



### *CARDI set to carve new commercial paths in 2010*



*A group session at a CARDI 2010 Planning Meeting*

**C**ARDI plans to expand its revenue generation activities over the next three years, according to Executive Director, Dr. Arlington Chesney. This follows initial ventures towards commercial activities over the last two years.

Reviewing the last financial year and projecting into the next three-year term, he explains that over the period, 2008 to 2009, the Institute generated some US\$0.3 million revenue from new commercial activities – mainly production of planting material. Revenue of some US\$0.5 million is anticipated in 2010. CARDI's commercial activities, located primarily in Antigua, Barbados, Belize and Grenada, are financed by a special revolving allocation set aside from its core budget. This reflects a new direction for the Institute in its thrust towards greater self-sufficiency and long-term sustainability.

Dr. Chesney also notes that in 2008 and 2009, US\$6.7 million was approved by various development agencies for

projects to be implemented by CARDI. These agencies include Common Fund for Commodities (CFC), European Union (EU), ACP-EU Technical Centre for Cooperation in Agriculture and Rural Development (CTA), Inter-American Institute for Cooperation in Agriculture (IICA) and CARICOM/Japan. In addition, proposals valued at US\$22.3 million are awaiting approval.

“We have made significant progress in implementing CARDI's action plan in mobilising external resources and introducing measures to better manage our portfolios. CARDI is poised to assist the Caribbean to diversify its agricultural sector; increase its productivity and contribute to reduction of hunger and poverty,” says Dr. Chesney.

However, he identifies the inability of Member States – in the current financial crisis - to increase contributions to the Institute as a major constraint if the Institute is to enhance its technical and intellectual capacity to meet the greater demand requirements of Member States as they strive to implement the “new” agricultural agenda.

The draft CARDI 2010-2013 Action Plan takes factors affecting agricultural development into account both in recognising the strong operational performance of 2008-2009 and the financial realities of CARDI's Member States. Specific actions include a membership drive to have all CARICOM States become members of CARDI, intensified efforts to collect arrears from member states, and negotiations with donors.

The draft Action Plan was presented to the meeting of the Inter-American Board of Agriculture (IABA) held last November in Jamaica.



## New IICA DG takes helm

CARDI welcomes Dr. Victor Villalobos Arámbula of Mexico who took up the position as Director General of the Inter-American Institute for Cooperation on Agriculture (IICA) on 15 January, 2010. He will serve for the period 2010-2014.



**Dr. Victor Villalobos Arámbula**

“We are confident that IICA’s relationship with CARDI and indeed the entire Caribbean will continue to flourish under his leadership,” said CARDI’s Executive Director, Dr. Arlington Chesney in sending best wishes on behalf of CARDI. Dr. Villalobos received 30 of the votes cast by the Heads of Delegation that attended the Fifteenth Regular Meeting of the Inter-American Board of Agriculture (IABA), IICA’s highest governing body. CARICOM Ministers of Agriculture and the CARDI Board of Governors agreed to support Dr. Villalobos at the Special COTED meeting in Guyana in September, 2009.

Dr. Villalobos is a well recognised hemispheric expert in agriculture, biology, natural and genetic resources. He served in the Mexican Government as Natural Resources Undersecretary for the Secretariat of Agriculture, Ranching, Rural Development, Fisheries and Food. He was the Director of the Agriculture Division (1986-1990) in the Tropical Agronomic Center for Research and Teaching (CATIE) and has served as the Executive Official on Biotechnology (1990-1995) and President of the Board of Directors (1999-2003) of CATIE.

He holds a BSc in agronomy from the National School of Agriculture in Chapingo, Mexico; a MSc in Plant Genetics from the Graduate College of Chapingo; and a PhD from the University of Calgary, Canada, following a thesis on Plant Morphogenesis. As a researcher, he has encouraged the use of agriculture biotechnology as a tool for sustainable produc-

tion, reflected in his two books: *Tissue Culture Contribution to Plant Improvement and Conservation* (1982); and *Transgenic Plants: Opportunities and Threats* (2007). He has instructed undergraduate and graduate programmes at regional and international institutions and holds several awards including an honour from the President of Mexico for his contribution to agriculture biotechnology.

Dr. Villalobos has the following academic honors:

- Member of the Royal Agriculture and Forestry Academy of Sweden
- Honorary Doctor’s Degree of CATIE (2004)
- Member of the “Scoping Team” for CGIAR
- Member of the Science and Technology Commission for the National Council of Science and Technology and California University (UC-Mexus)
- Professor Ad Honorem for the Graduate College of Chapingo
- Distinguished alumni of the Autonomous University of Chapingo.

## Excerpts from IABA approved Resolution 464

- That the Executive Director of CARDI presented that Institute’s Plan of Action, 2010-2013 to the Fifteenth Regular Meeting of the IABA.
- To note the Plan of Action, 2010-2013, which
  - a. is built on the success achieved so far in attracting external resources for projects.
  - b. shows improvements in its financial situation
  - c. demonstrates the need for additional resources from traditional CARDI supporters.
- To demonstrate its support to the Caribbean Region in the diversification and productivity of its agricultural sector by its continued allocation to CARDI.
- To work further with the management of CARDI to obtain external resources of a minimum of US\$300,000 per year for the period 2010-2013 to support its efforts to implement the Region’s agriculture diversification programme.

## Looking towards 2010-2013

CARDI envisions consolidation of the achievements of 2008-2010 and targets the following Emerging Issues for achievement in the coming period 2010 to 2013:

**Protected agriculture:** Validate best practices for low capital protected agriculture systems in at least three countries; develop alleviating measures for constraints identified in Haiti, Jamaica and Trinidad and Tobago.

**Agroenergy:** Investigate crops that are sources of alternative energy and contribute to a low carbon strategy.

**Climate change:** Improved knowledge and skill related to agriculture adaptation/mitigation and climate change with training; participation in the modelling of climate change scenarios on commodities of economic importance; identify varieties of CARDI commodities adaptable to climate change variables.

**Biotechnology:** Further develop capacity to identify and certify purebred Barbados Blackbelly sheep; DNA fingerprint profile of Barbados Sea Island cotton.

**Information transfer:** Technical manuals and videos for at least two commodities; institutionalising publications such as, R&D in Agriculture and Agriculture in the News; improved transfer of technologies to farmers in the Region (with Ministries); information sharing on threats of invasive species.

Targets within Traditional Themes include:

- At least one new variety of rice with a developed & acquired germplasm bank in Belize;
- Increased availability of commercial seeds developed through collaboration with the private sector.
- Development and transfer of new/improved agronomic and pest management technologies.
- Dissemination of dwarfing techniques for Golden Apple production.
- Management of the fruit fly and development of marketing systems for Golden Apple in Grenada.
- Improved small ruminant breeding stock and small ruminant Centres of Excellence initiated in Barbados, Grenada, Jamaica, Trinidad & Tobago.

## Synergies and partnerships key to success



A bottom-up/client-led approach, working together, and accountability and transparency, that requires continuous consultations with stakeholders, clients and partners; development of strategic synergies and partnerships, and human capacity-building, are the three pillars that CARDI is using to meet its goals.

Activities directly linked to food production and management of the environment, including developing the commodity value chain, sustainable industries, strategic linkages as well as investing in Science, Technology and Innovation (ST&I), natural resource management, advocacy and outreach are critical aspects in the realisation of this vision.

Since 2008, CARDI has considerably strengthened its relationships with its national, regional, hemispheric and global stakeholders and partners, such as, CTA, IICA, CABA, CATIE, CDB, CCS, CIAT, CIP, CFNI, ECLAC,

FAO, OECS, UF, UWI and UPR; further it coordinates the CARICOM Cluster of Institutions involved in Agriculture.

Memoranda of Understanding have been signed with agri-entrepreneurial groups CRA and CaFAN, with SRC, Jamaica, an entity involved in value addition, with provision of human resources to organisations as FAVACA and NRI, and also with technology innovation institutes CAAS, CLAYUCA, IFDC, CIRAD. Memoranda of Understanding are under negotiation with the CCCCC and THA.

The government of the Cayman Islands have made the decision to join CARDI and the Institute is working towards establishment of the Friends of CARDI to support and promote the work of the Institute.

CARDI is in a strong position to build on successes of the previous years to help the Region diversify its

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agricultural sector in the drive towards Food and Nutrition Security.

Technological advances available for use by the Region are announced at the upgraded CARDI website and by the introduction of two new publications – R&D in Agriculture and Agriculture in the News. CARDI recently published a Technical Manual on Validation Procedures; a Plantain Manual in Dominica; and Coconut Production Guide in St Lucia.

Further, the “New” Agriculture and R&D as a critical component in its implementation were promoted through the public lecture series in Trinidad & Tobago; in co-hosting a food crisis seminar with CDB, and promotion of ST&I for the New Agriculture through shows and exhibitions.

These activities are all an effort towards establishment of CARDI as the preferred R&D Institution in CARICOM.

## CARDI successes: 2008-2009

**Cereals and Grain Legumes:** Successful control of Asian Soybean Rust (*Phakospora pachyrhizi*) in Belize.

**Hot Peppers:** Production of commercial seeds - CARDI Green, West Indies Red and Scotch Bonnet in Antigua & Barbuda and Belize. Assessments ongoing of insecticides against pepper weevil.

**Fruits and Vegetables:** Multiplication and distribution of quality and disease-free vegetable seedling and fruit tree planting material in Grenada and St Lucia; support for Grenada’s golden apple industry with fruit exported to Trinidad and Tobago; training of pack house operators in post harvest handling for vegetables and fruits in Belize and St Lucia.

**Livestock:** Attained target 87.5% stud buck service for goat herds which is available in Jamaica.

**Protected Agriculture:** Identification of major constraints in practice of protected agriculture in the Region; prioritised five technical areas for action by partner agencies including completion of preliminary *in situ* comparison of protected versus open field agriculture; transfer of low capital technology for commercial production.

**Biotechnology:** Completed laboratory studies on DNA fingerprinting of Barbados Blackbelly sheep with the po-

tential to determine pedigree animals to start foundation and breeding/multiplication flock; studies completed for yam anthracnose in Dominica; advancement of hybridisation work on hot pepper varieties West Indian Red, Tiger Teeth, Scotch Bonnet, Yellow Congo and Red Congo.

**Invasive Species:** CARDI chairs Caribbean Invasive Species Working Group which develops systems for managing invasive species; coordinates Regional response to Coconut Red Palm Mite; assisted in importing *Gyranusoidea indica* Shafee, to manage Pink Hibiscus Mealy Bug in Jamaica.

**Climate Change:** Collaborated with Caribbean Community Climate Change Centre (CCCCC) and the Caribbean Institute of Meteorology and Hydrology (CIMH) to train Regional professionals in using assessment tools and methodologies for studying the impact of climate change on agriculture; initiated development of a Regional Strategy for Climate Change and Climate Variability.

**Roots and Tubers:** Introduction of high-yielding varieties of sweet potato and cassava from CIP and CIAT, respectively; transfer of high-yielding varieties of cassava from St. Vincent and the Grenadines to other CARDI member countries; completion of yam Anthracnose studies in Dominica.

# CARDI showcases success

*Region celebrates advances in agricultural R&D*

The CARDI Open Day began in 2008 and is one of the outreach mechanisms the Institute is using to engage the public in its activities.

CARDI Open Days provide an opportunity for face to face interaction with CARDI's various partners and stakeholders in its 12 member countries. They learn about the latest research as it showcases the innovations that will transform regional agriculture and improve food and nutrition security in the Region. In 2009, Open Days were held between November 26 to December 4, with CARDI's slogan as the theme "improving lives through agricultural research".

## *Antigua and Barbuda Unit to upgrade*

CARDI Antigua and Barbuda will expend US\$40,000 during the upcoming fiscal year to upgrade its seed storage, laboratory and irrigation facilities to the Region. This was announced by CARDI's OECS Coordinator and Country Representative for Antigua, Dr. Greg Robin, at the CARDI Open Day. Participants included Minister of Agriculture, Lands, Housing and Environment, Hilson Baptiste; Junior Minister, Chandler Codrington, Permanent Secretary, Mr. Clarence Pilgrim and other dignitaries from the Ministry and farmers.

A bus tour was organised for stakeholders to view the Unit's operations, including the one acre commercial hot pepper seed production plot at Dunbars Research Station and the sweet potato zonal trials at Cades Bay and Betty's Hope.

CARDI's Antigua and Barbuda Unit is the centre for commercial production of hot pepper seeds and is responsible for supplying other CARICOM countries with this commodity. An onsite demonstration of the hot pepper seed extraction process was conducted with the Minister of Agriculture suggesting that the pulp produced from the extraction process be packaged by the Central Market Corporation.

## *Commendations from Barbados*

Minister of Agriculture, the Honourable Haynesley Benn, commended CARDI for the work done on the DNA fingerprint profile of the Barbados Black Belly Sheep and the introduction of a new forage, Mulatto.

He was speaking at the CARDI Barbados Unit Open Day at the Ministry of Agriculture and Rural Development, Graeme Hall Field Station. Attendees ranged from farmers and nursery operators to collaborators, such as, the MARD, IICA, BADMC and BAS.

In delivering the feature address, Mr. Benn spoke about CARDI's lead role in research and development of new hot pepper cultivars, the introduction of high yielding varieties of cassava and its role in the development of control measures for Scarabee in Sweet Potatoes.

To demonstrate the work of the Institute, CARDI presented poster displays, equipment exhibits, onsite demonstration of hot pepper seed production and the making of molasses urea blocks.



**Dr. Pat Ann Francis explains use of the manual compactor for silage production to Senator Haynesley Benn and Mr. David Chase**

Dr. Pat Francis, Animal Nutritionist, highlighted several measures CARDI is pursuing to ensure greater food security for small ruminant farmers.

- Provision of technical support to persons for improved pasture management;
- Supply of drums and the introduction of a forage press to farmers for making silage;
- Reintroduction of neem to be used as a dewormer and insect repellent in stored feed.

Participants received samples of goats milk and some of the value added products from cassava.

## CARDI showcases success

### *Dominica's Bonda Ma Jacque in spotlight*

Dominicans were invited to view displays mounted by CARDI showcasing its work on characterisation of the landraces within the local hot pepper variety, Bonda Ma Jacque. One of the landraces was selected as being most suited for the country's processing industry. CARDI's work with small ruminants, sweet potato and protected agriculture was also showcased.



**Bonda Ma Jacque hot pepper sampling in progress**

CARDI's Dominica Open Day was held at the Public Service Union Conference Room. Among attendees were Permanent Secretary, Ministry of Agriculture and Forestry, Mr. Samuel Carrette; Director of Agriculture, Mr. Richard Allport; and IICA Representative for the Organisation of Eastern Caribbean States, Ms. Una May Gordon.

### *Planting material for St. Lucia farmers*

St. Lucian Minister of Agriculture, Lands, Forestries and Fisheries and Chairman of CARDI's Board of Governors the Honourable Ezekiel Joseph, stated that the CARDI Open Day has much to offer farmers as it provides a platform for the Institute to showcase its achievements from which agri-entrepreneurs may benefit. He was giving the feature address at the Opening of CARDI's Open Day in St Lucia at CARDI Demonstration and Training Centre (DTC) at La Resource, Dennery. Stakeholders ranging from farmers to teachers attended the event along with key

collaborators from the Ministry of Agriculture and IICA.

Participants were given a guided field tour of CARDI's operations at the DTC. Generating considerable interest was the vine control methodology in the passion fruit production system, work on protected agriculture versus open field production systems, dwarf coconut seedling production and root crop planting material. Many interested farmers made requests for root crop planting materials for their own operations.

### *Jamaica strengthens ties*

Plans to further strengthen the relationship between the Government of Jamaica and CARDI are underway.

Future collaborative work in protected agriculture, organic farming, and increased productivity of mined out bauxite lands are earmarked according to Dr. Derrick Deslandes, Chairman of the Centre of Excellence for Advanced Technology in Agriculture (CEATA). He was speaking on behalf of the Minister of Agriculture and Fisheries



**Patrons viewing posters and exhibits**

at CARDI's Open Day at CARDI's Office at the University of the West Indies, Mona Campus.

The Day saw many of CARDI's key strategic partners and a range of professionals and scholars from across the scientific community.

In delivering the opening remarks, Acting Country Representative, Dionne Clarke Harris, noted that Jamaica was specifically concentrating on commodity development, emerging issues, climate

## CARDI showcases success

change and agriculture development, seeds and seedling banks and invasive species.

Dr. Deslandes expressed the Ministry's satisfaction of the work being done by CARDI.

Exhibits included a poster display, on site demonstrations and the viewing and tasting of products from commodities researched by CARDI. Some key collaborators shared their experiences working with the Institute over the last year:

Idelle Brown, Exporter, Belle Tropicals Limited expressed gratitude to the Institute as her operations were positively impacted by the reinstatement of Amaranth (Callaloo) to the preclearance list of exports to USA.

Patricia Issacs and Leroy Dehalaye, farmers, believed that their association with CARDI has led to increased yields, improved performance of selected varieties, reduced pest problems, new technologies and increased marketing opportunities.

### *Trinidad and Tobago looks for guidance*



**Participants at CARDI, Trinidad and Tobago Open Day inspect sweet potato.**

**Left to right: Dr. Arlington Chesney (CARDI), Mr. Greg Rawlins (IICA), Mr. Herman Adams (CARDI), Ms. Margaret Parillon (Permanent Secretary) and Mr. Patrick Cambridge (Chief Technical Officer)**

Research and Development Institutions, such as, CARDI have to provide guidance to the various regional Ministries of Agriculture so that they can meet the challenges facing agriculture today. Such institutions must use research to produce novel methods that increase agricultural production and efficiencies. So said Margaret Parillon, Permanent Secretary in the Ministry of Agriculture, Land and Marine Resources at CARDI's Open Day at the Sugar Cane Feeds Centre (SFC) in Longdenville. SFC is the site for CARDI Trinidad and Tobago Unit's research work. A wide range of stakeholder groups attended this event. Key institutions, such as, the Ministry of Agriculture Land and Marine Resources, IICA, TABA, ASTT, NAMDEVCO and UWI were also represented.

Exhibit booths and field tours showcased CARDI's work in T&T. These included posters, factsheets and interactive displays of forage based feeding systems, development of commercial systems for herbs and hot pepper seed production.

The tours highlighted (a) the new pasture grass, Mulato II, a superior forage for incorporation into livestock production systems, and (b) the local hot pepper landraces which have been collected, purified and stabilised.

A low input resource method for mass producing high quality seeds was also showcased.

# CARDI explores new opportunities

CARDI participated in a number of regional, hemispheric and international meetings aimed at furthering implementation of the current work programme, identifying opportunities for developing new strategic alliances, increasing technical expertise and providing technical assistance. This will help to make better use of our limited resources.

## Global

The Technical Centre for Agricultural and Rural Cooperation (CTA) 8th Meeting of the Advisory Committee on Science and Technology for ACP Agriculture and Rural Development took place in Montpellier, France in mid November 2009. CARDI, represented by Dr. Arlington Chesney and Mr. Norman Gibson, is a member of the Advisory Committee. Dr. Chesney made a presentation to the 40 participants on “Caribbean Agricultural Research Systems at a Cross Roads” in keeping with the theme of ICTs Transforming Agricultural Science and Innovation – Implications for ACP Agriculture. The ACP endorsed the CTA Science Technology and Innovation policies and strategies for the period 2010-2012.

The Forum for Agricultural Risk Management in Development (FARM) in Lucerne, Switzerland, saw participants from business, finance, government, funders, NGO’s, farmers and international and regional organisations. It focused on identifying potential areas of support. CARDI, through Mr. Bruce Lauckner, Head, Strategic Alliances contributed to the discussion on risk management and recommended that considerations be given to praedial larceny as an agricultural risk in the Caribbean.

## Hemispheric

### Global R&D

The Regional Consultation in Latin America and the Caribbean about Agricultural Research for Development at the International Center for Tropical Agriculture

(CIAT), Cali, Colombia saw some 60 representatives including Dr Francis Asiedu, CARDI Manager Technical Services, directors of national and international agricultural research institutes, academics, farmers, NGOs, private sector and public officials. It was convened by the Global Forum on Agricultural Research (GFAR) and the Forum for the Americas on Agricultural Research and Technology Development (FORAGRO). This consultation will inform presentations at the Global Conference on Agricultural Research for Development (GCARD) in March 2010 in Montpellier, France.

### Open information access

The Meeting of the Inter-American Association of Librarians and Specialists in Agricultural Information (RIBDA) was organised by the Inter-American Association of Librarians and Specialists in Agricultural Information (AIBDA) in Lima, Peru, under the theme: “Open Access Innovations in Agricultural and Environmental Information”. CARDI Librarian, Ms. Opal Morris, attended.

This meeting was followed by the Coherence in Information for Agricultural Research for Development (CIARD) Advocacy Consultation for Latin America and the Caribbean, organised by CGIAR, FAO, FORAGRO/IICA and IAALD. CARDI is seeking to deepen its relations with CIARD to help realise the CIARD mission “to make public domain agricultural research information and knowledge truly accessible to all.”

## Caribbean

### C@ribnet and cyber security

Grenada hosted the Caribbean Knowledge and Learning Network (CKLN) meeting on Raising Awareness on C@ribNET and Cyber Security issues, in October. The proposed C@ribNET will be an electronic learning network connected to similar networks in the Americas, Europe and Asia. CKLN will be funded by the European Union (EU) and implemented by the Analysys Mason Group, a global company headquartered in London,

# CARDI explores new opportunities

with a Caribbean office in Jamaica. CARDI was represented by Bruce Lauckner, Head, Strategic Alliances and IT Consultant, Roger Moe. Caribbean regional institutions can benefit from this initiative through improved financial management, file sharing, development of central email systems, use of video conferencing, and in use of diagnostic tools for research and development.

## 🌱 *Agri-food value chain*

Barbados hosted a Caribbean Agri-Food Value Chain Upgrading Strategy and Action Planning Workshop; and also a UNCTAD and CDB workshop on Factoring/Receivable Discounting: a Financing Tool for Agriculture Sector Development. Dr. Ardon Iton, Head, Marketing Unit, participated, presenting on the “Market Driven Industry Development Plan” at the former which was supported by the Food and Agriculture Organisation (FAO).

Participants were updated on the status of the CARICOM Food Security Project, shared experiences and identified potential roles of various organisations. The latter meeting agreed that apart from sourcing and securing funds for undertaking this method of financing agriculture in the Caribbean, education of farmers and other groups, and creating an enabling legal environment was necessary.

A workshop on the Identification of Coleopteran Pests of Economic Importance in Barbados in September included CARDI Jamaica’s Rasheeda Hall and other Caribbean participants who work in plant/crop protection. It aimed “to provide training and experience to participants in the identification of beetles that occur in the West Indies and that are of quarantine concern for potential invasion in the Caribbean Basin”. Participants received a list of taxonomists from across the world who may assist in identifying insects, classified specimens, and identify the larvae - important to persons working in plant quarantine departments. The workshop, facilitated by Dr. Ronald Cave and Mr. Bradley Cooper from the University of Florida, was coordinated and hosted by USDA/APHIS in collaboration with IICA and others.

## 🌱 *Small ruminants*

Mr. Norman Gibson travelled to Tobago in October 2009 and visited the Technical Office at the Tobago House of Assembly (THA) to review and agree on the CARDI/THA Small Ruminant Work Programme in Tobago which concentrates on breeds and breeding systems; feeds and feeding systems and production and productivity. This visit was followed later in the month by a further visit to Tobago by Country Representative (Ag.), Dr. Janet Lawrence, who completed discussions with THA on the other aspects of the CARDI/THA Work Programme.

## 🌱 *Technology & rural development*

The Week of Agriculture and Rural Life of the Americas took place in Jamaica in October, with delegates from more than 30 countries including CARDI’s Chairman of the Board of Governors, the Honourable Ezekiel Joseph, Chairman of the Board of Directors, Dr. Richard Harrison, Executive Director, Dr. Arlington Chesney and Country Representative (Ag.), Ms. Dionne Clarke-Harris. It included the Fifth Ministerial Meeting and the Fifteenth Regular Meeting of the Inter-American Board of Agriculture (IABA), where discussions were held on the report, “The Outlook for Agriculture and Rural Development in the Caribbean 2009” prepared jointly by FAO, ECLAC and IICA. Recommendations coming from this report include earmarking resources for research and development.

## 🌱 *Electronic monitoring*

Electronic systems for monitoring and evaluating projects were set up in Belize by Mr. Christian Johnson, Graduate Assistant in the CARDI Resource Mobilisation, Monitoring and Evaluation Unit. He helped Mr. Anil Sinha Country Representative, Mr. Hector Reyes (Graduate Assistant), and Dr. Kathy Dalip (Entomologist) build schedules and update projects using selected software. Mr. Johnson also made field visits which assisted his understanding and appreciation of ongoing projects.

## Stuffed Breadfruit

### You will need:

1 firm breadfruit  
 2 cups minced meat  
 1 tomato  
 1 onion  
 Pepper  
 Celery  
 Green Seasoning

### Method

1. Sauté minced meat for a few minutes. Add chopped tomatoes, onions, celery and other seasonings.
2. Boil breadfruit (whole) for 15 minutes in salted water.
3. Remove breadfruit stem by cutting a thin slice off the top of the breadfruit and retain. Remove the core of the breadfruit; be sure to leave a thick wall of the fruit.
4. Stuff the breadfruit with the meat and replace the stem, skewer into place with toothpicks.
5. Bake the breadfruit at 300 °F for 45-50 minutes in a greased baking pan.

Adapted from Recipe Booklet (Caribbean Agribusiness Week 1999 supported by CARDI, CTA, IICA and the Caribbean Culinary Federation).



## What's It Called?

### Breadfruit (*Artocarpus altilis*)

**Common names:** Frutapan and Fruta de pan

Breadfruit is an important introduced staple food in the Caribbean, where it is mainly grown as a subsistence crop. It is high in energy from carbohydrates and low in fat. It is a good source of dietary fiber, potassium, calcium and magnesium with small amounts of thiamin, riboflavin, niacin and iron. Some varieties also contain small amounts of folic acid.

The fruit of this versatile crop can be cooked and eaten at all stages of maturity. The fresh fruit can be baked, boiled, roasted or steamed. Ecologically the breadfruit has been used in watershed protection and agroforestry systems.



## CARDI awards best CXC agriculture student

Future Youths  
Youth In Agriculture

*Joshua Hammichand* of St Joseph High School, Guyana received the 2009 CARDI Award for the Best Agricultural Science Student in the Caribbean Examinations Council (CXC) in the Region.



The CARDI Award - a certificate and US\$250 was presented at Hyde Park, Timheri, Guyana during ceremonies to mark the formal

launch of Guayan's Agriculture Month and the Commissioning of the Doppler Weather Radar.

Minister of Agriculture, Guyana, the Honourable Robert Persaud, presented the award which focuses on outstanding performance in the CXC examinations. Among the criteria for the award are: Grade 1 in Agricultural Science; Grade 1 or Grade II in English A and Mathematics; Grade I or II in two other CSEC General or Technical Subjects.

Congratulating Hammichand, Dr Arlington Chesney, Executive Director of CARDI, defined CARDI's interest in encouraging youth to engage in agriculture as a business, driven by technology, informatics and knowledge. He expressed the hope that Hammichand's achievement would encourage more students to opt to study agriculture at the undergraduate level. He recognised the important role that the winner's parents, school and country played in this achievement.

## Press release: St. Lucia on alert

St. Lucian officials have restricted movement of plant material from St. Lucian districts, Forestierre and Combat, following suspected infection by the very dangerous Black Sigatoka leaf spot disease of bananas. Black Sigatoka (a fungal disease) was recently confirmed in St. Vincent.

It has already been identified in Florida, Cuba, the Dominican Republic, Haiti, Jamaica, Bahamas, Grenada and Trinidad. It is more aggressive than the common yellow leaf spot disease and can cause great harm to the banana industry as it spreads easily - by human activity and wind - and diminishes production from infected plants.

Industry officials are therefore concerned about the movement of plant material from the suspicious areas.

Residents and farmers are being asked to restrict the movement of all plant material from these restricted areas.

The St Lucian Ministry of Agriculture is spraying and destroying potentially infected plant material. It has also reactivated the stakeholder task force on Black Sigatoka in order to develop a well coordinated and unified approach to eradicating the disease. It is also working with CIRAD in Guadeloupe and the National Plant Protection Laboratory of France for diagnosis.

The Caribbean public is reminded of existing strict control on all plant material being imported particularly from known infested countries.



# List of acronyms

|         |   |          |  |
|---------|---|----------|--|
| ACP     | African, Caribbean and Pacific Group of States                                | CLAYUCA  | The Latin American and Caribbean Consortium to Support Research and Development of Cassava |
| AIBDA   | American Association of Librarians and Information Specialists in Agriculture | COTED    | Council for Trade and Economic Development   |
| APHIS   | Animal and Plant Health Inspection Service                                    | CRA      | Caribbean Rice Association   |
| ASTT    | Agricultural Society of Trinidad and Tobago                                   | CSEC     | Caribbean Secondary Education Certificate  |
| BADMC   | Barbados Agricultural Development and Marketing Corporation                   | CTA      | Technical Centre for Agricultural and Rural Cooperation (EU/ACP)                           |
| BAS     | Barbados Agricultural Society   | CXC      | Caribbean Examinations Council   |
| CAAS    | Chinese Academy of Agricultural Sciences                                      | ECLAC    | Economic Commission for Latin America and the Caribbean                                    |
| CABA    | Caribbean Agri-business Association   | EU       | European Union   |
| CaFAN   | Caribbean Farmers Network   | FAO      | Food and Agriculture Organisation of the United Nations                                    |
| CARDI   | Caribbean Agricultural Research and Development Institute                     | FAVACA   | Florida Association for Volunteer Action in the Caribbean and the Americas                 |
| CARICOM | Caribbean Community   | FORAGRO  | Forum for the Americas on Agricultural Research and Technology Development                 |
| CATIE   | Tropical Agricultural Research and Education Institute (Costa Rica)           | GCARD    | Global Conference on Agricultural Research for Development                                 |
| CCCCC   | Caribbean Community Climate Change Centre                                     | GFAR     | Global Forum on Agricultural Research  |
| CCS     | Caribbean Community Secretariat   | IAALD    | International Association of Agricultural Information Specialists                          |
| CDB     | Caribbean Development Bank  | IABA     | Inter-American Board of Agriculture  |
| CFC     | Common Fund for Commodities   | ICT      | Information and Communication Technology   |
| CFNI    | Caribbean Food and Nutrition Institute  | IICA     | Inter American Institute for Co-operation on Agriculture                                   |
| CGIAR   | Consultative Group on International Agricultural Research                     | IFDC     | International Fertilizer Development Center  |
| CIAT    | International Centre for Tropical Agriculture (Colombia)                      | NAMDEVCO | National Agricultural Marketing and Development Corporation                                |
| CIARD   | Coherence in Information for Agricultural Research for Development            | NRI      | Natural Resources Institute (UK)   |
| CIMH    | Caribbean Institute of Meteorology and Hydrology                              | NGO      | Non Governmental Organisation  |
| CIP     | International Potato Centre (Peru)  | OECS     | Organisation of Eastern Caribbean States   |
| CIRAD   | Centre for Cooperation on Agricultural Research for Development (France)      | RIBDA    | Reunion Interamericana de Bibliotecarios y Documentalistas Agricolas                       |
| CKLN    | Caribbean Knowledge and Learning Network                                      | SFC      | Sugarcane Feeds Center   |
|         |   | SRC      | Scientific Research Council (Jamaica)  |
|         |   | ST&I     | Science Technology and Innovation  |
|         |   | THA      | Tobago House of Assembly   |
|         |   | UF       | University of Florida  |
|         |   | UNCTAD   | United Nations Conference on Trade and Development   |
|         |   | UPR      | University of Puerto Rico  |
|         |   | USDA     | United States Department of Agriculture  |
|         |   | UWI      | University of the West Indies  |

## CARDI Events

26-27 April

**CARICOM Brazil Summit  
Brazil**

4 May

**Meeting on Caribbean Strategy for Agricultural  
Research and Development  
Trinidad and Tobago**

31 May – 4 June

**CTA/RADA Working with Farmer Innovators  
Workshop  
Jamaica**



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