Addressing the Water, Energy Food, Nexus in the Caribbean

CARICOM’s MTF reports 57% of production target met for key agricultural commodities

Pulses a superfood for a sustainable future

Evaluating crops’ performance treated with Sargassum based products
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In February, CARDI Representative in Antigua and Barbuda, Mr. Paul Lucas facilitated a series of training sessions on Sustainable Agriculture and Climate Change at the CARDI Field Station in Bettys Hope. These sessions were jointly organized by CARDI and the Food and Agriculture Organization of the United Nations (FAO), under the project “Addressing the Water-Energy-Food Nexus in Agriculture” ("WEF Nexus project"), which is part of the Mexico-CARICOM-FAO Resilient Caribbean Initiative.

Over 30 farmers received first-hand information and practical training on a variety of systems and technologies being used at CARDI, to combat the impacts of climate change on agricultural production. Antigua is one of the driest islands in the Caribbean, and Mr. Lucas noted that CARDI has been using and promoting these systems and technologies at the field station with much success.

The impacts of climate change are complex on agricultural systems and the Institute promotes an integrated approach to building resilience and improving the sustainability of agriculture systems.

During a field tour participants saw first-hand how on-farm agro biodiversity conservation helps farmers reduce risks, enhance sustainability and increases profit.

Water availability is a major concern for food producers in Antigua. At the training, participants were introduced to various water conservation techniques such as drip irrigation, mulching and cover crops. Several other low technology solutions, discussed with farmers included shade houses, wick systems, rain water harvesting and subsurface irrigation.

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The sessions were engaging and feedback positive from participants. Participant Nikisha Walter stated that “the workshop was amazing and timely given the current climate challenges. The potential to solve our food security is there. We just need to allocate the proper time and resources into the agriculture sector.”

At the end of the training, CARDI provided planting material to participants for various crops. During a field tour participants saw first-hand how on-farm agro biodiversity conservation helps farmers reduce risks, enhance sustainability and increases profit.

Tolerant varieties to climate stresses are known to increase the resilience of small farmers. In Antigua, CARDI maintains drought tolerant cassava and sweet potato varieties. The Institute also produces seeds for a variety of crops including hot pepper, pumpkin and squash. Participants were given a tour of CARDI’s seed bank and demonstration of the rapid propagation technique for cassava.

CARICOM’s MTF reports 57% of production target met for key agricultural commodities

The Ministerial Task Force (MTF) on Food Production and Food Security, has announced that Member States were collectively able to achieve 57% of the target set in keeping with realizing Vision 25 by 2025. This was disclosed at the 9th meeting of the MTF in January, which was chaired by Guyana’s Minister of Agriculture, Hon. Zulfikar Mustapha.

It was reported that products such as cocoa, dairy, meat, root crops, fruits, and poultry have already reached 96.13%, 84.36%, 72.28%, 70.91%, 70.77%, and 70.19% respectively, for the targeted production volume set for the year 2025. This information was gleaned from the countries production data for 2022.

“If we are allowed to increase intra-regional trade, we will be well on the way to reducing the regional food import bill which is the ultimate goal of CARICOM in keeping with its food security agenda. In just one year, collaborative efforts among member states have yielded much success,” Minister Mustapha noted.

Several priority areas have been identified for 2023, including agriculture insurance and financing, trade and E-agriculture, resource mobilization, and trade support. These, he explained, will help to advance the efforts of the MTF and CARICOM, as it works towards achieving “Vision 25 by 2025”.

Commodities

The MTF, working through the Member States, has developed a comprehensive import-replacement programme with accompanying targets for selected commodities, geared towards achieving the 25% by 2025 objective. The commodities which are being targeted for increased production and to be sourced regionally are:

- Poultry
- Corn and Soy
- Niche Vegetables: Broccoli, Cauliflower
- Roots and Tubers: Cassava, Sweet Potato, Table Potato and Dashiene
- Herbs and Spices: Ginger, Turmeric, Thyme, Chive and Marigoram
- Livestock: Beef, Sheep, Fish and Goat

Source: 25-by-2025-Reduction-In-the-Regional-Food-Bill (www.caricom.org)
$65 Million Set Aside For Soil Fertility Mapping Project in Jamaica

The Government has allocated $65 million for the Soil Fertility Mapping Project, which aims to increase the productivity and quality of agricultural produce. Details are outlined in the 2022/2023 Estimates of Expenditure, now before the House of Representatives.

The project, which is being implemented by the Ministry of Agriculture and Fisheries, seeks to optimise farmers' profits and enhance farming efficiency while maintaining good environmental stewardship, through an integrated soil management system.

It will establish a database with updated information regarding the availability of fertile soil throughout the island.

Department of Agriculture to deploy 500 monkey traps throughout St Kitts

The Department of Agriculture will deploy 500 monkey traps throughout St. Kitts to reduce the population of monkeys that is causing destruction to farm crops throughout the country.

Minister of Agriculture, Marine Resources and Corporatives, the Honourable Samal Duggins in a recent interview said, “The monkeys have been a significant threat to our food security here in St. Kitts and Nevis and they are a nuisance to many of our farmers. Our programme here at the Department of Agriculture is to help to control that and improve our food security agenda.”

Dasheen declared the ‘Blue Gold’ Crop of St Vincent and the Grenadines

Fast forward to today, the island has now declared a magical superfood – dasheen, as its future “Blue Gold.” Blue because most varieties of dasheen when cooked has a slightly blue colour.

St. Vincent and the Grenadines was well known in the United Kingdom, for its “Green Gold” banana industry for over half a century, as a part of the Windward Islands banana platform. Grenada, St. Lucia, Dominica and St. Vincent and the Grenadines exported bananas weekly through WIBDECO/ WINFRESH and later the Fair Trade Organization.

Over the last two decades, St. Vincent and the Grenadines has advanced a diversification approach to agriculture, in the aftermath of the demise of the banana export industry caused by the removal of trade preferences.

Insects, a future source of valuable animal feed in the Caribbean

The rising costs and limited access to high quality animal feeds are constraining factors for the development of the poultry and livestock sectors in the Caribbean and a threat to food security in the region. There is also a growing problem of managing organic waste from our farms, markets, restaurants, hotels and food manufacturers that create health, environment and climate risks.

In examining solutions to these challenges, the Food and Agriculture Organization of the United Nations (FAO), in collaboration with the Fera Science Limited, recently completed a survey of organic waste across Barbados, Jamaica, Grenada, and Trinidad and Tobago. The study assessed the potential of insect farming as a solution to the twin problem of increasing volumes of organic wastes, and the lack of stable access to affordable animal feed.
Pulses a superfood for a sustainable future

World Pulses Day revolves around the global awareness of the superfood known as pulses. Pulses are edible seeds of legumes that are harvested dry. They are known to be one of the first domesticated crops, having been farmed since the 7th century in the Middle East in an area known as the Cradle of Civilization. Beginning in 2013, The General Assembly of the United Nations (UN), as part of their resolution on sustainable development of food production, recognised the significance of pulses in alleviating hunger, poverty and food and nutrition insecurity.

“They improve the soils fertility and are a low carbon footprint food – making them a key ally in the climate change fight.”

Pulses are widely regarded for their intrinsic value towards human and animal health. They are gluten and cholesterol free, rich in proteins and nutrients, a good source of dietary fibre and high in iron and zinc. They retain their nutritional value while in storage, making them an ideal food source for humans and a suitable crop for achieving food and nutrition security. Pulses are environmentally friendly and an important part of any sustainable agricultural production system. They improve the soils fertility and are a low carbon footprint food – making them a key ally in the climate change fight.

Belize is the center of the Institute’s cereal and grain legumes programme. CARDI’s ongoing programme of work in pulses is focused on germplasm management and conservation of varieties, commercial production of grains and seeds, identification of climate resilient varieties and evaluation of iron rich varieties for introduction to farmers.

The research and development foundation laid by the Institute for pulses, has placed Belize on a path to becoming self-sufficient in production and a major exporter to CARICOM.

In accordance with the International Seed Testing Association (ISTA), the CARDI Seed lab conducts the required purity and moisture tests for pulses exported from Belize. The CARDI stamp of approval assures exporters of the quality of the product.

We join the global community in celebrating the power of this superfood and the important role they play in building a sustainable future.

Did You Know?

Soybeans, specifically soybean oil is a key component in some crayons. Soy crayons are easier to use as they glide smoother and don’t flake. The colours created using the soybean oils are brighter, less toxic to children and are entirely biodegradable.

Evaluating the performance of vegetable crops treated with Sargassum based products

Since 2011, the bloom of Sargassum seaweed has been casting a brown blanket of complications over the Caribbean Sea. How it clusters our shorelines, remain an active area of research. However, scientists have attributed warming temperatures due to climate change and nitrogen run off from industrial scale agriculture, are fueling these blooms. A report published by Florida International University also identifies Saharan dust clouds as a contributing factor to the exploding blooms. The dust contains iron, nitrogen and phosphorus that fertilizes these plankton and seaweed blooms.

Researchers, entrepreneurs and startups note that this floating seaweed mat that eventually piles along the sea shore has a silver lining. The Caribbean Regional Fisheries Mechanism (CRFM) and Plant & Food Research (PFR), a New Zealand government-owned Crown Research Institute, are advancing a regional project aimed at turning Sargassum into innovative products that will create jobs and income as well as contribute to building the region’s climate resilience and mitigating the negative impacts of Sargassum in the region. During 2023, the CRFM and Plant & Food Research –in partnership with other public and private sector institutions in the Caribbean region—will focus on lab-scale work and field trials to develop suitable prototype products from the Sargassum seaweed for commercial use. In Barbados, CARDI will be conducting field and greenhouse trials to evaluate the performance of several vegetable crops treated with Sargassum products. A Sargassum compost and a Sargassum based liquid biostimulant will be evaluated under field and greenhouse conditions respectively.

This year is predicted to be a major one for Sargassum blooms. The Outlook of the 2023 Sargassum blooms in the Caribbean Sea and Gulf of Mexico, released by the University of South Florida Optical Oceanography Lab on 1 February 2023, revealed that, “The overall Sargassum quantity in the Atlantic Ocean doubled from December 2022 to January 2023 (8.7 million tons), again setting a new record (previous January record was 6.5 million tons in 2018).” The Bulletin also notes that large quantities are already in the Caribbean Sea (to the east) and will continue to accumulate and migrate westward, creating beaching hazards along the way. Blooms of this brown nuisance will continue to negatively impact the fishery and tourism sectors in the Caribbean, leading to lower earnings for fisher folks, vendors and hotels.
Trinidad & Tobago

Students from the Black Rock Government Primary School harvesting produce from the climate resilient school garden. CARDI in collaboration with the FAO under the ‘Mexico-CARICOM-FAO Initiative Cooperation for Adaptation and Resilience to Climate Change in the Caribbean - Subproject Resilient School Feeding Programs’ have established 6 school gardens across Trinidad and Tobago.

Barbados

The CARDI Barbados team showcased the Institute’s work at Agrofest. Visitors learnt more about the ongoing work in the hot pepper, coconut, roots and tubers and small ruminants sectors in Barbados.

Cayman Islands

CARDI Cayman Islands participated in the 54th Agricultural Show held on 22 February. The Institute highlighted the ongoing initiatives to develop the country’s Roots and Tubers sector.

Guyana

The imported seednuts for the Brazilian Green Dwarf are being evaluated in Guyana. There has been a 93% germination success rate for the seednuts imported from Brazil!