



**Report of the Caribbean Agricultural Research and Development Institute
(CARDI)**

for

May 2021-June 2023

Forty-third Regular Meeting of the Executive Committee

San Jose, Costa Rica

19-20 July, 2023

LIST OF ACRONYMS

CARICOM	Caribbean Community
CDEMA	Caribbean Disaster Emergency Management Agency
CIAT	International Centre for Tropical Agriculture
CNCDS	Chronic Non Communicable Diseases
COTED	The Council for Trade and Economic Development
CROSQ	CARICOM Regional Organisation for Standards and Quality
CWA	Caribbean Week of Agriculture
DDSA	Detailed Damage Sectoral Assessment
DOA	Department of Agriculture
FAO	The Food and Agriculture Organisation of the United Nations
GARDC	Gilbert Agricultural and Rural Development Center
GATC	General Agreement for Technical Cooperation
GCF	Green Climate Fund
GIS	Geographic Information Systems
IICA	Inter-American Institute for Cooperation on Agriculture
IKI	International Climate Initiative
ITC	International Trade Centre
KfW	German Development Bank
MAFBA	Ministry of Agriculture, Fisheries and Barbuda Affairs
MAFNS	Ministry of Agriculture, Food and Nutritional Security
MAFSE	Ministry of Agriculture, Food Security and Enterprise
MALFC	Ministry of Agriculture, and Lands and Fisheries and Cooperatives
MOAF	Ministry of Agriculture, Fisheries and Mining
NAREI	National Agricultural Research & Extension Institute
OIRSA	Organismo Internacional Regional de Sanidad Agropecuaria
RRM	Regional Response Mechanism
SPW	Sweet potato weevil
UoF	University of Florida
UWI	University of the West Indies

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1.0 INTRODUCTION

The Caribbean Agricultural Research and Development Institute (CARDI) and the Inter-American Institute for Cooperation on Agriculture (IICA) have shared a long, beneficial relationship in the Region, dating back to 1989. During this period both institutions have collaborated on several initiatives to sustainably improve agriculture production and build resilience. In the past, technical cooperation between both institutions was formally governed by the General Agreement for Technical Cooperation (GATC). Through this agreement financial resources to conduct research and implement projects in agreed areas were provided to CARDI by IICA. However, in some situations both agencies have successfully collaborated outside of this arrangement through formal Letters of Understanding and Memorandums of Understanding and even through informal means.

Throughout 2021 and much of 2022 transforming food systems has been a recurring theme across the Region, as a result of COVID-19 and other prevailing conditions such as the Russia/Ukraine conflict, rising fertilizer and fuel prices and adverse weather conditions on food supply chains. Both CARDI and IICA play an important role in agriculture development and rural well-being in the Region, now share a renewed sense of urgency and commitment to work to: assist countries improve agriculture production and productivity, address the growing incidences of chronic non communicable diseases (CNCs), build resilience and fast track the implementation of the regional 20 x 2025 Agri Food Plan.

For the reporting period May 2021 – June 2023, most of the work conducted by CARDI were governed by agreements separate from the GATC as both institutions were finalising the details for the new agreement. There were more than 15 joint activities between CARDI and IICA during this period spread across 8 countries, directly impacting the livelihoods of hundreds of stakeholders. The majority of this work was focused on provision of technical assistance, capacity building and improving agriculture production and productivity.

In March 2023, CARDI and IICA signed a new General Agreement for Technical Cooperation (GATC) to collaborate on areas which contribute to the development of a sustainable agriculture sector that is resilient to climate change, supports vibrant rural economies and livelihoods and regional food and nutrition security. The agreement, signed by CARDI's Executive Director, Ansari Hosein and Director General of IICA, Manuel Otero will run for a period of 2 years.

2.0 CARDI/IICA activities 2021/2023

At the country level both IICA and CARDI share a strong working relationship and this partnership is expected to deepen with the priority now given to agriculture for achieving economic resilience and driving inclusive socio economic development at the national and regional levels.

In May 2023, CARDI participated in a Regional dialogue on science, technology and innovation in the agrifood systems of the Latin America and the Caribbean hosted by IICA Headquarters and represented the views of the Caribbean towards reinstating on the international agenda strategic issues on the necessary evolution of innovation systems.

While the work of both institutions for this reporting period fell outside of the GATC, in country, CARDI and IICA have collaborated on:

- Knowledge sharing activities
- Technical expertise sharing and capacity building workshops
- Development of joint projects and resource mobilization activities to address the specific needs of member states
- Sharing inputs and insights while participating in each other's' meetings and outreach activities



Figure 1: CARDI's Executive Director, Ansari Hosein and Country Representative in Antigua and Barbuda, Paul Lucas meet with IICA's Technical Specialist Craig Thomas in September 2022.

2.1 ANTIGUA AND BARBUDA

Project: Crowdfunded campaign to strengthen food security in Antigua and Barbuda in the face of COVID-19

IICA collaborated with CARDI and the Ministry of Agriculture, Fisheries and Barbuda Affairs (MAFBA), to mitigate the impacts of COVID-19 on small farmers in Antigua and Barbuda under a crowdfunded project. Resources garnered under this initiative supported 55 small farmers in rural communities to boost local production; through improved irrigation technologies and access to quality planting materials.

Droughts are becoming more frequent in Antigua and Barbuda, which has already been identified as one of the most water-scarce islands in the Caribbean. They reduce crop yields and productivity and cause premature death of livestock and poultry leading to serious social and economic consequences. Four beneficiary farmers had fully automated drip irrigation systems installed on their farms. Farmer Lescharles Joseph said, *“With the installation of the irrigation system on my farm I can now improve the amount and quality of food I produce, as without water, farming is nothing.”* Additionally, 18 farmers received drip irrigation tapes and farming inputs such as promix and seeds. Through the direct assistance of the project, an additional 11 acres of irrigated lands are now available for vegetable production.



Figure 2: Irrigated farmer's plot

Project: “Strengthening Coastal and Marine Climate Resilience through Upland and Coastal Ecosystem Based Adaptation and Community Engagement”

In Antigua and Barbuda, Vetiver grass was used to ameliorate and rehabilitate the Cooks Landfill, which borders one of the country’s largest mangrove swamps. This activity took place under the ‘Strengthening Coastal and Marine Climate Resilience through Upland and Coastal Ecosystem Based Adaptation and Community Engagement’ project implemented by IICA.

In mid-2021 Vetiver cuttings were imported from Dominica under the project. Following the plants arrival and quarantine, CARDI Antigua and Barbuda Unit provided technical assistance

to the project partners to establish and maintain 2 propagation nurseries in Bendals and the Gilbert Agricultural and Rural Development Center (GARDC).

CARDI provided technical guidance to the project partners on the grass' agronomy, fertilizer regime, soil and water management and weed control strategies. From these nurseries planting material were supplied to establish hedgerows along the perimeter of the landfill. The hedge will control soil erosion and leaching of toxic chemicals - both hazards to biodiversity in the area. The project was supported under the CBF EbA Facility, financed by the Government of Germany, German Development Bank (KfW) with resources from the International Climate Initiative (IKI) of the German Ministry of the Environment, Nature Conservation and Nuclear Safety.



Figure 3: Establishing Vetiver hedgerow at the Cook's landfill

Project: “Innovative Interventions to Strengthen The Be Foundation Community Garden in Barbuda”

The Be Foundation a community based organisation, located in Barbuda, is now the recipient of an upgraded community garden – equipped to produce a variety of high valued vegetables through the “Innovative Interventions to Strengthen Be Foundation Community Garden in Barbuda” project.

This project was financed by the Australian Government’s Direct Aid Program (DAP) and implemented by a number of locally based institutions including: IICA, CARDI, the MAFBA and the Barbuda Council. Through this project a drip irrigation system, fertilizer injector and biodegradable mulches were installed, the shade house upgraded and a utility room constructed. CARDI also facilitated several training sessions for the group on soil and water management and good agricultural practices. The Institute further provided technical support for the construction of the shade house and the installation of the irrigation system. Farmers and students from the neighbouring schools can now visit the site to view the improved technologies and adopt them to improve their own production. The project also supports

women inclusion. The team will continue to lend their support and offer technical advice to the Foundation on areas such as good agricultural practices and pest and disease management.



Figure 4: Stakeholders at the site of the refurbished Be Foundation Community Garden

Project - Next Generation Sweet Potato Production in the Caribbean

In Antigua and Barbuda, CARDI is a named partner for the implementation of the "Next Generation Sweet Potato Production in the Caribbean." Implementation for this project is led by IICA. The project is supported by the FAO and the International Treaty on Plant Genetic Resources.

The goal of this project is to make clean planting materials for identified priority varieties more widely available to farmers. Through participatory trials, drought and saline tolerant varieties will be identified as well as improved biological control and integrated pest management of sweet potato weevil (SPW) recommended. The utilization of non-marketable parts of sweet potato for animal feed will also be promoted.

CARDI would be conducting the field evaluations and lab analysis for this activity which is scheduled to start later this year.

Webinar - Efficient low cost irrigation and water saving techniques for increased production

On 14 September, 2022 CARDI Senior Technician based in Antigua and Barbuda, Bradbury Browne facilitated a webinar on 'Efficient low cost irrigation and water saving techniques for increased production.' This was the 2nd webinar under the Caribbean Climate Responsive Agriculture Forum organized by the IICA.

The webinar introduced and discussed the merits of furrow, sub surface, drip and sprinkler irrigation systems. The presentation also zeroed in on the fundamentals of drip irrigation systems, and discussed how automated irrigation technology can promote optimal crop growth, while reducing overall water consumption compared to other forms of irrigation.

Mr. Browne also discussed the importance of a field plan, irrigation scheduling and the setting up of a water harvesting system. Noting the relatively high input costs required to set up such a system, the webinar also introduced participants to some low cost options. These included recycled bottles utilizing a wick system for vegetable production, clay pots and recycled bottles for sub surface irrigation.

More than 400 participants from 18 countries attended the webinar. The feedback was positive with many noting that it was a very informative session which provided information that can be immediately used to improve their water usage and conservation.

IICA     

Caribbean
Climate Responsive Agriculture
FORUM
Webinar Series Part 2/3

Efficient Low-Cost Irrigation & Water Saving Techniques for Increasing Crop Production

September 14, 2022 

08:00 am Belize // 09:00 am Jamaica // 10:00 am AST // 11:00 am Suriname

Featured Presenter

 **Mr. Bradbury Browne**
Senior Agricultural Technician
Irrigation, Agronomy & Seed Production
CARDI Antigua & Barbuda

For more information contact:
Wendie SPESOULE CARDI - wendie.spesoule@iica.int

This forum will provide participants with practical information on:

- Techniques to address water-scarce conditions on-farm
- Different Irrigation systems and their applications
- Simple cost-effective irrigation techniques
- Experiences addressing water-scarce conditions on-farm

Registration Link: <https://iica.zoom.us/j/92042041192?pwd=ODhSc0p0bWpMc0pMc0pMc0pMk1wIsc0F95HN>

Figure 5: Advertisement for webinar on low cost irrigation and water saving techniques

2.2 BARBADOS

Project: Resuscitation of the Barbados' Papaya Industry

In January 2023, CARDI was invited to participate in the Papaya Industry Development Committee by IICA. This Committee, which constitutes members from Ministry of Agriculture, Food and Nutritional Security (MAFNS), IICA and the Food and Agriculture Organisation of the United Nations (FAO), are on a mission to revitalise Barbados' papaya industry which has been on a steady decline over the years. Several factors have been responsible for this including increased pest and disease incidences – especially Papaya Bunchy Top (PBT).

As an outcome, two projects for the Resuscitation of the Barbados' Papaya Industry were developed. CARDI is a named partner for the implementation of activities under both projects.

The first, is a 12 month project that will identify Papaya Bunchy Top (PBT) resistant varieties and improve the capacity of farmers in papaya production and commercialization through the creation of a series of communication products as well as the development of a papaya industry plan to guide and monitor the development of the industry. Project partners include MAFNS, FAO, the University of the West Indies (UWI), University of Florida (UoF) and private farmers.

In the second project, a Papaya Spacing Trial have commenced at the CARDI Field station in Graeme Hall. This trial will investigate the impact of variations in spacing on the productivity of 2 new PBT resistant varieties received by the MAFNS - the Bella Nova and Maradona. It will provide recommended spacing requirements for the optimal production of these two bunchy top resistant varieties of papaya in Barbados. Project partners for this activity include the MAFNS, CARDI, IICA and private farmers.

It is expected that both projects will collectively contribute to resuscitating the papaya industry resulting in a reduced reliance on imports and increasing access to fresh fruit in Barbados.



Figure 6: Papaya seedlings ready for transplanting at CARDI Barbados



Figure 7: One week old transplanted papaya seedlings at the CARDI field station

Sustainable Feed Project

The Barbados Manufacturers' Association (BMA) and IICA Barbados collaborated on a workshop to identify 'Sustainable feed options for farmers and processors' under the Association's Sustainable Feed Project. The workshop was held in June 2023.

CARDI's Animal Productionist, Albert Fearon based in Jamaica represented the institute at the workshop and delivered a presentation on 'Indigenous grasses for feed usage.' Fearon is highly regarded across the Region for his knowledge, experience and competence in livestock production, particularly small ruminants and forage agronomy. Unfortunately, this was one of the last presentations made by Fearon before his untimely passing on 14 June, 2023.

2.3 BELIZE

Project: Biofortification of Beans for CARICOM

In Belize, CARDI and IICA have been collaborating on a project entitled the ‘Biofortification of Beans for CARICOM’. The project is evaluating commercial varieties of beans to determine the baseline iron and zinc content and thereafter selecting promising lines for fast tracking variety release. This project is collaboration among the Ministry of Agriculture, Food Security and Enterprise (MAFSE), The International Centre for Tropical Agriculture (CIAT), Harvest Plus, Organismo Internacional Regional de Sanidad Agropecuaria (OIRSA), CARDI and IICA.

The beans for 63 accessions, harvested from the Observation Yield Trials conducted by CARDI Belize were sent to CIAT for analysis in June 2022. However, the breakdown of equipment at CIAT is delaying the results of this analysis.



Figure 8: Biofortification bean trials at the CARDI field station in Central Farm

Project: Strengthening the foundation for a climate responsive agricultural sector in the Caribbean (GCF CARICOM AgReady)

CARDI staff at the Belize office were trained to conduct national agriculture GHG inventories under the IICA implemented GCF-Readiness Project titled “Strengthening the foundation for a climate responsive agricultural sector in the Caribbean” (GCF CARICOM AgREADY). through a Grant Agreement with the Green Climate Fund (GCF) with The Ministry of Environment and Housing. The Bahamas is the lead National Designated Authority (NDA). CARDI also continued to participate in Ag Ready meetings.

2.4 GRENADA

Project: Strengthening the foundation for a climate responsive agricultural sector in the Caribbean

IICA is collaborating with the Royal Saint Lucia Police Force (RSLPF), the Ministries of Agriculture in St Lucia and Grenada and CARDI to implement the project entitled “Brown Gold: Supporting Community Composting in Grenada and Saint Lucia” with funding from the Australian High Commission through the Direct Assistance Program (AUSAID DAP).

This project will create community-based sustainable composting systems for residents of Bruceville, Saint Lucia and community backyard gardeners, 4-H’ers and farmers in Grenada.

The objectives are to encourage personal-level sustainable green waste management (which account for 45% of landfill materials in Saint Lucia and 40% in Grenada) and support urban/peri-urban farming for improved access to nutritious foods as well as livelihood enhancement. Sustainable, personal and collaborative composting programmes will be developed in the two participating countries.

Residents of the benefiting communities (including schoolboys and girls) will be educated and trained in the science and practice of compost making, beginning with understanding green wastes, how to separate and collect them, then finally how to make and use high quality compost. In Grenada, this will be done within a pre-existing backyard gardening programme, the 4-H’ers, Mirabeau Propagation Station and CARDI Field Station.

Activities

Rehabilitation works to the existing composting shed at the CARDI Field Station began. The scope of works included:

- i. Replacement of the mud floor with concrete
- ii. Replacement of wooden enclosure with concrete blocks
- iii. The inner enclosure of the bins made collapsible
- iv. Guttering installed for rain water harvesting

Achievements

To date 70% of the rehabilitation works have been completed. Three composting bins with a collective capacity of 92 cubic feet were constructed at CARDI Westerhall.

CARDI’s Technician (Sabrina Thomas) employed under the Regional Coconut Project benefitted from training on compost making. Since then 3 batches of compost have been made and used in the vegetable seedling production program and coconut nursery at the CARDI Field Station.

On 29 September 2022, CARDI, IICA and the Ministry of Agriculture, and Lands and Fisheries and Cooperatives (MOALFC) partnered to host a composting training for 16 participants (15 females and 1 male) from the Grenada Backyard Gardeners Network Initiative at the CARDI Field Station. Mr. Derek Charles, IICA’s National Specialist conducted the theoretical session while CARDI’s Technician Reuben Raymond facilitated the practical session. Topics covered included the best types of materials to use as feedstocks and the importance of timely turning and monitoring to ensure the production of high quality compost.



Figure 9: Composting shed pre rehabilitation



Figure 10: Composting shed post rehabilitation



Figure 11: Participants in the compost training workshop hosted by CARDI, IICA and MALFC



Figure 12: Practical training in compost making



Figure 13: Checking temperature of compost

2.5 GUYANA

Sweet potato seed germplasm expansion

CARDI and IICA are collaborating on an initiative to import 9 sweet potato varieties from Jamaica, Trinidad and Barbados to expand Guyana’s seed germplasm. These varieties were selected based on the following criteria: high yielding, suitability for processing/value added product development, pest and disease tolerance and drought tolerance.

Table 1 identifies the varieties being imported into Guyana.

TABLE 1: SWEET POTATO VARIETIES BEING IMPORTED BY GUYANA FROM BARBADOS, JAMAICA AND TRINIDAD & TOBAGO

Country	Quantity	Type	Imported Varieties
Barbados	100 lbs	Tubers	C104, Caroline Lee, 94/7
Jamaica	100 lbs	Tubers	Ganja, Uplifta, Yellow Belly
Trinidad and Tobago	100 lbs	Tubers	Chicken foot, Orange, Purple

The CARDI offices in the respective countries have secured the import permits and at the time of this report were making arrangements to send the tubers to Guyana via air freight.

In Guyana, the tubers will be multiplied and added to National Agricultural Research & Extension Institute’s (NAREI) collection. From here farmers will be able to access these superior sweet potato lines for production.

Caribbean Climate Responsive Agriculture Forum (CCRAF)

In addition, CARDI participated in the Caribbean Climate Responsive Agriculture Forum (CCRAF) 2023 Edition:

- 'Caribbean Specific Agriculture Apps to Help Farmers Adapt to Climate Change', May 17, 2023.
- Experience of Children-Youth, & Women Organizations in Agriculture Climate Action & Sustainability, June 14, 2023.

and

- IICA-COLEAD Webinar Youth Owned Business that Incorporate Technology and Innovation, June 8, 2023.

Detailed Damage Sectoral Assessment – Flooding in Guyana

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 following the devastating flood in May/June 2021. Five DDSA teams were officially deployed to Guyana to report on the flooding impacts on health, mining, agriculture, infrastructure, housing, water, sanitation, shelters and the social sectors. 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 IICA, the FAO and the Ministry of Agriculture and its agencies and contributed to the report on the impacts of the flood on the agriculture sector.



Figure 14: Assessing flood damage in Guyana as part of DDSA in 2021

2.6 JAMAICA

Proposals development

Over the period, IICA and CARDI worked together on two project proposals.

The first was to support Jamaica's three key spice value chains of ginger, turmeric, and pimento (or "Allspice"). Focus was on scaling up production with more farmers and strengthening public and private partnerships as well as furthering collaboration within the value chain and with governmental facilitative bodies. Women and youth engagement and the adoption of climate smart solutions were priority areas addressed in the proposal. The proposal targeted a total value of USD 13,362,040 over 5 years. The bid was unsuccessful.

The second proposal was in response to the BSF5 Next Gen sweet potato project with a total value of USD 582,992.96 over 4 years. The goal of this project is to make clean planting materials of identified priority varieties more widely available to farmers. Specifically, capacity will be strengthened at the Bodles Research Station, MOAF Jamaica. Also, women sweet potato growers would be trained to maintain and produce clean sweet potato seed for sale. These cleaned up local varieties will be deposited in national and international gene banks. Policy will be strengthened for the movement of sweet potato clean seed in CARICOM. This project has been greenlighted and soon both agencies will meet to plan the roll out of activities in Jamaica.

In addition, CARDI and IICA collaborated on a Technical Cooperation Action for Haiti. Activities are focused on enhancing the 'Root crop production systems development for sweet potato' along the lines of sweet potato characterization and integrated pest management of the sweet potato weevil. A budget for this activity currently being formalized.

2.7 ST KITTS and NEVIS

Training on Roots, Banana and Plantain Production

During the week, 23- 26, May 2022, CARDI St. Kitts and Nevis hosted a ‘Roots, Banana and Plantain Production’ training in St. Kitts and Nevis. The objective of the training was to strengthen the technical capacity of farmers and technical staff in the Ministry of Agriculture, both in St. Kitts and in Nevis to enhance the development of these respective sub-sectors. This training focused on propagation techniques, agronomy and pest and disease management in yams, dasheen, eddoe, tannia, banana and plantain.

The facilitators were Gregory Linton, Crop Protection Specialist, CARDI St. Vincent and the Grenadines and Ms Sharon Jones, Technical Specialist, IICA, St. Kitts and Nevis. The Ministry and Departments of Agriculture (DOA) also provided financial and physical resources for the event.

The technical team visited the DOA’s Fahies Outreach Center, and a leading banana farmer in St. Kitts to demonstrate the propagation of various tuber crops.



Figure 15: CARDI Specialist advising extension officer and farmer on irrigation and succession planting in bananas

On May 24 and 25, classroom type sessions were conducted in St. Kitts and Nevis, respectively. CARDI Tech Packs and Production Guides were used to develop the training material.

Also, on May 25 the facilitators visited a 17-acre fruit tree orchard at Indian Castle, Nevis, to provide technical advice to the managers regarding coconut and banana production.



Figure 16: IICA's facilitator Sharon Jones at the farmers' training in St. Kitts

On May 26, practical demonstration sessions were held across both islands. A total of 22 persons in St. Kitts and 27 persons (including 10 women in Nevis), participated in the training. Participants included farmers, trainees, technical staff in the DOA and Ministry personnel. Participants' feedback were unanimously positive.



Figure 17: Field demonstration by CARDI's Crop Protection Specialist, Gregory Linton on banana production

Feedback

"All the information came out positive. Even some of the farmers who were there said it was a positive. So it was a success. Because one or two of the farmers who didn't attend, we gave them some tannia and they were going to cut it up and put it straight in the ground. But because of the training now, we were able to tell them, well no, cut it up and put some treatment on it and then let them sprout before you plant it"

Mr Dion Weekes, Extension Officer in the Department of Agriculture, St. Kitts.

"Am truly satisfied with the workshop. Congrats to the Department for a great and timely workshop!!!! And the facilitators were great as well"

Anonymous Farmer, Nevis.

Follow up:

CARDI St. Kitts and Nevis will follow up on this training with research on the effects of various crop management treatments on tuber yields. Additionally, several participants voiced that they were concerned over the risk conventional (synthetic) pesticides and fertilizers posed to food safety and human health. There is an increasing desire to move towards alternative pesticides. Consequently, there is need to identify and validate alternative and preferably, non-toxic forms of pest and disease control in production systems. Advance practical training was recommended by participants.

The presentations delivered at the training can be accessed

here: <https://drive.google.com/drive/folders/1Tn7iT0k1CsiTluCeYa294RnzMt9H6m3e?usp=sharing>

2.8 TRINIDAD AND TOBAGO

IICA Model Farm Project

Under the IICA Model Farm Project, CARDI:

- Trained 8 IICA model farmers in ‘Hot pepper production techniques for a changing climate’ on 24th November 2022. The training was conducted by Fayaz Shah, Head of the Trinidad and Tobago Unit.
- Collaborated with IICA to recommend and source coconut fibre as a mulch for weed control and moisture management by their model farmers. This was used on the 8 farms involved in their model farm project. Crops cultivated by farmers included lettuce, celery, hot pepper and bodi.
- Provided experimental design to IICA Model farm project for evaluating the effect of compost, limestone coconut fibre and bio fungicide on the farms.

CARDI participated and is in support of IICA’s National Dialogue for development partners held on April 25th 2023.

CARDI’s Information Technology Manager participated in an IICA training on Geo-Spatial 3D Modelling to help Combat Coastal Soil Erosion from 6th – 8th June 2023.

3.0 Strategic Alliances

CARDI and IICA continued to collaborate closely within the context of several CARICOM and Council for Trade and Economic Development (COTED) Agriculture institutional arrangements including the Agriculture, Food and Nutrition Cluster (AFNC) and its satellites- the Thematic Groups and Commodity Working Groups.

CARDI serves as chair of the AFNC, which has the mandate to harmonize the various work programmes of the Regional Institutions and the Region’s International Development Partners (IDPs) so as to capitalize on synergies, especially in the context of dwindling resources available to the Region. IICA serves as a valued member of the AFNC and in addition, participates the Coconut Commodity group, Research and Human Resource Development Thematic Group and most notably, the Business Development Thematic Group, which it chairs. All of these various regional groups report to the AFNC, where their contributions and reports are represented at the level of COTED (Agriculture) and at times, the CARICOM Heads of Government (CHOG).

The organizations also work closely together to plan and co-host events during the Caribbean Week of Agriculture (CWA). Both institutions are Secretariat members of the Alliance for Sustainable Development of Agriculture and the Rural Milieu commonly referred to as ‘the Alliance’. In 2021, CARDI and IICA collaborated with the International Trade Center (ITC) and the CARICOM Regional Organisation for Standards and Quality (CROSQ) to host a webinar on the Promotion of Regional Packaged Natural Coconut Water Standards.

Both institutions have initiated discussions for the 17th edition of the CWA which will be held from 9-13 October, 2023 in the Bahamas.

IICA is an observer on the Board of Directors of CARDI and in this position, has provided valuable insights into improving the governance mechanisms of the organization.



Figure 18: CARDI and IICA in collaboration with other agencies hosted a webinar on regional packaged coconut water at CWA 2021

4.0 The General Agreement for Technical Cooperation

CARDI and IICA have signed a new General Agreement for Technical Cooperation (GATC) to collaborate on areas which contribute to the development of a sustainable agriculture sector; that is resilient to climate change, supports vibrant rural economies and livelihoods and regional food and nutrition security. The agreement, signed in March 2023 by CARDI's Executive Director, Ansari Hosein and Director General of IICA, Manuel Otero will run for a period of 2 years. The last GATC covered the period January 2019 to March 2021.

Under the new agreement collaborative efforts will focus on supporting agricultural research, technical advisory services, innovation and technology transfer. Among the commodities and priority areas targeted for development are: livestock, crop industrialization and utilization, germplasm management, food safety, biotechnology, climate change mitigation and management and knowledge management.

Cognizant of the digital revolution that is taking hold and changing the face of modern agriculture, CARDI and IICA will also focus efforts and resources on the integration and use of artificial intelligence, block chain, drone technology, robotics and Geographic Information Systems (GIS) in Caribbean agriculture. Youth engagement is important to both institutions and innovation and technology are two ways of attracting and retaining this important target group in the sector.

Under the present agreement both institutions will also pursue initiatives such as the joint proposals for resource mobilisation, technical missions, staff exchanges and training courses that contribute to the development of the sector's human capital. The implementation of these activities in member states will be governed by specific cooperation agreements and or Letters of Understanding.

4.1 IICA/CARDI Projects for the period 2023/2025

Under the GCTA, CARDI is working with IICA office in Trinidad and Tobago to develop the following project:

- Increasing cassava and sweet potato production and productivity to support agro processing industry development in Trinidad and Tobago, St. Kitts and Nevis, Guyana and Bahamas.



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