Assessing the impact of flooding in Guyana

Evaluating the yield potential of ‘Black Stick’ cassava cultivar

Supporting the industrialisation of cascarilla in The Bahamas

Using local ingredients to produce livestock feed
Since May up to early June, extreme rainfall associated with the Inter-tropical Convergence Zone (ITCZ) and low-level troughs has been affecting Northern and Southern Guyana, resulting in unprecedented flooding. On June 10, 2021, the President of Guyana, His Excellency Dr Irfaan Ali, declared a disaster as a result of flooding. Regions 2 (Pomeroon-Supernaam), 5 (Mahaica-Berbice), 6 (East Berbice-Corentyne), 7 (Guyuni-Mazaruni) and 10 (Upper Demerara-Upper Berbice), were reported to be most impacted by this natural disaster. At the time of the President’s declaration, more than 28,000 households were affected and farmlands inundated by flooding.

The Caribbean Disaster Emergency Management Agency (CDEMA), through the Regional Response Mechanism (RRM), came to the aid of Guyana by mobilizing regional and international agencies to participate in the Detailed Damage Sectoral Assessment (DDSA) and recovery efforts. Five DDSA teams were officially deployed to Guyana to report on the flooding impacts on sectors in the areas of health, mining, agriculture, infrastructure, housing, water, sanitation, shelters and the social sector. The deployment of the DDSA teams was funded by USAID Eastern and Southern Caribbean through the Caribbean Climate Resilience Initiative.

CARDI was identified by CDEMA to be the lead coordinator for the assessment of the agriculture sector. The CARDI team was headed by Greg Linton (CARDI Representative, St Vincent and the Grenadines) and included Jhaman Kundun (CARDI Representative, Guyana) and Paul Lucas (CARDI Representative, Antigua and Barbuda). The team was supported by representatives from the Inter-American Institute for Cooperation on Agriculture (IICA), the Food and Agricultural Organization of the United Nations (FAO) and the Ministry of Agriculture and its agencies.

Significant production of coconuts, rice, short term vegetables, root crops and cattle rearing takes place in the impacted Regions. Preliminary findings reveal widespread destruction of crops, animal housing and loss of livestock. The impact will have severe economic ramifications for many farm families who are dependent on agriculture as an income earner and a source of livelihood.

At the time of this report, the assessments were ongoing. Detailed findings will be published in a forthcoming issue of the Ministers’ Brief. CARDI will continue to support the rebuilding of the agriculture sector in the impacted Regions.

Evaluating the yield potential of the ‘Black Stick’ cassava cultivar

Cassava is a popular root crop in the Cayman Islands. It is used in both its fresh and processed forms in a variety of dishes and snacks. ‘Black Stick’ is a sweet cultivar and one of 22 varieties housed at the CARDI germplasm bank on the island.

A study done by the institute, in collaboration with the Department of Agriculture, evaluated the yield potential of the ‘Black Stick’ cultivar at 6, 7, 8 and 9 months after planting. The experiment was conducted at the CARDI Field Station in Bodden Town.

A completely randomized block design treatment was used in the evaluation. There were 6 replicates with 24 plants per plot. The spacing between plants was 3 feet, between rows 3 feet and a 5 feet spacing between plots. Good agricultural practices such as irrigation, weed management and fertilisation were applied across all treatment plots. Data were collected from each plot at 6, 7, 8 and 9 months after planting and analyzed using analysis of variance in Genstat.

Preliminary results showed that there were no significant differences in plant height, total fresh root weight, marketable fresh root weight and the total number of marketable roots, across the various treatments. The average total number of marketable roots across the months assessed ranged from 6.88 to 8.71. The marketable tuber fresh weight for plants at 6, 7, 8 and 9 months old were not significantly different (p=0.314). Average marketable tuber fresh weight across the months assessed ranged from 4.07 to 6.08 lbs.

The results show that the ‘Black Stick’ cultivar has good potential for early harvest at 6 months and can also give suitable yields up to 9 months after planting. This means that farmers can start harvesting as early as 6 months after planting and will have a window of 4 months to harvest the roots in batches as needed for the fresh market.
BAHamas’ cascarilla (Croton eluteria) industry is estimated to be worth 1 billion United States Dollars (USD). Annually, the country exports between 4 to 10 tonnes of the bark to Europe, the United States and the United Kingdom, where the essential oils are extracted for use in a variety of food, beverage, nutraceutical and pharmaceutical industries.

The Pine Islands Pilot Project—“Multi-purpose conservation by enabling coastal communities: Native Palm and Cascarilla cultivation,” funded by the Government of the Bahamas and Global Environment Facility (GEF), aimed to sustainably improve the production and processing of cascarilla. The project was executed by the Bahamas Agricultural and Industrial Corporation (BAIC) in collaboration with several agencies including CARDI.

Minister of Agriculture, the Honourable Michael Pintard noted that “historically, Bahamas exported the raw bark resulting in negligible benefits to the people in the south.” This project, he continued, “aimed to change that by empowering stakeholders to produce a value-added product so they can demand a premium for our natural resource.”

On June 9, the video, “Sustainable harvesting of cascarilla,” was launched as an output of the project. It highlights the good agricultural practices to sustainably propagate, grow and harvest cascarilla. The information presented draws on the research work conducted under the project as well as traditional knowledge and practices. The key takeaway message: ensuring sustainability across all operations of the value chain.

To support the expansion of the industry the Government announced that 105 acres of land will be granted to Acklins Islanders Cooperative Society to expand cascarilla production and processing.

Evaluating a locally produced feed source for livestock

The importation of raw materials (corn and soybean meal) for animal feed production into CARICOM, accounts for a significant proportion of the Region’s burgeoning food import bill. Since 2019, CARDI, the Food and Agriculture Organisation of the United Nations (FAO) and the Ministry of Agriculture and Food Security, Barbados have been working on a project to produce a cheaper alternative feed source for small ruminants, using locally available ingredients.

Ensilied fish offal is the main ingredient in this feed mix. According to Project Manager, Ansari Hosein “fresh fish offal is cheap, readily available and has a high crude protein percentage, which is usually a pricey ingredient in feeds.”

The process to produce the silage and the feed mix is a simple one. The collected offal can be ground up and mixed with 20% molasses and a 5% mixture of yogurt and milk. Molasses is a good source of energy and gives the final product a pleasant smell and improves its palatability. In a second option, acetic acid can be added to the offal. Acetic acid causes an immediate reduction in the pH. A pH of 3.5 to 4.0 is desirable as it inhibits the growth of bacteria and prevents spoilage.

The mix is then dried. For the project, a solar-powered dryer is being used which is more energy-efficient and cost-effective. Feeding trials are set to begin in July, to determine the effectiveness and efficiency of the mix.

A locally produced feed mix will assist in mitigating the impacts of continued shortages of feed ingredients and hikes in feed prices to producers, retailers and consumers.
Grenada

CARDI Country Representative in Grenada, Reginald Andall attended the National Farmers Symposium alongside other industry stakeholders on June 23rd 2021.

Guyana

CARDI Guyana and the National Agricultural Research and Extension Institute (NAREI) train Rush Brook farmers on Black Sigatoka Disease Management and Coconut Pest and Disease Management.

Antigua And Barbuda

CARDI provides technical assistance to the project “Strengthening Coastal and Marine Climate Resilience through Upland and Coastal Ecosystem-Based Adaptation and Community Engagement” which is reintroducing vetiver grass to protect coastal and watershed areas from erosion.