



## *Our Vision*

To be the centre of excellence in the Caribbean for the provision and application of research and development in agriculture and rural enhancement.

## *Our Mission*

To contribute to the sustainable economic well being of Caribbean people by the generation and transfer of appropriate technology through research and development within the agricultural value chain.

[www.cardi.org](http://www.cardi.org)

## Cassava

**Cassava – a viable staple alternative for people of the Caribbean.** Trinidad and Tobago Government Information Service Ltd, 31 August, 2013

[http://www.news.gov.tt/content/cassava-%E2%80%93-viable-staple-alternative-people-caribbean#.UiXt\\_fUndGN](http://www.news.gov.tt/content/cassava-%E2%80%93-viable-staple-alternative-people-caribbean#.UiXt_fUndGN)

### Full Article

With the rising tide of a Regional food import bill hovering at over US\$2B, the consumption of root and tuber crops is assuming greater importance in the diet of all Caribbean peoples, as prices of imported carbohydrates, such as, flour and rice continue to escalate. Root and tuber crops cultivated and consumed in the Caribbean that are of significant economic and nutritional importance are cassava, sweet potato, yam, dasheen and eddoes.

CARDI, as the Region's premier agriculture research for development Agency, has been, over the past ten years, leading successful trials in increased yields in cassava, in the countries of Barbados; Belize; Dominica; Guyana; Haiti; Jamaica; Montserrat; St Lucia; St Vincent and the Grenadines; and Trinidad and Tobago. These successes have been achieved through concerted and fortuitous work in the areas of partnerships and collaborations; germplasm development, improvement and exploitation; production systems; and post-harvest technology and value added development.

In St Vincent and the Grenadines, a tissue culture laboratory was constructed. St. Vincent and the Grenadines' Prime Minister, the Honourable Dr. Ralph Gonsalves received the keys to the newly upgraded Orange Hill laboratory from CARDI's Executive Director, Dr. Arlington Chesney an official Ceremony last year. Five value-added cassava farine processing facilities were upgraded which now allows for increased local production. One worker/storage facility was renovated. This, while two hundred and fifty (250) persons were trained in all aspects of root and tuber production.

In Dominica, a hardening facility at Portsmouth was constructed. Six cassava farine processors have been supplied with processing equipment, with one cassava bread facility being supplied with food-safe equipment. On your way from the airport in Dominica, one of the must stop activities is to taste the roadside cassava bread on the Carib Reservation. Cassava is therefore synonymous with the tourist experience in Dominica so CARDI's successful work in initiating one cassava processing group, coupled with the training of more than two hundred persons in various sub-disciplines of root and tuber production augers well for the economic development of these communities.

Whilst in Barbados, there the Ministry of Agriculture is seeking to replace some twenty percent (20%) of imported grains in feeds with cassava. This is supported by CARDI who is assisting with germplasm acquisition, evaluation and utilisation. Barbados' virus testing laboratory is now fully equipped. CARDI led in the successful construction of a shade house for rapid propagation and production of plants for distribution to farmers. All with the assistance of the Common Fund for Commodities (CFC).

Collaboration with the Latin America and Caribbean Consortium to Support Cassava Research and Development (CLAYUCCA) was strengthened with the signing of a new CARDI/CLAYUCCA Memorandum of Understanding. Areas for collaboration include:

Capacity building programmes  
Introduction and exchange of germplasm  
Development of joint research and technology transfer projects

Through collaboration with the Global Crop Diversity Trust, Guyana's germplasm collections were regenerated. In St Lucia, multiplication plots (each 0.25 ha in size) have been established to be used for distribution to farmers. Germplasm banks have been established in Barbados, St Lucia and Trinidad and Tobago.

Collaborative work between CARDI and the Caribbean Industrial Research Institute (CARIRI) resulted in the design and construction of a cassava processing machine in Monsterrat. This has allowed for stakeholders to produce a range of cassava-based products, inclusive of bread.

CARDI continues to be a premier source of 'clean planting material' for cassava farmers across the Region.

## Cereals and Grains

**Rice industry heading for new heights.** Government Information Agency (GINA), Guyana, 28 August, 2013

<http://gina.gov.gy/wp/?p=14789>

### Full Article

Rice has become one of the star performers in the agriculture sector with successive record breaking production, since 2008. This industry, which is projected to reach 500,000 tonnes by year-end, however has had a very modest beginning. That the industry is flourishing today, is largely due to improved farming techniques, better seed varieties, and interventions by the Administration, which have lead to improved yield per hectare and more land being brought under cultivation.

#### *Humble beginnings*

Rice cultivation in Guyana is over one hundred years old. In the very early days, the crop was planted mainly to complement the diet of the slaves. Not long after, some of the African slaves began cultivating small plots in their farming areas on the plantations.

General Manager of the Guyana Rice Development Board (GRDB) Jagnarine Singh said that rice production in a consequential way started in the early 1900s, propelled by the indentured immigrants, who came to Guyana, with knowledge of rice planting and of the culture of the crop.

They qualified that the first rice export from this country was in 1903 and that by 1908, the country had become a net exporter of rice. Growth in rice export in the early 1900s is credited to the First World War, but following that, exports declined and production did not rise again until the Second World War in 1936.

The early days of rice production in Guyana were characterised by instability, lack of organisation and economic pricing.

“During that period, we had a lot of people buying and selling rice, but we had lots of problems with pricing, the actual price received for the rice was not passed on to the producers,” Singh said.

To stop this exploitation, the then British Government established the British Guiana Rice Marketing Board (BGRMB) which purchased all the country’s milled rice directly from the producers and this served to stabilise prices through Government control of the prices paid to the producers and charged to the consumers. The rice was sold to the British Islands in the Caribbean (the West Indies Federation) but the industry remained unstable, even after Guyana gained independence in 1966.

### *Post- Independence production*

There were lots of changes in the sector after the country gained independence from the British. Among those were structural adjustments, which the then Government, the People’s National Congress said were aimed at rehabilitating and modernising the industry. It took control of all the rice mills in the country and the British Guiana Rice Marketing Board. Over the years the board was changed to the British Guyana Rice Board and then to the Guyana Rice Board (GRB). Then in 1985, the decision was taken to split this board into four entities – the National Paddy and Rice Grading Center (NPRGC), with authority over paddy and rice grading, the Guyana Rice Export Board (GREB), which had responsibility for exports, and the Guyana Rice Marketing and Milling Authority (GRMMA), which owned all the rice mills and wharf facilities. Research was given to National Agricultural Research Institute (NARI.)

Singh said that despite all these efforts, by 1990, Guyana had the lowest rice production. The country’s total rice production was exactly 93,444 tonnes and export for that year was 50, 000 tonnes. This was because farmers were not getting input on a timely basis and there weren’t adequate enabling mechanisms for growing rice, including drainage and irrigation interventions. Singh said the there was little effort in this regard, in most parts of the country, and in fact maintenance of infrastructure was neglected.

There were also issues with the price paid to farmers. This was significantly reduced and there was a period where there were protests for support with bags and twines, at the main rice locations. In the end, farmers started to leave the rice cultivation in the hundreds, many sold their land and migrated, whilst others began cultivating other crops.

### *Renewed interest in rice*

Following the change in Government in 1992, when the PPPC came into office, there were significant investments made in the industry. Huge sums were spent on drainage and irrigation (D & I), as the new government implemented an aggressive plan for upgrading and rehabilitating structures countrywide.

Whilst Government was spending a lot of money in D&I, it was also looking at research programmes. The assistance of Indian scientists was procured in developing new rice varieties, with greater yield. The Government merged the four entities into the GRDB which has worked and implemented programmes that have supported and guided successful farmers in the application of new technology. Being able to secure new markets with better prices also boosted production and by 1994-1995, the growth of the industry went upwards.

Production was recorded at 365,469 metric tonnes in 1999, 361,527 metric tonnes, in 2010, 402,000 tonnes in 2011 and 422,000 tonnes for 2012. Region Five continues to be the leading region in production, followed by Regions 6, 2, 3 and 4.

### *Exports*

Prior to 2010, Europe was the largest importer of Guyana's rice but by 2012, following an agreement between Former President of Guyana Bharrat Jagdeo and Venezuelan President Hugo Chavez, 66 percent of Guyana's rice paddy goes to Venezuela. The pull factor is that Venezuela is buying the rice at better prices.

For 2013, Guyana will supply 210,000 tonnes of rice and paddy to Venezuela under an agreement sealed in May.

Guyana though continues to satisfy its traditional market to Europe and Caricom, of which Jamaica is the main market.

The country also continues to send small amounts of rice to Trinidad and Tobago, some to Latin America including Panama and Portugal, and is currently examining exporting more to Panama, Dominica and Haiti.

Guyana exported about 330,000 tonnes of rice in 2011 and, in 2012, 350,000 tonnes.

### *Moving forward*

The country is at present exploring production of rice varieties that will create more value added opportunities for Guyana's rice farmers and open more lucrative niche markets.

In 2012, Guyana introduced its first crop of aromatic rice developed at the rice research centre. Once established on the Guyana market, the aim is to pursue exports of this aromatic brand as a niche product in the Caribbean and European markets.

At present also a salt-resistant variety is being developed and an upland rice variety is being produced at Santa Fe, Region Nine that is intended to satisfy the local Region 9 market, that should cause rice prices to drop in that region since rice will no longer have to be transported from the coastland. In addition, this rice will also be exported to Brazil.

While farmers in some areas have been affected by the paddy bug, the Agriculture Ministry has been making timely interventions to assist them to address the infestation. Recently it rolled out a \$25M plan to help affected farmers.

### *Projection*

Since 2008, rice production has been on the rise with every year having been another record year. The first rice crop for 2013 has officially ended with a record yield of 263,528 metric tonnes of rice from a total of 405,428 metric tonnes of paddy, significantly surpassing the target of 206,000 tonnes that was expected.

If this trend continues, then Guyana is headed for a million tonnes by 2015, the researchers at the GRDB have predicted.

**Queensland science reveals genetic treasures in Africa's most versatile crop, sorghum.** University of Queensland, Queensland Alliance for Agriculture and Food Innovation Media Release, 28 August 2013  
<http://www.qaafi.uq.edu.au/sorghum-wild>

## Full Article

A consortium of Australian and Chinese researchers has discovered that sorghum, Africa's most widespread crop, contains vastly more genetic variation than previously realised.

In a scientific paper published in *Nature Communications* this week, researchers from The University of Queensland, the Queensland Department of Agriculture, Fisheries and Forestry (DAFF) and BGI (China), announced they had mapped the entire genome sequence in 44 sorghum lines.

Funded by the Australian Research Council (ARC) and Australian farmers through the Grains Research and Development Corporation (GRDC), the project is part of efforts to improve drought tolerance and nutritional quality in sorghum.

Due to its better adaptation to heat and drought, sorghum is expected to play an increasingly important role in feeding the world's growing population.

While sorghum is a staple cereal crop for 500 million resource-poor people in Africa and Asia, and an important animal feed and biofuel crop in the developed world, agriculture faces enormous challenges to meet world food demand in the face of climate change, land degradation and increasing water scarcity.

The study's lead author, DAFF's Dr Emma Mace (above centre), said the sorghum sequence information they had generated would provide the best genomic information to date on this important crop.

"What has been poorly understood, until now," Dr Mace said, "is the nature of genetic diversity at the genomic sequence level."

Armed with this data, researchers can now examine variation in specific genes and use this information to breed improved sorghum varieties.

"Our study revealed a dramatic reduction in the diversity of modern varieties compared to the wild ancestors," Dr Mace said.

"It really highlights the exciting opportunities sorghum plant breeders have to make use of previously untapped variation."

This resource is not just important for sorghum; cereal crops share most of their genes in common so an understanding of drought mechanisms in one crop can be used to improve drought adaptation in other crops such as wheat and rice.

The results of this study have already had an impact on UQ research, allowing scientists to focus on improving the quality and drought resistance of sorghum.

One of the study's authors, UQ's Professor Ian Godwin (above right), leads a research group focused on improving the quality of sorghum for human and animal nutrition.

Data from this study contributed to research published in Nature Communications earlier this year in which the agriculture scientists identified a gene which improves the food value of sorghum.

"Having access to these sequences makes it much easier to understand difficult traits such as grain quality," Professor Godwin said.

"While an important staple, sorghum's low digestibility presents a fundamental challenge for its utility as a food source and this research could provide new options for securing food supplies in Africa and Asia."

[Dr David Jordan](#), from UQ's Queensland Alliance for Agriculture and Food Innovation (QAAFI), leads Australia's national sorghum genetic improvement program.

He is using this information to breed improved sorghum varieties for Australia and Africa.

"Five years ago, we would not have believed that we would have access to this sort of detailed understanding of sorghum genes," Dr Jordan said.

"Already we are using the information in our GRDC funded pre-breeding program and it will play a key part in a new project to identify genes for drought tolerance funded by the Bill & Melinda Gates Foundation."

**Research paper:** Mace ES, Tai S, Gilding EK, Li Y, Prentis PJ, Bian L, Campbell BC, Hu W, Innes DJ, Han X, Cruickshank A, Dai C, Frère C, Zhang H, Hunt CH, Wang X, Shatte T, Wang M, Su Z, Li J, Lin X, Godwin ID, Jordan DR, Wang J (2013). Whole genome resequencing reveals untapped genetic potential in Africa's indigenous cereal crop sorghum. *Nature Communications*. 27 August 2013

<http://www.nature.com/ncomms/2013/130827/ncomms3320/full/ncomms3320.html>

<http://www.nature.com/ncomms/2013/130827/ncomms3320/pdf/ncomms3320.pdf>

## Avocado: Pests - Ambrosia beetles

**U.S. tests experimental foam to take on avocado tree pest.** Fresh Fruit Portal, 27 August 2013  
<http://www.freshfruitportal.com/2013/08/27/u-s-tests-experimental-foam-to-take-on-avocado-tree-pest/?country=trinidad%20and%20tobago>

### Full Article

A foam originally used to destroy termites is now under evaluation by U.S. scientists for use in combating a pest that threatens the country's US\$322 million avocado crop.

Researchers from the United States Department of Agriculture (USDA) are experimenting with the foam containing insect-killing fungi *Metarhizium*, *Isaria*, and *Beauveria* in orchard trials against ambrosia beetles.

Undertaken by the department's Agricultural Research Service (ARS), the trials follow lab studies that confirmed the ability of these fungi to infect and kill the beetles. An ARS release said more than 95% of the beetles exposed to the fungi died.

If successful, the foam could be an alternative to insecticides, which the National Center for Agricultural Utilization Research's Alejandro Rooney said may not be an effective disease management approach in this particular case.

The release highlighted the difficulties currently facing avocado growers in the country, with the redbay ambrosia beetle in Miami-Dade County, Florida and the polyphagous shot hole borer in California, particularly in the Los Angeles County.

Both beetles tunnel into the sapwood of avocado trees, inoculating them with pathogenic fungi in the process.

## Crop Protection

**Crop conference maps out the future of crop protection** by Farming UK, 30 August, 2013

[http://www.farminguk.com/News/Crop-conference-maps-out-the-future-of-crop-protection\\_26318.html](http://www.farminguk.com/News/Crop-conference-maps-out-the-future-of-crop-protection_26318.html)

### Full Article

With less than a month to go until the AHDB Crop Research Conference, there are still places left at this essential event for anyone involved with the science behind crop protection.

With three sessions chaired by leading scientists, delegates will get an early look at the next generation of crop protection methods and have the chance to shape future research priorities.

Entitled ‘Knowing your enemy – the future of crop protection’, the landmark conference features some of the latest research on insect pests, weeds and crop diseases. The event will build on AHDB’s longstanding commitment to applied research and link it to the government’s new Agri-Tech Strategy.

Two major issues prompted AHDB to host this event; pesticide resistance and product restrictions due to environmental concerns. Dr Susannah Bolton, Head of Research and Knowledge Transfer at HGCA, AHDB’s cereals and oilseed division, is excited that recent scientific advances will provide ways to overcome these challenges.

“The conference has three sessions, each taking a slightly different approach to understanding pests, weeds and diseases. Also, there are twenty-four posters from postgraduate scientists who will be instrumental in delivering top-class crop protection research in the years ahead,” she said.

The first session, Advances in Genomics, looks at making the most of technical advances that allow faster gene sequencing. This includes working with plants’ innate defence systems, as well as rapid ‘diagnostics’ to identify and control crop diseases before they cause serious damage.

“Our ability to use genomes of pests and pathogens to indicate potential novel routes for control is expanding rapidly and will play an increasingly important role in practical crop production”, explained Professor Peter Gregory of East Malling Research, who chairs this session.

Session two, Population and Evolutionary Biology, addresses the development of resistance to the agrochemicals that the world relies on to produce its food. Speakers will discuss how different types of resistance can be managed, including using computer models to give early warnings and non-chemical control through more refined variety selection.

“The development of resistance to fungicides and herbicides in pathogen and weed populations is a significant challenge to the UK agricultural industry. I’m looking forward to hearing new ideas, insights and approaches in this session,” said Dr Rosie Bryson, Fungicide Team Leader at BASF, who will chair session two.

Lessons from Ecology, the final session of the conference, looks at how crop protection can take an integrated pest management approach by taking advantage of ‘beneficial’ organisms present in the air and soil. The session concludes with a presentation from Professor Allan Downie, who is leading the UK’s response to ash die-back: his presentation will highlight lessons for agriculture from the rapid emergence of this disease.

## Biotechnology

**Report Proposes Microbiology's Grand Challenge to Help Feed the World.** Science Daily, 27 August, 2013

<http://www.sciencedaily.com/releases/2013/08/130827204536.htm>

### Full Article

A greater focus on the role of microbiology in agriculture combined with new technologies can help mitigate potential food shortages associated with world population increases according to a new report from the American Academy of Microbiology.

"Microbes are essential partners in all aspects of plant physiology, but human efforts to improve plant productivity have focused solely on the plant," says Ian Sanders of University of Lausanne, chair of the colloquium that produced the report. "Optimizing the microbial communities that live in, on and around plants, can substantially reduce the need for chemical fertilizers, pesticides and herbicides."

The report, *How Microbes can Help Feed the World*, is based on the deliberation of a group of scientific experts who gathered for two days in Washington DC in December 2012 to consider a series of questions regarding how plant-microbe interactions could be employed to boost agricultural productivity in an environmentally and economically responsible way.

It starts with a startling statistic: In order to feed the estimated global population of 9 billion in the year 2050, agricultural yields will have to increase by 70-100% .

Improved understanding of plant-microbe interactions has the potential to increase crop productivity by 20% while reducing fertilizer and pesticide requirements by 20%, within 20 years, according to the report. These estimates rest on the recognition that all plants rely on microbial partners to secure nutrients, deter pathogens and resist environmental stress.

The report looks in depth at the intimate relationship between microbes and agriculture including why plants need microbes, what types of microbes they need, how they interact and the scientific challenges posed by the current state of knowledge. It then makes a series of recommendations, including greater investment in research, the taking on of one or more grand challenges such as characterization of the complete microbiome of one important crop plant, and the establishment of a formal process for moving scientific discoveries from the lab to the field.

"New technologies are making plant-microbe ecosystems easier to study and investment in this area of research could have dramatic benefits," says Marilyn Roossinck, Pennsylvania State University, who helped organize the colloquium.

## Climate Change

Climate change “driving spread of crop pests”. BBC News, 2 September 2013  
<http://www.bbc.co.uk/news/science-environment-23899019>

### Full article

Climate change is helping pests and diseases that attack crops to spread around the world, a study suggests.

Researchers from the universities of Exeter and Oxford have found crop pests are moving at an average of two miles (3km) a year.

The team said they were heading towards the north and south poles, and were establishing in areas that were once too cold for them to live in.

The research is published in the journal Nature Climate Change.

Currently, it is estimated that between 10% and 16% of the world's crops are lost to disease outbreaks. The researchers warn that rising global temperatures could make the problem worse.

Dr Dan Bebber, the lead author of the study from the University of Exeter, said: "Global food security is one of the major challenges we are going to face over the next few decades.

"We really don't want to be losing any more of our crops than is absolutely necessary to pests and pathogens."

Trade transport

To investigate the problem, the researchers looked at the records of 612 crop pests and pathogens from around the world that had been collected over the past 50 years.

These included fungi, such as wheat rust, which is devastating harvests in Africa, the Middle East and Asia; insects like the mountain pine beetle that is destroying trees in the US; as well as bacteria, viruses and microscopic nematode worms.

Each organism's distribution was different - some butterflies and insects were shifting quickly, at about 12 miles (20km) a year; other bacterium species had hardly moved. On average, however, the pests had been spreading by two miles each year since 1960.

"We detect a shift in their distribution away from the equator and towards the poles," explained Dr Bebber,

The researchers believe that the global trade in crops is mainly responsible for the movement of pests and pathogens from country to country.

However, the organisms can only take hold in new areas if the conditions are suitable, and the researchers believe that warming temperatures have enabled the creature to survive at higher latitudes.

Dr Bebber said: "The most convincing hypothesis is that global warming has caused this shift.

"One example is the Colorado potato beetle. Warming appears to have allowed it to move northwards through Europe to into Finland and Norway where the cold winters would normally knock the beetle back."

The researchers said that better information about where the pests and pathogens were and where they were moving was needed to fully assess the scale of the problem.

"We also need to protect our borders, we have to quarantine plants to reduce the chances that pests and pathogens are able to get into our agricultural systems," added Dr Bebber.

**OECS's 3rd Climate Change Seminar to focus on tourism and agriculture.** Caribbean Climate Blog, 3 September 2013.

<http://caribbeanclimateblog.com/2013/09/03/oecss-3rd-climate-change-seminar-to-focus-on-tourism-and-agriculture/>

#### **Full Article**

The Organisation of Eastern Caribbean States (OECS) Secretariat's third climate change seminar is underway (September 3 to 5) at the Royal Saint Lucian Hotel in Saint Lucia.

The annual event, which focuses on 'strategies and innovations in tourism and agriculture', will feature a Mini Festival on climate change. The OECS says the theme for this year's seminar, Climate Change, Tourism and Agriculture –Strategies and innovations for adaptation, is especially significant in light of negative impacts already being felt by these sectors. Predictions indicate that OECS Member States are likely to experience even more adverse economic impacts on their most important industries, which depend heavily on the attractiveness of natural environments; and good weather and climate.

A major output, which is expected from the seminar, is a portfolio of new ideas for strategies and innovations in agriculture and tourism that will enable these sectors to better manage climate-related risk and build resilience. The seminar is therefore organised around a number of pertinent topics, which will address both sectors, including:

1. Climate Change Impacts on Agriculture and Tourism
2. The Economic Contribution of Small Island Resources to the Tourism Sector
3. Maximizing Business Benefits through Building Resilience
4. Reducing climate related risks to agriculture and tourism
5. Sustainable Land Management and Agriculture
6. A look at adaptation measures for farming

The topics identified will be delivered by selected experts from around the region and beyond.

The OECS Secretariat estimates that some 80 participants will be in attendance at the two-day seminar representing private entities, government agencies, international and regional bodies – who work in

agriculture, tourism, environment and climate change.

The seminar is being held as part of the OECS/USAID RRACC Project – a five-year developmental project which was launched in 2011 to assist OECS governments with building resilience through the implementation of climate change adaptation measures.

Specifically, RRACC will build an enabling environment in support of policies and laws to reduce vulnerability; address information gaps that constrain issues related to climate vulnerabilities; make interventions in freshwater and coastal management to build resilience; increase awareness on issues related to climate change and improve capacities for climate change adaptation.

\*\* This article is an edited version of a statement from the OECS Secretariat.

## Food Security

**FAO study profiles benefits of school feeding programmes linked to family farms.** FAO News, 23 August, 2013

<http://www.fao.org/news/story/en/item/195074/icode/>

### Full Article

Study in 8 Latin American countries explores challenges, achievements, and lessons learned  
23 August 2013, Brasilia/Rome - A study undertaken by FAO in Bolivia, Colombia, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay and Peru showcases the contributions that school feeding programmes are making to strengthening children's social protection, food security and nutritional status.

The study, *A Panorama of School Feeding and the Possibilities for Direct Purchases from Family Farming - Case Studies in Eight Countries (Spanish only)*, indicates that these programmes both promote school attendance and bolster the learning process.

Additionally, all countries studied showed interest in sourcing food for school programs from family farmers as a way to foster local development.

"This is a triple-win approach: it secures quality food for students of public schools, promotes consumption of fresh and healthy food, and opens new markets and the possibility of higher incomes for family farmers while boosting local development," said FAO Director-General, José Graziano da Silva.

All told, the various programs profiled by the regional study include 18 million students of different ages and educational levels, with a combined budget of approximately \$940 million, representing an annual net investment of \$25 per student. Funding is primarily destined for the purchase and distribution of food.

## Growing political commitment

The commitment of governments in the region to school feeding programmes has grown, the study finds. Almost all countries examined have expressed interest in implementing a policy of direct purchases from small producers to supply their school feeding programs.

However, FAO also notes that legal and regulatory frameworks are required to facilitate the integration of small producers into government supply networks.

"The study shows that tackling the challenges of school feeding programs requires the involvement of various actors, including governments, parliamentarians, international organizations, private sector, the educational community and civil society," said Najla Veloso, coordinator of FAO's regional work in this area.

## Brazil-FAO Programme

The study on school feeding programmes was supported by the Brazil-FAO International Cooperation Programme, which is engaged in a series of activities aimed at helping countries achieve various Millennium Development Goals.

Brazil's experience with school feeding programmes has a 50 year history. By 2012, its national feeding program reached nearly 45 million students.

"The Brazilian government is ready to contribute to the development and improvement of school feeding programmes not only in Latin America, but also in Africa," said Albaneide Peixinho, general coordinator of Brazil's School Feeding National Programme.

Given the advances shown by school feeding programmes highlighted in the regional study, FAO and the government of Brazil are stressing the need to translate the political commitment shown by countries into concrete school feeding policies and institutions, to guarantee the quality and nutritional value of food in schools.

## Agricultural Development

**Bahamas and Mexico seeking ties in agriculture and trade.** Bahamas Information Services, 22 August, 2013

<http://www.bahamas.gov.bs/>

### Full Article

NASSAU, The Bahamas - The Commonwealth of the Bahamas and the United Mexican States are seeking to explore new opportunities in areas such as agriculture, environment management and craft production.

His Excellency Sir Arthur Foulkes, Governor-General, highlighted these areas as he accepted Letters of Credence presented by His Excellency Gerardo Lozano Arrendondo, Ambassador of the United Mexican States, during a ceremony at Government House on Thursday August 22, 2013.

The Bahamas and Mexico has maintained relations at the political level through international organisations within the multilateral forum such as the United Nations and the Organisation of American States.

Since the establishment of diplomatic relations between both countries on January 23, 1974, both countries have focused on bilateral relations regarding matters of technical assistance, trade and investment.

Both countries have also demonstrated their openness to bilateral exchange by conveying support for election, most recently, to organisations such as the Human Rights Council, the International Maritime Organisation, and the Economic and Social Council and the International Narcotics Board.

Sir Arthur gave his assurance that The Bahamas will support Mexico, whenever possible.

“Both our countries have been blessed with thriving tourism industries, which require specialised training and skills,” he said.

Continued contributions to promoting the Spanish language and culture, as well as technical training in the hospitality industry, are all areas that can be further developed for mutual benefit, he said. Additionally, new opportunities can be explored in areas such as Agriculture, Environment Management and Craft Production.

“Cognisant of the economic situation currently affecting our world and acknowledging both its challenges and struggles, it is understandable that bilateral motives for trade and development are occasionally eclipsed.

“However, I feel that this highlights, more than ever, the need to effectively engage in technical cooperation, whenever possible,” Sir Arthur said.

Ambassador Arrendondo has been instructed by his government “to increase and consolidate the presence of Mexico in The Bahamas, through the enhancing of political contacts, the promotion of more links between businessmen of both countries in order to increase the trade flows, and to reinforce the technical and scientific cooperation programmes in those areas of mutual interest or those of particular importance to The Bahamas.”

He said it was an honour and privilege to present his Credentials appointing him ambassador to The Bahamas.

Sir Arthur noted that the ambassador’s cultivated skills through his service as a career diplomat would no doubt allow him to excel in his responsibilities and official duties.

“I am confident that your distinguished academic, professional and business expertise will serve to foster stronger relations between our two countries,” Sir Arthur said.

### **Full Article**

The Ministry of Agriculture and Fisheries has re-launched its Citizen's Charter as it seeks to improve customer service to its various stakeholders and boost agricultural production to ensure food security.

The document outlines areas such as the Ministry's vision, mission, its various stakeholders, and core values.

Portfolio Minister, Hon. Roger Clarke, in his remarks at the re-launch held at his Hope Gardens headquarters on Wednesday, August 28, noted that as public servants, every effort must be made to pursue a culture of excellence in service delivery.

"At the same time, we must also recognise that our service is aligned to the stake we all have in improving the welfare of Jamaica, especially as this relates to the provision and availability of nutritious food," Mr. Clarke said.

He further noted that the Ministry leads a sector that has a critical role to play in ensuring that Jamaicans are empowered to realise their fullest potential and as enunciated in the National Vision 2030 achieve the development goal of having a healthy and sustainable population.

"Our primary role as a Ministry is that of facilitating the systems that promote food security. In order to achieve these objectives, it is important that the Ministry pursues performance-based corporate strategies, underpinned by a customer focused philosophy of service and this is what our Citizen's Charter represents and documents," Mr. Clarke stated.

"But my belief is that the Charter is also an open invitation to all Jamaicans to become active participants in pursuing the development of goals for food security. It will take all of us as Jamaicans to get food security right. As citizens of Jamaica we all have a stake in ensuring that the agriculture sector succeeds," he added.

Mr. Clarke also renewed the call for Jamaicans to redouble their efforts in the 'Eat Jamaican Campaign' and to play their part in advancing local food production.

Principal Director, Policy, Coordination and Administration at the Ministry, Dwight Uylett, explained that a re-launch of the Citizen's Charter became necessary due to changes within the agriculture sector over the last six to 10 years.

"This changes how we go about business and how we look to go about business and how we interact. There are a lot of stakeholders within the sector now and we have to ensure that we have proper programmes in place to address those in a fulsome manner," Mr. Uylett stated.

He noted that since the first Charter was launched in 2006, a lot of capacity building has taken place within the Ministry.

"We have strengthened, extensively, our extension services and interaction with the farming community. We have reorganised a number of key strategic imperative and organisations and one key one is the Agro Invest Cooperation," Mr. Uylett noted.

Mr. Uylett also mentioned that one of the key focus areas of the Ministry is to be compliant with a number of global regulations relating to agriculture.

“We also want to extend the pool and the penetration rate of technology use in the agriculture sector. One of the key things the Ministry is going to be looking at in the future is how do we drive the benefits of technology all the way to addressing farmer interaction, transfer of knowledge, prevention of praedial larceny to ensure that going forward, we have a sustainable agriculture sector,” the Principal Director said.

Mr. Uylett informed that as part of the Charter, the Ministry will also be required to undertake an all-island customer service survey.

The Citizen’s Charter forms part of the government’s public sector modernization programme, which is being ably spearheaded by the Cabinet office.

## Upcoming Events

September 2013

### **2013 National Goat Conference - North Carolina A&T State University**

**Date:** 15-18 September 2013

**Location:** Joseph S. Koury Convention Center, Greensboro, North Carolina, USA

**Theme:** “Looking Towards the Future”

**Website:** <http://www.ncat.edu/academics/schools-colleges1/saes/cooperative-extension/goatconf.html>

### **Science Forum 2013**

**Date:** 23-25 September 2013

**Location:** Bonn, Germany.

**Description:** Will focus on “Nutrition and health outcomes: targets for agricultural research”

**Website:** <http://www.scienceforum13.org/>

### **First International Conference on Global Food Security**

**Date:** 29 September - 2 October 2013

**Location:** Noordwijkerhout, The Netherlands

**Website:** <http://globalfoodsecurityconference.com/index.html>

October 2013

### **First Global Yam Conference “Yams 2013”**

**Date:** 3-6 October, 2013

**Location:** Accra, Ghana

**Description:** First Global Yam Conference “Yams 2013” will be held in conjunction with the 12<sup>th</sup> Symposium of the International Society for Tropical Root Crops (ISTRC)-African Branch, from 3 to 6 October 2013 in Accra, Ghana

**Website:** <http://www.iita.org/web/yams2013>

**12<sup>th</sup> Caribbean Week of Agriculture (CWA)**

**Date:** 4-12 October, 2013

**Location:** Guyana International Conference Centre, Guyana

**Theme:** Linking the Caribbean for Regional Food and Nutrition Security and Rural Development

**Email:** [cwaguyana2013@gmail.com](mailto:cwaguyana2013@gmail.com)

November 2013

**International Conference on ICT4ag**

**Date:** 4-8 November 2013

**Location:** Kigali, Rwanda

**Website:** <http://www.ict4ag.org/en/>

**Entomology 2013: Entomological Society of America (ESA) 61st Annual Meeting**

**Date:** 10-13 November 2013

**Location:** Austin, Texas, USA

**Theme:** Science Impacting a Connected World

**Website:** <http://www.entsoc.org/entomology2013>