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### **DIRECTOR GENERAL'S REPORT ON THE PROGRESS MADE IN STRENGTHENING IICA-CARDI RELATIONS**

**San Jose, Costa Rica  
October 2012**



## **IICA-CARDI COOPERATION AGREEMENT 2011-2012**

### **Introduction**

The IICA-CARDI institutional collaboration started in 1989 when both institutions signed a five-year cooperative agreement to “promote agricultural research and development in the Caribbean”. Both organizations realized that a collaborative effort could provide a more effective contribution to agricultural research and development in their common Member States than could otherwise be achieved by the separate and independent action of each party. To date, five agreements for collaboration have been signed by IICA and CARDI, the most recent one being in 2010. This new agreement seeks to support the Region’s agricultural and rural sectors, consistent with the Jagdeo Initiative and the Liliendaal Declaration mandated in July 2009 by the Conference of Heads of Government of CARICOM. These mandates recognize agriculture as a major economic driver in the regional development agenda, particularly with respect to ameliorating food insecurity, poverty and hunger and increasing the sector’s competitiveness.

Both IICA and CARDI recognize the enormous challenges that the Caribbean faces, particularly with regard to increasing the agricultural sector’s productivity and competitiveness, enhancing food security, improving the management of natural resources and understanding the implications of climate change and natural disasters. A major threat faced by the Region is its growing dependence on imported food and the limited capacity of small farmers to supply the domestic market needs and compete in external markets.

In recognition of the need to work jointly to address some priorities of the Region’s agricultural sector, IICA and CARDI have developed a collaborative program for the period 2011-2014, to provide technical cooperation and assistance to the region.

This report provides an update on the status of implementation of the IICA-CARDI work programme. For ease of reference, the format of the report uses the same framework as that of the program, which indicates the main areas in which joint projects and actions are executed.

### **1. Facilitate CARDI –Latin Institutional Linkages**

There has been no professional attachment programme to date.

### **2. Establish Network System for Science, Technology and Innovation**

Technology and Innovation Specialist, Mr. Humberto Gomez has been appointed under the PIPC and is based in the Trinidad and Tobago Office of IICA. He has been interfacing closely with CARDI on the implementation of the IICA/CARDI programme, the institutional response to the Black Sigatoka disease and the Technology and Innovation inputs for the upcoming Intra-ACP Agricultural Project.

### **3. Develop synergies with ongoing Projects**

- a. *IICA – CARDI Collaborations.* IICA and CARDI have collaborated through CTA projects, such as, Agricultural Round Table (CARAPN) and the Regional Media Awards during the Caribbean Week of Agriculture
- b. *CFC Funded Projects (Haiti).* IICA continues to collaborate with CARDI in the implementation of two (2) CFC funded projects:- (1) Increased Production of Root and Tuber crops in the Caribbean through the Introduction of Improved Marketing and Production Technologies and (2) Increased Production of Vegetables and Herbs through the use of Protected Agriculture in the Caribbean. To date CARDI has disbursed to IICA US\$116,000 and US\$95,000 respectively.
- c. *Intra-ACP Agriculture Program (EU funded).* IICA is the Implementing Partner (IP) for this programme which has three (3) components:
  - i. Policy managed by CARICOM Secretariat
  - ii. Technology managed by CARDI
  - iii. AgriBusiness managed by IICA

The total cost of the Caribbean Component of the Programme is € 8.6m

### **4. IICA Program on the Competitive Fund**

CARDI is involved in two projects, namely Small Ruminants and Roots and Tubers that are managed by IICA Representatives in Jamaica and Trinidad and Tobago, respectively. Unfortunately, CARDI was made aware rather late of the second call of this facility and, as such, CARDI is not involved in any of the initiatives for 2012. Recently, the representative of IICA, ECS contacted CARDI about a project on Climate Change. CARDI agreed to work with IICA in this area.

### **5. Current IICA-CARDI Agreement**

This programme, which is developed in accordance with Resolution 464 of the IABA of October 2010, includes six components. A detailed annotation of progress for each component is presented in **Annex I**.

The allocation from IICA to CARDI for these joint projects remains at US\$200,000 per year and is managed by a Steering Committee with representatives from both CARDI and IICA. The

distribution of the allocation of the US\$800,000 for the period 2010-2013, in addition to the amount of \$104,785 is detailed as follows:

<b>Project</b>	<b>Amount(US\$)</b>
Herbs, condiments and beverages	103,603
Protected Agriculture	117,129
Root Crops(Starches)	173,208
Livestock	177,124
Knowledge sharing, Coordination and Management	309,171
Cereal and Grain Legumes	24,550
<b>TOTAL</b>	<b>US\$ 904,785</b>

To date CARDI has received US\$400,000 for the period 2010 -2011 and has received partial payment of US\$100,000 for 2012 as per the IICA CARDI Agreement.

#### **6. Access External Resources for Joint Projects (Resolution 464 of IABA)**

There has been no significant activity in this area. A project proposal entitled “Mexican Government Support to Protected Agriculture” was prepared, but has not been fully developed.

### **ANNEX I**

#### **CARDI COOPERATIVE AGREEMENT - PROJECTS AND THEIR CONTRIBUTIONS (2011-2012)**

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
<b><i>A. Herbs, Condiments &amp; Beverages</i></b>		
Jamaica	Technical manual of agronomic and post-harvest practices of five herbal crops (lemongrass, spearmint, peppermint, cerasee, sorrel) in preparation. To date the nursery, agronomy and postharvest sections in the manual have been completed. The other sections - the history, origin and geographic distribution, botany and nutrition content and uses – would be completed during the year.	Direct - Producers, Agro-processors Indirect - Regional Ministries of Agriculture, Scientific Research Council, Jamaica

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
St. Lucia	7,000 seed nuts of the Red Palm Mite-tolerant Malayan dwarf coconut were produced. A total of 1,036 seedlings were distributed to 20 farmers (equivalent to 13 hectares). Coconut production manual produced and used to train farmers. Project successfully completed and follow-up scaling up transferred to the Ministry of Agriculture. Also in St Lucia, the Cooperative Programme is responding to the high demand for hot peppers for processing. A Fact Sheet on the production of hot pepper for processing was produced and circulated to hot pepper seedling producers and hot pepper farmers. A hot pepper demonstration plot containing three varieties of hot peppers has been established at the CARDI Field Station for the benefit of farmers. CARDI has collaborated with vegetable seedling producer Mr. Francois Henry in using his commercial seedling nursery facility for the production of hot pepper seedlings for sale to farmers	Direct - Farmers Indirect - Ministry of Agriculture, agro-processors
Trinidad & Tobago	CARDI's on-going research is the optimization of crop nutrition and cost of production (in collaboration with IICA and Ministry of Agriculture). Results of nitrogen nutrition studies have shown that the rate of nitrogen fertilizer applied by farmers for Shado beni production (260 lb/ac) could be reduced by 40% or compost could be used without reducing numbers or weight of leaves. Estimation of profitability of Shado beni production from nine farmers showed an average gross margin of TT\$1.34/lb.	Direct - Producers Indirect - Ministry of Food Production, Land and Marine Resources, exporters, University of West Indies, St. Augustine.
	Two 'varieties' of lemongrass (St. Lucia and Trinidad) were planted for biomass collection for processing into teas (with TTABA). Nursery multiplication of the local variety has commenced (for establishing 2,000 acres on	Direct - Producers, Trinidad & Tobago Agri-business Association, Agro-processors (T&T, Jamaica) Indirect - Ministry of Food Production, Land and Marine

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
	CARONI farm lands).Having established biomass production the next actions are to establish the drying process and the oil content of the grass. Discussions are ongoing with a private processor at Toco for the drying and the SRC in Jamaica has been identified to conduct the oil content analysis.	Resources
Regional	Seed production and multiplication from pure seeds of purified and stabilized landraces, to be distributed to producers and Ministries of Agriculture for conservation. Descriptors of selected landraces developed. The Moruga Red landrace has moved into commercial production as the variety of choice by Trinidad and Tobago farmers and seed production efforts have intensified. Studies to determine the plant population density that produce the highest yields of marketable berries from the Moruga Red have identified five population densities. In 2012 at least two of these plant population densities will be evaluated in large scale field trials with a view to comparing their cost:benefit ratios and concluding the search for the optimal production systems for the hot pepper landrace, Moruga Red.	Direct - Producers Indirect - Regional Ministries of Agriculture for conservation and multiplication, Exporters and Agro-Processors
<b><i>B. Protected Agriculture</i></b>		
Dominica	This project has now been transferred (2012) to St Lucia as part of the PA project Evaluation of appropriate undercover structures, materials and technology to determine optimal crop productivity Monitoring the performance of structures to improve design there for maximum effectiveness... In 2011 the evaluations were completed in Dominica. The project identified a local growing medium - spent bay leaves form the bay oil industry - for use	Direct - Producers, Youth, Hospitality industry Indirect - Ministry of Agriculture

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
	<p>in pot culture. It promoted early fruiting. The evaluation of roof coverings showed that the clear plastic gave higher yields. These results were communicated to PA producers, including the youth during two one-week training sessions.</p>	
Jamaica	<p>Evaluation of two production systems for mass production of disease-free planting materials for sweet potato. Technology, particularly ventilation to reduce heat stress, being adapted for vegetable production and cost reduction. As a follow up to the evaluation of the heat stress reduction technology, demonstration plots being established under the CFC-EU PA project will include roof shade (aluminets) modifications. Associated training sessions will include training in the various structural modifications used in the above designs including the rain water harvesting and automated solar-powered fertigation systems. Some 200 farmers are being targeted for training activities.</p>	<p>Direct - Christiana Potato Growers Cooperative Association, Ministry of Agriculture Indirect - all PA growers, agro-processors, marketers</p>
Montserrat	<p>Agricultural activities in Montserrat are seriously constrained by volcanic ash and acid rain. Therefore, the use of PA in the form of simple pvc hoop houses to demonstrate sweet potato production, was embarked upon in 2011. The results over two cropping seasons showed higher yields under the hoop houses than in the open field. Following the communication of the results to producers and the Ministry of Agriculture, the Ministry funded three hoop houses for backyard gardeners.</p>	<p>Direct - Producers, including backyard gardeners Indirect - Ministry of Agriculture</p>



<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
St. Kitts & Nevis	Production & post-harvest technologies to be demonstrated to all PA farmers and Department of Agriculture. PA structure being installed and building local capacity in greenhouse construction. The PA structure incorporating the capture and storage of water runoff from the roof was completed in 2011. It has since been used for demonstrating PA production system and for two training sessions for producers	Direct - PA Producers, Agro-processors, Hospitality industry Indirect - Ministry Agriculture
St. Kitts & Nevis	Water catchment is being installed for existing PA structure and demonstration of water harvesting to producers. The 143,000-gallon polyethylene-lined water catchment was also completed in 2011 to demonstrate another rain water harvesting technique. The catchment complements the PA structure above as demonstration tool for farmers.	Direct - PA Producers Indirect - Ministry Agriculture
St. Lucia	Trials on cucumber and sweet pepper production indicate doubling of output from the PA system as opposed to open field production. The work is continuing and a productivity and investment profile to be developed. This project suffered a severe setback when Hurricane Tomas destroyed the infrastructure at the CARDI Station in November 2010. The project was resuscitated later in 2011 but insufficient data have been collected. Therefore, the productivity and investment profile development has been delayed to later in the 2012-2013 season	Direct - Producers, Agro-processors, Hospitality industry Indirect - Ministry Agriculture, Exporters (fresh produce)

Technical Area/ Country	Results and Contributions	Beneficiaries
<b><i>C. Root Crops (Starches)</i></b>		
Antigua & Barbuda	42 accessions of sweet potato were collected and characterized. Validation done on first season production technologies with respect to the performance of nine selected market tested sweet potato varieties. Effects of seasonal planting also being evaluated. The conclusions from the two-year evaluations were that varieties, planting season and agro-ecological zones influenced yield. “Catch Me” and “Hurricane” gave highest marketable yields. Highest marketable yields were also obtained from the January and the October plantings compared with April and July plantings; and crops at Cades Bay and Green Castle yielded higher than at Betty’s Hope. The effects of irrigation on sweet potato production are still under evaluation.	Direct - Ministry of Agriculture, farmers (after validation) Indirect - Marketers, Agro-processors
Barbados	Nursery for cassava established in collaboration with National Union of Farmers. Capacity building provided in improved production management. The one acre cassava nursery established in collaboration with the NUF and MoA provided 6 NUF farmers with 6,550 cuttings to establish approximately 7 acres of the crop on their holdings. One closely monitored farmer who used recommended ‘best practices’ and obtained 74% more yield (20,000 lb/ac) than the national average will be used a model for cassava production.	Direct - Producers, Ministry of Agriculture
Grenada	In an effort to boost RT production in Grenada seven sweet potato varieties known to have performed well in other parts of the Region were introduced from St Vincent and the Grenadines. The initial observations on establishment and yield showed that all seven adapted and produced tubers weighing on	Direct – Farmers and Ministry of Agriculture Indirect - Marketers, Agro-processors

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
	average 230 g. They will next be subjected to rigorous evaluation before planting materials are produced and distributed to farmers.	
Jamaica	Commercial sweet potato plot established to identify and transfer low resource, cost effective postharvest techniques to farmers. Draft post-harvest technology packs completed. The tech packs include (1) PowerPoint training aid – completed, (2) scientific paper - presented at the 2012 CFCS meeting in Mexico, (3) a technical bulletin – in final draft stage and (4) poster – to be prepared this year. Most notably, the contents of the tech packs have been embodied in the training packages for value chain groups and clusters under the CFC/EU project.	Direct - Christiana Potato Growers Cooperative Association, Ministry of Agriculture Indirect - all growers, agro-processors, marketers
St. Kitts & Nevis	Validation and demonstration of researched technologies (agronomy, pest management, post-harvest) for commercial production of roots and tubers has started. In 2010 studies established that the use of pheromone traps was an effective means of managing the sweet potato weevil. However, farmers have been reluctant to adopt the technology because in their view the traps attract more weevils from outlying fields. Therefore, starting 2011 biopesticides and chemical pesticides are being evaluated for their effectiveness in managing the weevils. The work is still continuing. During the same period, five agro-ecological zones deemed suitable for root crop production were mapped out to be used for the production and productivity assessments.	Direct - Producers, Ministry of Agriculture
St. Lucia	Again, Hurricane Tomas completely washed away root crop planting materials at the CARDI Station but they were re-established in 2011. As at the end of 2011, approximately	Direct - Producers Indirect - Ministry Agriculture, Agro-processors

<b>Technical Area/ Country</b>	<b>Results and Contributions</b>	<b>Beneficiaries</b>
	2,100 lbs of sweet potato slips, 1,000 lbs of sweet cassava sticks and 260 lbs of tannia plants had been produced and distributed to 47 small farmers.	
St Vincent and the Grenadines	On-farm trials in 3 different agro-ecological zones to validate researched technologies (agronomy, fertility, pest management, post-harvest) on sweet potato production, have started. At the end of the validation exercises, Rabacca and Akers were the most productive zones compared with Chateaubelair. The use of the researched technologies caused yields to increase from 2,760 to 5,800 lb/ac. Cost of production was also reduced by 4.5 cents/lb. About 130 stakeholders were exposed to benefits of the researched technologies. Additionally, a laminated flyer on sweet potato production and rodent control, subsequently mass produced through the CFC-EU project, was distributed as a communication tool.	Direct - Ministry of Agriculture, farmers Indirect - Agro-processors
Regional	Capacity building for technical staff to control Black Sigatoka in selected Caribbean Countries. Draft proposal for management of the pest completed for submission to funding sources. This project has now been subsumed by a regional initiative coordinated by FAO, IICA and CARDI and has, therefore, been removed from the IICA/CARDI Cooperative Programme. Instead, a regional project (Barbados, Dominica and St Vincent and the Grenadines) to produce quality RT planting materials, using the weaning and hardening facilities developed under the CFC-EU project, is being developed.	Direct - Ministries of Agriculture, CABI

Technical Area/ Country	Results and Contributions	Beneficiaries
<b><i>D. Livestock</i></b>		
Bahamas	Capacity building and technical assistance to sheep and goat producers to improve herd management quality meat production – Production for increased profitability of the small ruminant subsector, Alternative feeds and Pasture Management and Utilisation – provided under this project. Project subsequently ended.	Direct - Ministry of Agriculture, producers, Gladstone Road Agricultural Research Center,
Grenada	Improved housing, feeding systems and husbandry practices demonstrated on pilot farms. Goat production manual produced. The scope of this project was expanded into dairy goat production as a means of maximizing returns from small ruminant production. Therefore, building capacity in dairy goat production and value addition was the main focus in 2010 and 2011. A pilot/demo milk handling and storage room was constructed and training in goat husbandry, goat dairy production and goat cheese manufacturing was conducted for approximately 20 stakeholders.	Direct - Ministry of Agriculture, farmers Indirect - Agro-processors
Jamaica	Thirty-four crossbred goats from the CARDI small ruminant centre (Sam Motta Demonstration and Training Centre) were distributed to farmers for upgrading of their herds along with training in improved production practices. As a precursor to the expansion of the goat industry into dairy and its value added products, CARDI started breeding dairy goats at the Sam Motta DTC in 2011.	Direct - Producers, Ministry of Agriculture, Agro-processors
Regional	Forages for small ruminant production are being assessed especially in Jamaica and Trinidad and Tobago. The common forage species in both territories is the Mulato. In	Institutional strengthening of IICA and CARDI's collaborative partnerships with the Ministries of Agriculture & other stakeholder

Technical Area/ Country	Results and Contributions	Beneficiaries
	Trinidad, an extrapolation of cutting intervals x fertilizer interactions work suggests farmers can support between 34-71 % more small ruminant animals on a pasture of Mulato II than on Tanner grass. In Jamaica, animal performance assessment has produced similar weight gains (avg. 58.6 g/day) on the African star, Tifton and Pangola (P<0.284) but lower weight gains (37.6 g/day) on the Mulato grass. This needs further examination before recommendations can be made for farmers.	agencies
<b><i>E. Knowledge sharing, Coordination and Management</i></b>		
Trinidad & Tobago	Operationalization of the Transformation Plan for the agricultural sector was completed and recommendations submitted to the new Government in May 2010. The new Government incorporated elements in its Agricultural Development Plan.	Major stakeholders within the Agriculture Sector
Trinidad & Tobago	Improving the knowledge and relationship of civil society with the agricultural sector (media awards and schools' competition) completed. Improving the publics' awareness/interest and knowledge of the importance of issues affecting and opportunities available in the agricultural sector and strengthened relationship between media practitioners and agricultural institutions through the media awards competition with the theme ' <i>Agriculture – Rooting for Sustainable Development</i> '. The entries were judged on April 20, 2011 followed by an official prize giving ceremony on July 11, 2011. The judges expressed that the competition was a major improvement over the 2009/2010 competition in terms of entries received and quality of same in the competition and were pleased that food and agriculture were being given extensive	Direct - Civil society organizations, Journalists  Indirect - Ministry of Agriculture, Agriculture sector

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	coverage by the Trinidad and Tobago media. Winners' stories were placed on the IICA's website.	
Trinidad & Tobago	Documentation (manual, video) of Farmer Field School approach commenced and executed by the Ministry of Agriculture. The Consultant's Report was submitted in June 2011 along with the video recordings. The Ministry of Food Production has contracted a consultant, D. Ramroop, to use the information in the Report (technical) to develop the Manual (user friendly) which will include lessons learnt. Work on this is in progress and should be completed in September 2012. Changes/recommendations to the video have been sent to the producer and the final edited version should be completed at the end of August 2012. A date of the launch of both the manual and video, is still to be determined.	Direct - farmers, Ministries of Agriculture
Regional	Regional Soil Monograph completed and is being published for circulation. The Soil Monograph, written by Prof Nazeer Ahmad, was published in 2011 by Ian Randle Publishers with the financial support by CTA, FAO and UWI in addition to the CARDI/IICA Programme. The latest report is that it is in great demand throughout the Humid Tropical world	Direct – Students, academics Indirect - Ministries of Agriculture, Stakeholder Agencies,
Regional	Capacity of CABA members in trade related areas, facilitated by IICA. This facility was approved by the Steering Committee to enable IICA to honour a commitment and it has since been concluded.	Direct - CABA members Indirect - Ministries of Agriculture and Trade, Exporters Agencies, Processors
Regional	Co-ordination and monitoring & evaluation of the IICA-CARDI Fund completed. Implemented new reporting templates and	IICA and CARDI and collaborative partnerships with the Ministries of Agriculture, stakeholder Agencies

Technical Area/ Country	Results and Contributions	Beneficiaries
	facilitated M&E country visits by technical personnel. (Normal coordination logistics and associated documentations)	
<b><i>F. Cereals and grain legumes</i></b>		
Grenada	Work being done on the Open Pollinated (OP) yellow corn variety CARDI YC001 to expand production. The four open pollinated varieties introduced from USA performed poorly under the local conditions as all were severely affected by rust disease.	Direct - farmers, Ministries of Agriculture
Guyana	New fertilizer (urea) placed technology being tested to increase rice productivity. After seven trials two of seven test treatments – urea deep placed @ 57 kg N/ha and urea broadcast @ 57 kg N/ha – were selected as promising (over the control) in terms of paddy yield and least N cost. External funding is now being sought to upscale commercial validation of these treatments which would include the determination of the mechanization of the urea deep placement technology.	Direct - Ministry of Agriculture, farmers Indirect - Countries of region (food security)