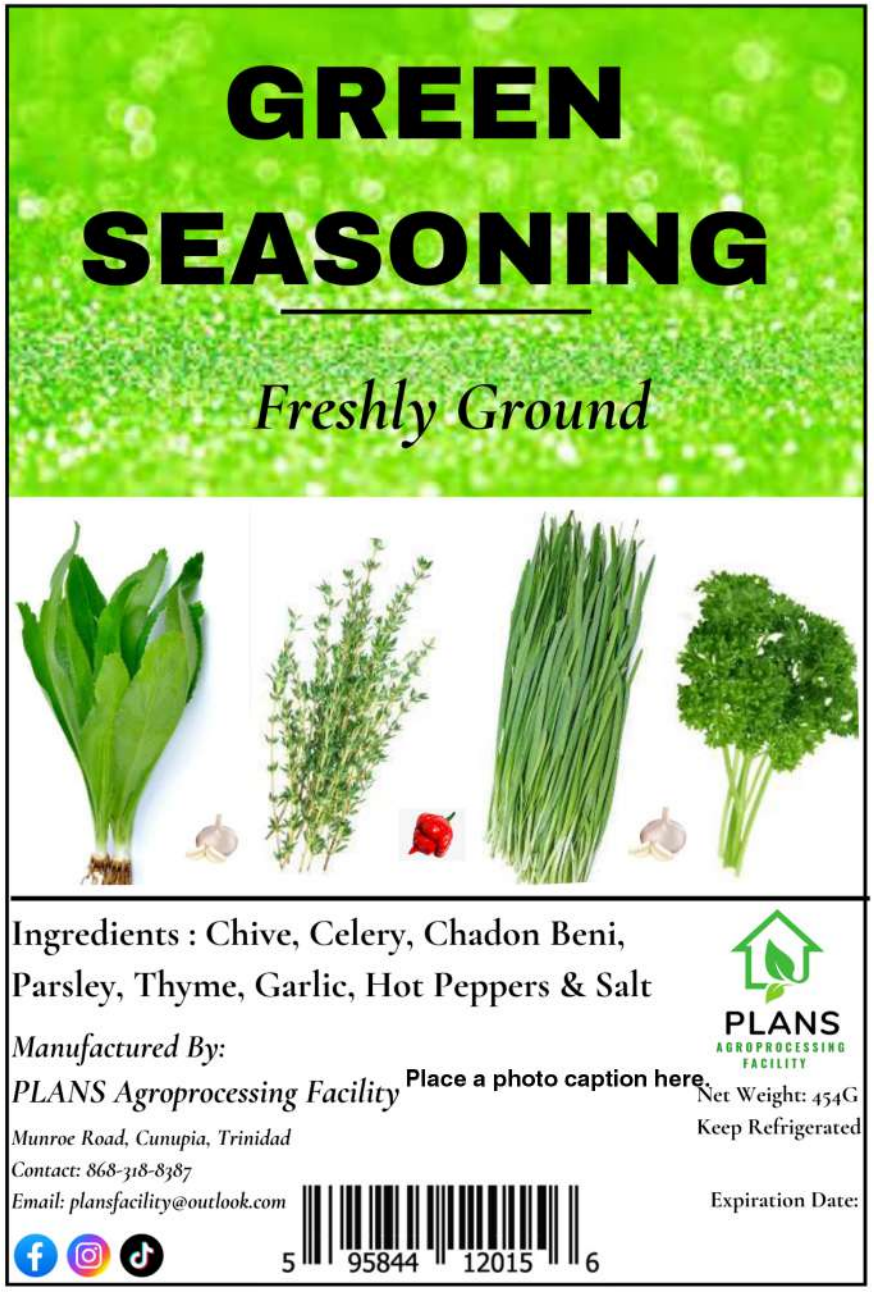
- Apply a 2–3 inch layer of organic mulch (coconut husk, straw, shredded leaves) around plants.
- Avoid piling mulch against plant stems, it can encourage rot.
- Mulch helps anchor the soil, shielding it from being washed away.

Support Your Plants Physically
Heavy rainfall can batter stems and foliage, especially in windy conditions.
Best practices:

- Stake tall plants
- Use trellises and cages for climbing vegetables.

NOTE WORTHY PRODUCTS

The PLANS Green Seasoning is the heart and soul of Trinbagonian cooking. It packs a bold, aromatic blend of fresh herbs that defines the island's rich culinary identity. Vivid green in color and bursting with flavor, this all-purpose seasoning is handmade using local ingredients including shado-beni (culantro), chive, garlic, thyme, and pimento peppers. It's used as a marinade, a cooking base, and a finishing touch in everything from meats and fish to stews, soups, and vegetable dishes. Pick up yours at a supermarket near you!



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Tropi-Blendz
Grapefruit Drink
Nutrition Facts
Calories
SIZE
500ML

Recipes of the Month

Hydroponic Pak Choi Stir-Fry with Spicy Pineapple Glaze

Fresh from hydroponic beds to your Caribbean kitchen---this stir-fry delivers bold flavor with zero soil!

Ingredients:

🥬 For the Stir-Fry:

- 4 cups hydroponic pak choi (washed and halved)
- 1 medium carrot, julienned
- 1 small onion, thinly sliced
- 1 sweet pepper, sliced
- 2 cloves garlic, minced
- 1 tbsp grated fresh ginger
- 2 tbsp coconut oil

🍍 For the Spicy Pineapple Glaze:

- ¾ cup fresh pineapple juice
- 2 tbsp honey
- 1 tbsp soy sauce
- ½ tsp chili flakes
- 1 tsp lime juice
- 1 tsp corn starch mixed with 2 tbsp water

Directions

1. Prepare the Glaze:
2. In a saucepan, combine pineapple juice, honey, soy sauce, chili flakes, and lime juice. Bring to a boil. Add cornstarch mixture and simmer until slightly thickened (about 3–4 minutes). Remove from heat.
3. Sauté Vegetables:
4. In a large pan or wok, heat coconut oil. Add onion, garlic, and ginger. Sauté for 1–2 minutes.
5. Add Pak Choi & Carrots:
6. Add the pak choi, carrots, and sweet pepper. Stir-fry for 3–4 minutes until the greens are tender-crisp.
7. Glaze and Toss:
8. Pour the spicy pineapple glaze over the vegetables. Toss well to coat and cook for another minute.
9. Serve Hot:
10. Enjoy with jasmine rice, quinoa, or grilled tofu/fish.

Grilled Tilapia with Hydroponic Lettuce Salad

🐟 For the Grilled Tilapia:

- 4 Tilapia fillets
- 2 tbsp olive oil
- 1 tsp garlic powder
- 1 tsp paprika
- 1 tbsp lime juice
- Salt and pepper to taste

🥗 For the Hydroponic Lettuce Salad:

- 4 cups fresh hydroponic lettuce (washed and chopped)
- 1 cucumber, sliced
- 1 avocado, cubed
- 1 small red onion, thinly sliced
- 1 tbsp olive oil
- 1 tbsp balsamic vinegar
- Salt and pepper to taste

Directions

1. **Grill the Tilapia:**
2. **Preheat the grill to medium-high heat.**
3. **In a small bowl, combine olive oil, garlic powder, paprika, lime juice, salt, and pepper. Rub the mixture over both sides of the Tilapia fillets.**
4. **Grill the fillets for about 4–5 minutes per side, or until the fish flakes easily with a fork.**
5. **Prepare the Salad:**
6. **In a large bowl, toss the hydroponic lettuce, cucumber, avocado, and red onion.**
7. **Drizzle with olive oil and balsamic vinegar.**
8. **Season with salt and pepper, then toss to combine.**
9. **Serve: Plate the grilled Tilapia alongside the fresh salad and serve immediately.**

JERK SHRIMP SKEWERS

INGREDIENTS:

- 3 tbsp jerk seasoning
- 1 tbsp lime juice
- 1 tbsp olive oil
- 1 pound large shrimp (shells removed)

DIRECTIONS:

1. In a large bowl, whisk jerk seasoning, lime juice, and olive oil.
2. Add shrimp, toss to coat.
3. Marinate for 15 minutes.
4. Thread shrimp onto skewers

Grill shrimp over medium-high heat, turning once, until cooked through (about 5–7 minutes).

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The Water-Based Revolution Transforming Our Food Systems

Around the world, traditional agriculture is being challenged, not only by climate change, but by the growing need to produce more food with fewer resources.

At the heart of a bold response is the rise of water-based agricultural systems, such as hydroponics and aquaponics, tech-driven farming methods that promise to revolutionize how we grow food.
Water-based agriculture replaces or minimizes the use of soil.

Instead of planting crops in the earth, plants are grown in nutrient-rich water solutions. These systems offer a tightly controlled growing environment that can function indoors, on rooftops, or in areas with poor soil quality.


Tropi-Blendz
SORREL DRINK
Nutrition Facts
Calories
SIZE 500ML
Best Before

REGIONAL AGRICULTURAL NEWS HIGHLIGHTS

CARICOM-Supported Webinars Gear Farmers for Hurricane Season

As the Caribbean braces for an increasingly unpredictable hurricane season, regional agricultural agencies have stepped up efforts to protect the region's food systems. From May 2 to June 6, 2025, CARICOM, in collaboration with CARDI, CAHFSA, CDEMA, IICA, FAO, and other partners, hosted a vital webinar series focused on disaster preparedness for the agricultural sector. The sessions brought together farmers, extension officers, policymakers, and agri-entrepreneurs to explore proactive, climate-smart strategies to reduce vulnerability and build resilience across the region's farms and fisheries.

With climate change intensifying the frequency and severity of hurricanes, the series provided timely and practical insights. It also emphasized the importance of risk mapping, early warning systems, and community-based preparedness.
Participants praised the webinars for being both informative and actionable, with many calling for annual continuity and greater farmer outreach. The series marks a critical step in ensuring that Caribbean agriculture remains resilient, responsive, and sustainable, even under extreme weather pressure.

CAHFSA ADVOCATES DIGITAL TOOLS FOR PHYTOSANITARY MEASURES AT CPM-19

At the 19th Session of the Commission on Phytosanitary Measures (CPM-19), CAHFSA and CARICOM called for:

Digital Tools to Enhance Regional Pest & Disease Monitoring

New International Standards for Phytosanitary Measures (ISPMs)

Launch of Plant Health Campus –an e-learning portal on preventing crop pests and diseases

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WHAT YOU NEED TO KNOW ABOUT PEPPER MASH

Pepper mash is a fermented blend of crushed hot peppers (like scotch bonnet or habanero) mixed with salt, and sometimes a bit of vinegar or water.

It's the raw base used to make hot sauces, pepper sauces, marinades, and spicy seasonings, especially popular in the Caribbean, including Trinidad and Tobago.

Key Features of Pepper Mash:

- Ingredients: Primarily hot peppers and salt.
- Fermentation: Often left to ferment for days to months, which deepens flavor and reduces sharpness.
- Texture: Thick, chunky or puréed.
- Uses: Base for hot sauce, spice blends, marinades, and seasoning pastes.

AGRI-KIDS CHRONICLES WELCOMES

FINN THE FISHER BOY

MEET FINN THE FISHER BOY

Finn is a curious, kind-hearted Caribbean boy from Buccoo, Tobago

Best Friends: Mango the fish (an orange tilapia) and Sprout the Lettuce

HELP FINN FINDS HIS PET TILAPIA, MANGO!

T&T EDUCATION DRIVING AGRICULTURAL SUSTAINABILITY

By- Ancel Bhagwandeen

What is sustainability?

It is a commonly occurring word in modern vernacular. To be sustainable a resource must be renewable in some fashion.
The United Nations has defined 17 categories of sustainable development goals; the UN 17 sustainable development goals (SDGs).

B*ut what is our most valuable natural resource as a civilization?*

·Is it a mineral like coal, oil, iron, or gold?

·Is it our intellect to devise new solutions, develop technologies, and grow food?

·Is it our ability to self-govern using established rules and norms to build societies?

I propose that our most valuable renewable resource is our children, who will form the future of our civilization, and the above items are merely corollaries to this one true axiom.

Therefore, the skills, abilities, and knowledge we pass on to this intelligent renewable resource represent the foundation of all sustainability. In fact, this resource is unique in that every new generation surpasses the previous generation with acquired knowledge.

Therefore, it is the Government of the Republic of Trinidad and Tobago's intention to foster and create sustainable development practices to address global challenges such as climate change, resource depletion, and economic inequality. In this regard, we see Secondary Schools playing an important role in shaping the future generations' understanding and practices regarding technology and environmental stewardship.

A SolarPoniX tower garden in use at the San-Fernano East Secondary School.

A row of SolarPoniX tower gardens at Naparima College which were sponsored by the "EPIC" DIGICEL Foundation programme in 2024.

In a Word: Education

Thus, we present a new means to link education with renewable energy, hands-on training, entrepreneurship, and agricultural food security in a personal portable solution being deployed in many schools today. It is called the SolarPoniX vertical tower garden!

Citizens of T&T developed this solution; it is not imported from elsewhere. It is an example of how our education system has enabled indigenous ingenuity & invention, empowered local manufacturing, and delivered this hurricane-resilient, solar-powered, food-security solution, which also supports education in schools. This new approach delivers unparalleled sustainability, circular economy, and education outcomes!

Global Impact

This SolarPoniX 'vertical' agri-technology is now recognized by the U.S.A., the U.K., the UNDP (TT), and the World Intellectual Property Organization. It is manufactured at the MIC Institute of Technology (MIC-IT) by trained technicians at its Pointe-à-Pierre Renewable Energy Centre. A compact tower supports 48+ crops at once, is fully automated, and irrigated.

As an agency under the Ministry of Tertiary Education and Skills Training (MTEST), MIC-IT proudly promotes the award-winning SolarPoniX, which has become the perfect blueprint for renewable energy-based, agricultural projects in schools. The SolarPoniX, which is proudly made in T&T, was recognised by the United Nations Development Programme in 2021, as one of the TOP 5 Green Innovation products and also made headlines in 2024 when its Giant African Snail De-Fence feature won the World Intellectual Property Organization's National Award for Creativity.

MIC-IT delivers the 1st SolarPoniX tower to Union Claxton Bay Secondary School in April 2025.

As part of the Solar Powered Sustainability Project, which started in 2024, twenty-six Secondary Schools are set to benefit from deployments of these SolarPoniX tower gardens, along with training packages and onsite technical support, thanks to the Ministry of Education and corporate sponsors. Local community green produce markets are being set up to enhance food security based entrepreneurship at these schools and to empower our youth to become green entrepreneurs.

The systems are also being used toward School-Based Assessment outcomes as part of our education system. The Point Fortin East Secondary School is a shining example of this.

What makes SolarPoniX unique?

·It is based on a child-safe 12Volts DC with integrated climate adaptability via environmental sensor technology.
·It offers the only chemical-free Giant African Snail deterrence
·It features indoor/outdoor portable use, suitable for homes, schools & offices.
·The latest systems can grow root crops and heavy vegetables for a more complete dietary solution without needing arable land!
·It eliminates 'food miles' and refrigeration storage requirements. You eat fresh and toxin-free as we bring the farm to you. No food losses occur due to transportation overheads!
·Weak sunlight = no problem, as the tower garden offers 4 days of battery backup using upcycled laptop batteries.

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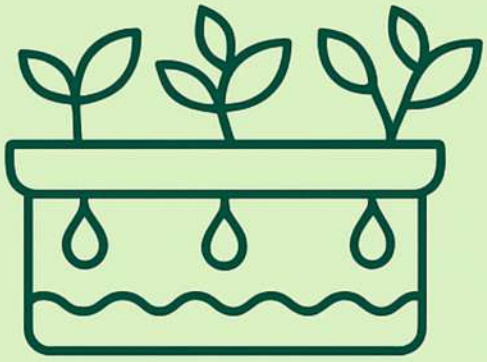
Exciting Next Steps:

In the coming months, an A.I. backend for Trinidad agriculture (letzfarm.com) is to be digitally linked, and a mobile phone app. is in the works for further improvements. These will provide additional crop yields with little impact on your time or space.
Exports have begun, and we will be impacting thousands of T&T students across the country as we scale. Systems are supported by https://www.mic.co.tt/greentech/
Special thanks to both the Ministry of Finance and the Ministry of Education for supporting this indigenous technology deployment in our schools. Together, we are leveraging the power of education to reinforce youth development and food sustainability. With the SolarPoniX, we predict a positive global impact on the future of Climate Smart Agriculture.

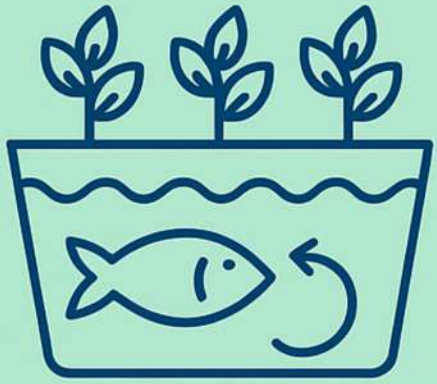
Hydro vs. Aqua: WHICH ONE IS RIGHT FOR YOU?

HYDROPONICS



- Plants in water + nutrient solution
- Can grow more varied crops
- Requires fertilizer or nutrients
- Well-understood, easy access

AQUAPONICS



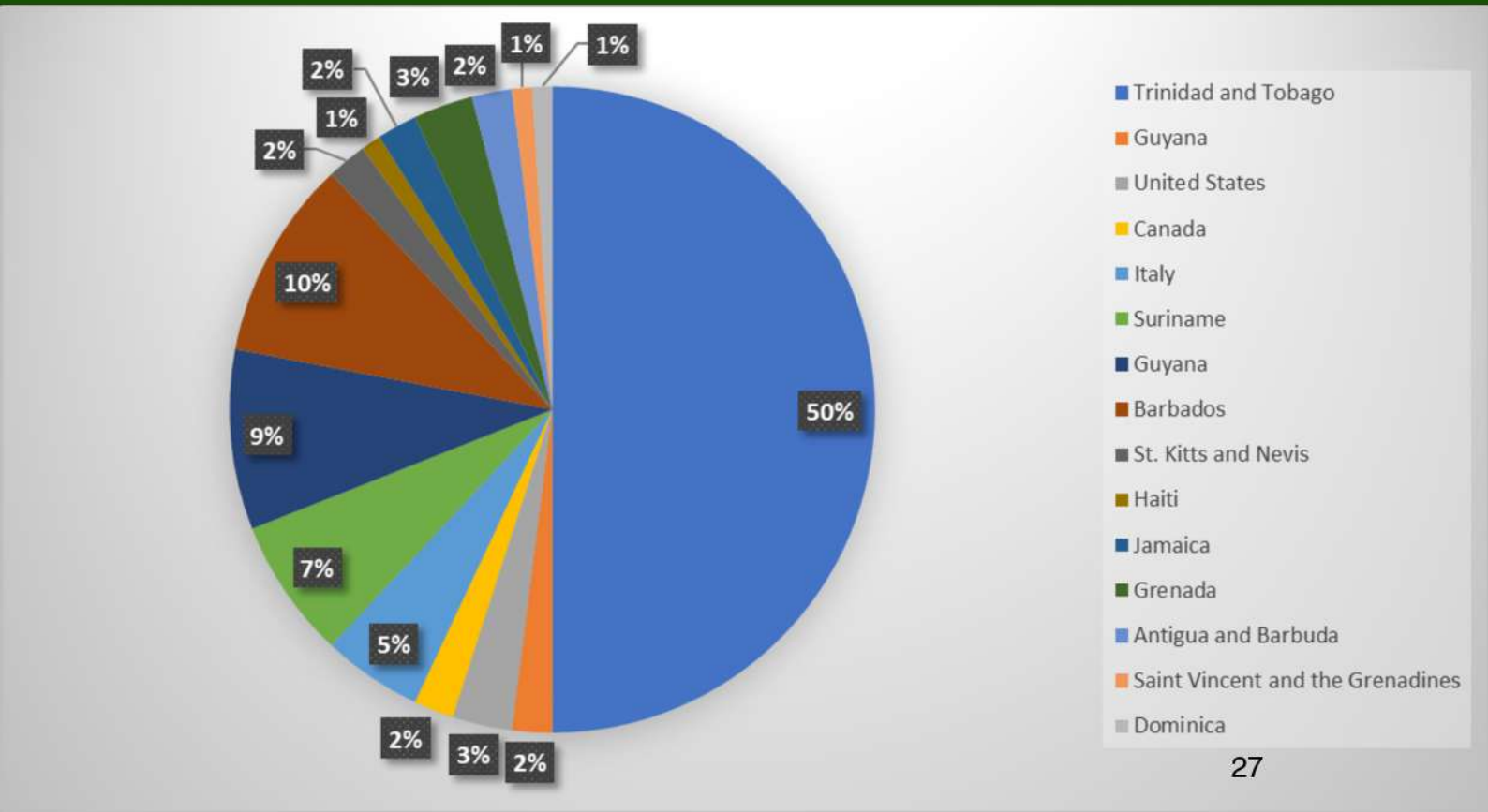
- Plants + fish co-cycle water
- Sustainable + lower waste
- Needs more attention, know-how
- Limited crop options

🌐 Global Reach Report – June 2025

In the month of June,
The Green Caribbean Magazine content reached audiences in 15 countries across the globe!

Our strongest engagement was right here at home in Trinidad and Tobago (50%), followed by notable interest from Barbados, Jamaica, Suriname, and even as far as Italy and Canada.

This growing geolocation footprint is a testament to the Caribbean's rising influence in sustainable agriculture and innovation.

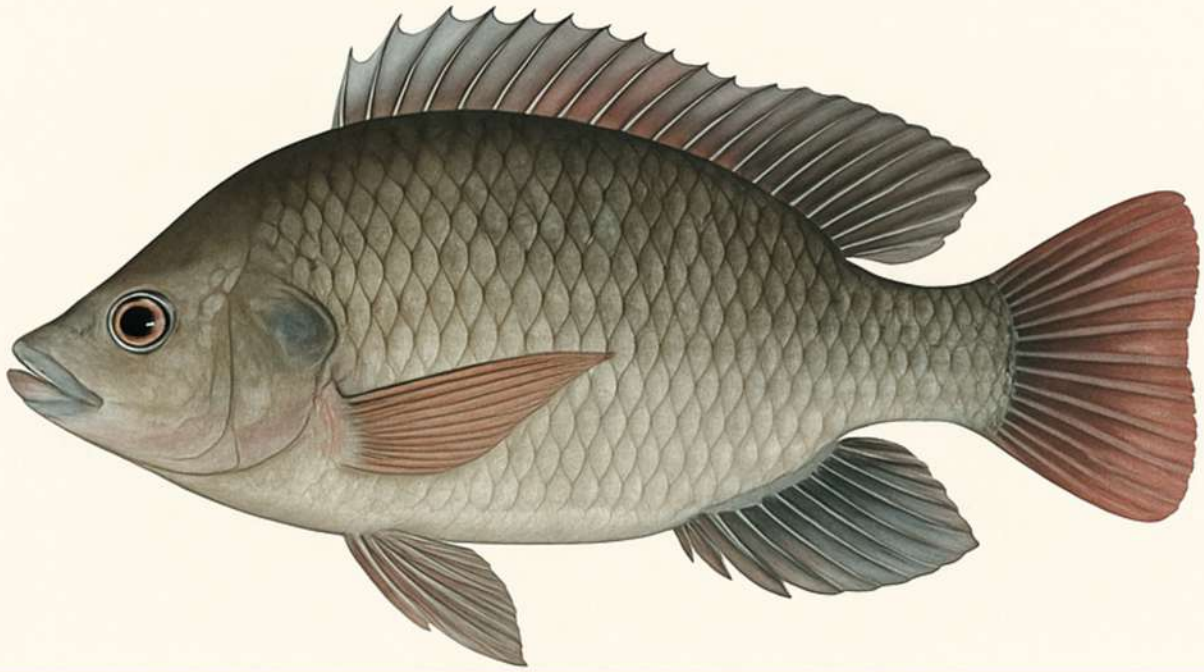


Explore the fruits from across the Caribbean in next issue of the Green Caribbean Magazine

#localfruits #Caribbeanfruits #Green Economy #GreenCaribbean

LET'S TALK FISH

TILAPIA



WHY IT IS WELL-SUITED FOR AQUAPONICS

- Tolerates a wide range of water conditions
- Withstands high stocking densities
- Grows rapidly on inexpensive feed
- Hardy and disease-resistant
- Mild taste and appealing to consumers

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CLIMATE-SMART AGRICULTURE

Cost Analysis of a Climate-Smart Agricultural Operation

As climate change continues to disrupt traditional farming practices, many producers are transitioning to climate-smart agriculture (CSA), a strategic approach that increases productivity, enhances resilience, and reduces greenhouse gas emissions. But adopting climate-smart practices comes with its own economic implications. Understanding the cost-benefit dynamics of CSA is crucial for informed decision-making and long-term viability.

What Is a Climate-Smart Operation?

A climate-smart agricultural operation integrates technologies and practices designed to adapt to changing weather patterns, conserve resources, and protect ecosystems. These may include:

1. Drip or precision irrigation systems
2. Rainwater harvesting and storage
3. Shade houses or greenhouses
4. Drought-resistant seeds and crop varieties
5. Composting and organic soil amendments
6. Renewable energy systems (e.g., solar pumps, biodigesters)
7. Integrated pest management (IPM)

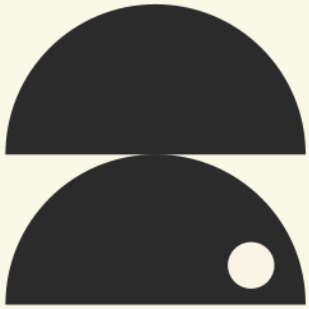
Cost Breakdown of CSA Components

Item Estimated Cost for a small-to-medium CSA setup (e.g., greenhouse hydroponic farm or aquaponic system): (USD)

- Drip irrigation system $500 – $1,200
- Solar-powered water pump $800 – $1,500
- Greenhouse or shade house (500 sq ft) $3,000 – $6,000
- Hydroponic/Aquaponic system $1,500 – $4,000
- Climate-resilient seeds/seedlings $100 – $300 per cycle
- Organic compost & soil amendments $100 – $250 per season
- IPM materials (nets, traps, biocontrol) $150 – $500 annually
- Training and technical support $200 – $600
- Total initial investment: $6,350 – $14,350
- Annual operating cost (excluding labour): $1,500 – $3,000

Economic Benefits

Water savings of up to 80% through drip irrigation
Energy cost reductions with solar integration
Higher yields due to optimal growing conditions
Reduced crop loss from pests, drought, and flooding
Market premiums for organic and sustainably-grown produce
Year-round production, improving cash flow consistency



INTERNATIONAL AGRICULTURAL NEWS HIGHLIGHTS

🌍 Climate Change Threatens Yields of Key Staple Crops

A new study published in Nature warns that even with adaptation, rising global temperatures could reduce yields of maize, soy, wheat, rice, cassava, and sorghum, systematically cutting up to 120 calories per person per day for every 1 °C increase. Adaptation efforts may recover approximately 25% of these losses by 2050, yet remain insufficient to fully avert negative impacts.

🔗 Reference:

The Guardian. (2025, June 18). Climate crisis could hit yields of key crops even if farmers adapt, study finds. https://www.theguardian.com/environment/2025/jun/18/crop-yields-climate-crisis-adaptation

📉 Global Food Prices Ease After Two-Year High in May

The FAO Food Price Index fell 0.8% in May 2025 from April, driven largely by declines in grains, vegetable oils, and sugar. Improved harvests in Argentina, Brazil, and the U.S. contributed to lower maize and wheat prices. Cereal stocks are expected to recover, signaling relief for consumers and reducing food inflation risks.

🔗 Reference:

Reuters. (2025, June 6). World food prices dip in May as cereal, sugar and vegoils drop. https://www.reuters.com/business/world-food-prices-dip-may-cereal-sugar-vegoils-drop-2025-06-06

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