



IMPROVING LIVES THROUGH
AGRICULTURAL RESEARCH

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Agriculture *in the* News



Issues Affecting Caribbean Agriculture

IN THIS ISSUE FEB 16 - 22, 2013

- | | |
|-----|---------------------------|
| 1. | Roots and Tubers |
| 4. | Cereals and Grain Legumes |
| 6. | Rice |
| 9. | Citrus |
| 11. | Livestock |
| 12. | Climate Change |
| 14. | Food Safety |
| 15. | Agricultural Development |
| 18. | Agricultural Research |
| 20. | Agricultural Institutions |
| 21. | Upcoming Events |
| | |
| | |
| | |
| | |
| | |
| | |

Government advertises value of local foods by Geisha Kowlessar.

The Trinidad Guardian, 19 February 2013

<http://guardian.co.tt/news/2013-02-18/govt-advertises-value-local-foods>.

<http://www.jis.gov.jm/news/list/32892>

In a bid to ensure T&T becomes a food-secure nation and to foster the appreciation of local foods, the Government yesterday launched its corporate advertising campaign aimed at sensitising the public. The event, which took place at Kapok Hotel, St Clair, featured snippets of the benefit of local fruits and vegetables.

For more information see page 15

AGRICULTURE IN THE NEWS is a monthly newsletter which provides a compilation of selected news articles on issues affecting agriculture in the Caribbean region. Articles from Newspapers, Online News Service Agencies, Newsletters and Press Releases are featured.

For copies of documents cited, visit the web address or source of the information provided.



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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

Roots and Tubers

Cassava as you've never seen it by Neil Palmer. CIAT Blog, 22 February 2013

<http://www.ciatnews.cgiar.org/2013/02/22/cassava-as-youve-never-seen-it/>

Full article

When I heard that CIAT cassava breeder Hernan Ceballos had some “very strange” cassava to show us, I didn’t waste any time in calling to clarify what he meant. He gave little away: “you have to see it.”

Very soon we were in one of CIAT’s vast fields of experimental cassava. I wondered what exactly we’d find: cassava roots with mildly amusing shapes? Multicoloured roots, perhaps? But Hernan wasn’t carrying a harvesting tool; it was the plants themselves that would be strange.

As we walked I hoped I’d be able to oblige Hernan’s conspiratorial charm by instantly recognising what it was about the plants that was strange. Hopefully it would be obvious to the cassava novice and not some hard-to-photograph quirk premised on a scientific technicality.

I wasn’t disappointed. Anyone who’s seen a “normal” field of cassava knows that the plants grow a few feet high, a few feet wide, are bushy – perhaps even a bit spindly – with finger-like leaves extending in all directions from the trunk, on the end of slim stalks – or petioles. A whole field of cassava is normally impenetrably dense. After passing trials of what I considered normal-looking cassava, one plot stood out immediately.

Rather than bushy, these were soaring columns of cassava – sturdy, compact, and standing nearly ten feet-high, the leaves growing straight out from the trunk with no petioles whatsoever. For want of a better analogy, they reminded me of Marge Simpson’s towering beehive hair-do, in a rich, racing green. According to Hernan, the CIAT researchers refer to the plants as “Asparagus Cassava.” They weren’t just strange; they were the strangest cassava plants I’d ever seen.

Hernan himself was clearly quite excited. Using cuttings maintained at CIAT’s gene bank, the centre’s cassava scientists had inbred the plants to see what kinds of hidden traits they would express – characteristics that normally lie dormant in their DNA.

The resulting tall, slim plants mean you can quadruple the number of plants per plot, Hernan told us. Assuming the yield per plant of Asparagus Cassava planted at high densities is comparable to conventional varieties at normal densities, you could be looking at a big boost in yields. That would be a boon for smallholders growing cassava for food, he continued, those supplying the ever-growing industrial demand for cassava starch, and due to increased production on the same area of land, would help reduce the workload of women producers in Africa.

The fact that Asparagus Cassava can be planted in neat rows, easily accessible and navigable by farmers also means they could be harvested mechanically, said Hernan. While machine harvesting is not suited to some parts of the cassava-producing world, industrial producers will surely take note.

An additional benefit is for livestock: mechanical harvesting of the Asparagus Cassava leaves – free of the fibrous petioles – would be much easier, and the resulting feed of higher quality.

Hernan is not the kind of scientist to use the phrase “green revolution” lightly in relation to his own

research. But during our half-hour excursion to see the “strange” cassava, it kept popping up in relation to the crop’s potential. He told us that with Asparagus Cassava, the CIAT team would like to replicate the success of maize scientists, who increased the crop’s tolerance to “crowding”, enabling planting densities to increase three-fold with major gains in yields.

Few would dispute that a tripling of cassava yields would very likely signify the revolution the crop has been waiting for for so long. When high-density Asparagus Cassava trials begin in May 2013, Hernan will be able to put his hypothesis to the test.

Long-life cassava won’t work – but longer-life could be the answer by Neil Palmer. CIAT Blog, 19 February, 2013

<http://www.ciatnews.cgiar.org/2013/02/19/cassava-will-not-turn-into-a-potato/>

Full article

CIAT Cassava breeder Hernan Ceballos has called time on hopes of developing long-life cassava roots.

“In terms of roots that can last for months after harvest, the dream is over,” he told delegates at a workshop of the [CGIAR’s Roots, Tubers and Bananas \(RTB\) research program](#), at CIAT’s headquarters in Cali, Colombia, today. “Cassava will not turn into a potato,” he said, a reference to the latter’s excellent storage quality.

But encouragingly, his current research suggests that developing cassava roots that can last just a week without spoiling – *longer*-life rather than long-life – could enable farmers to overcome one of the most significant bottlenecks in the cassava processing chain.

Cassava roots perish very quickly after harvest and are normally completely spoiled after three days. This process, known as post-harvest physiological deterioration (PPD), is a major constraint for cassava producers – both big and small – who have to rush the roots to markets or starch processors. It’s a challenge complicated by poor rural infrastructure in many cassava producing areas, and a major obstacle to cassava fulfilling its potential as [one of the most climate change-resilient crops for sub-Saharan Africa](#).

In early 2009, CIAT scientists made the chance discovery that a cassava variety conserved in the organisation’s gene bank that contained naturally high levels of beta-carotene, was able to [resist PPD for up to two months](#). If the scientists could establish a causal link between the antioxidant properties of beta-carotene and PPD tolerance, new cassava varieties with much longer shelf-lives could be developed, and cassava roots could become as easy-to-store as potatoes.

But subsequent CIAT research found that despite the roots lasting longer, their starch content fell gradually over time – and it’s the starch that makes cassava such a valuable food and industrial crop. “After you harvest it, the root is still breathing; the starch turns into carbon dioxide and water, and some starch is turned it into its basic component, sugar,” Hernan told me during the break. “The roots are not spoiled, but the quantity of starch is falling. After a couple of weeks you have, maybe, 10 per cent less starch than at harvest. In a month, we estimate that the starch content is 30-40 per cent less. Losing that amount of starch is not acceptable.

“So now we’re focusing on roots that can survive the first week-to-ten days after harvest – that’s where 90 per cent of the losses occur in the cassava processing chain. It means that if a truck breaks down and a farmer can’t get the roots to the processing factory, they won’t lose everything. The starch content of the roots will end up slightly lower, but they will still be valuable and the farmer will have a few days to get the truck fixed.

“It’s buying time at the most sensitive time in the processing chain.”

A doubling of the cassava shelf-life is certainly not to be sniffed at, and can also mean a lot to cassava processors. During the discussion, Bussie Maziya-Dixon, cassava breeder at the [International Institute of Tropical Agriculture \(IITA\)](#), said that the quality of *gari* – a popular West African food made from mashed and fermented cassava roots – decreases drastically when the root processing is delayed by one-to- two days after harvest. Longer-life cassava could make a big difference.

While Hernan himself also believes it’s possible that one day there will be a market for sweeter cassava products, made using long-life roots whose starch has turned to sugar, he reiterated that “the dream of roots that store for months and months is out of the picture now.”

The *Strategies for improving livelihoods through RTB post-harvest technologies* workshop runs all week at CIAT’s headquarters in Colombia.

- See more at: <http://www.ciatnews.cgiar.org/2013/02/19/cassava-will-not-turn-into-a-potato/#sthash.2RwcanKf.dpuf>

Poor farming communities to benefit from new research into viruses that damage yam crops by Natural Resources Institute, 8 February 2013
<http://www.nri.org/news/archive/2013/20130208-yam-crops.htm>

Full Article

The University of Greenwich’s Natural Resources Institute has received a grant from the Bill & Melinda Gates Foundation to support research to detect damaging viruses, which can reduce the yield of valuable yam crops for smallholder farming communities in West Africa and other parts of the developing world.

Greenwich researchers aim to develop a cheap and reliable testing system, which can be used to select virus-free yam tubers for planting by smallholder farmers.

The aim is to improve food security and household incomes of some of the world’s poorest farmers.

The three year \$1.5m project is being led by Dr Susan Seal, Head of the Biodiversity and Molecular Biology Research Group at the university’s Natural Resources Institute.

She says: “Yam is a staple crop for millions of people in many tropical countries. Each season, yams are usually grown from the previous year’s tubers, leading to a build-up of virus-borne diseases which can result in reduced harvests.”

“The only effective method of control has been to use virus-free yam tubers for planting, but these are both scarce and expensive, limiting both the production and productivity of this important crop.”

“Now, we aim to produce sensitive, cost-effective devices which can give clear results in minutes – just as a pregnancy test kit does.”

The Natural Resources Institute (NRI) works to support food security, sustainable development and poverty reduction in developing countries. It has a special focus on, and expertise in, development in Africa. Other large projects with the Bill and Melinda Gates Foundation include research to tackle agricultural pests such as whitefly, and economic development work with producers of another important staple crop, cassava.

Cereals and Grain Legumes

Global research programs on grain legumes and dryland cereals launched to boost food and nutrition security of the poor. CGIAR Consortium News, 7 February 2013

<http://www.cgiar.org/consortium-news/global-research-programs-on-grain-legumes-and-dryland-cereals-launched-to-boost-food-and-nutrition-security-of-the-poor/>

Full Article

Strategic, high-quality international agriculture research partnerships on grain legumes and dryland cereals to help reduce poverty and improve food and nutrition security in marginal environments.

With food insecurity and malnutrition persisting as the greatest challenge facing humanity in the coming decades, two grand research programs to boost food and nutrition and improve livelihoods particularly of the dryland poor were launched in India yesterday by the world’s largest international agriculture research coalition.

The CGIAR Research Programs on Grain Legumes and Dryland Cereals (also known by their operating names – **Grain Legumes** and **Dryland Cereals**) both led by the [International Crops Research Institute for the Semi-Arid Tropics](#) (ICRISAT) headquartered in Hyderabad, Andhra Pradesh, India are part of CGIAR’s bold effort to help reduce world hunger, malnutrition and poverty while ensuring the sustainable management of natural resources. The research programs, two of the [sixteen multi-Center CGIAR Research Programs](#) and the most comprehensive research-for-development (R4D) efforts undertaken thus far on once ‘orphan’ or neglected crops, **have a combined three-year budget of US\$225 million.**

“We are now faced with the enormous challenge to produce 70% more food to feed more than 9 billion people by 2050 using scarce resources amid the threat of climate change. CGIAR Research Programs like Grain Legumes and Dryland Cereals form an integral part of the CGIAR reform process that allows its Centers to function as a unified system, working together to pursue shared goals such as tackling hunger and poverty,” said Dr Frank Rijsberman, Chief Executive Officer of the CGIAR Consortium, during the program launch.

Dr William Dar, Director General, ICRISAT, highlighted the importance of the two research programs. “Grain legumes are the ‘poor people’s meat’ – crucial for ending childhood malnutrition. Dryland cereals provide food security to the poorest people on earth. They are vital to the sustainability of mixed crop-livestock farming, and provide genetic resources for adaptation to harsh, marginal environments. In the face of growing global hunger and poverty and the effects of climate

change, Grain Legumes and Dryland Cereals will help provide nutritious, drought-resilient crops for the dryland poor.”

“We are excited to demonstrate the power of partnership in these bold and innovative new research programs, where hundreds of research for development partners worldwide will work together along the grain legume and dryland cereal value chains to develop, adopt, disseminate and promote R4D innovations on these important crops,” Dr Dar added.

“We are fully committed to collaborate with our partners in Grain Legumes to achieve impacts in all target regions, particularly in reducing poverty and food and nutrition insecurity in harsh, dryland systems,” said Dr Ruben Echeverria, Director General, [International Center for Tropical Agriculture \(CIAT\)](#).

Dr Mahmoud Solh, Director General, [International Center for Agricultural Research in the Dry Areas \(ICARDA\)](#), stressed that “combining grain legumes and dryland cereals – both highly nutritious, drought-tolerant crops – in their diets are the best bets for smallholder farmers in marginal environments to achieve food and nutritional security and improve their livelihoods.”

Dr Ylva Hillbur, Deputy Director General for Research, [International Institute of Tropical Agriculture \(IITA\)](#) expressed her Institute’s commitment to work with the Grain Legumes partners towards attaining economic and environmental gains in the target regions.

“We are delighted by the significant support and commitment of all our partners in ensuring the success of the two research programs. These programs will make a real difference in the lives of smallholder farmers and the poor people,” said Dr Nigel Poole, ICRISAT Board Chair.

The CGIAR Research Program on Grain Legumes is a ten-year R4D program that focuses on improving chickpea, common bean, cowpea, groundnut, faba bean, lentil, pigeonpea and soybean crops grown by poor smallholder families in five target regions. It aims to benefit 300 million smallholder farm households from an average 20% yield increase in grain legumes, with a projected US\$4.5 billion savings as cumulative benefits of increased food production and nitrogen fertilizer saved (from the crops’ biological nitrogen fixation property). Increased food supplies by 7.1 million tons and improved health of consumers from the extra 2.1 million tons of protein in their diets are also expected to be gained.

Grain Legumes is a partnership among four members of the CGIAR Consortium: ICRISAT as lead Center, CIAT, ICARDA and IITA, along with several public and private institutes and organizations, governments, and farmers worldwide.

The CGIAR Research Program on Dryland Cereals will work on millets, sorghum, and barley to achieve an increase in farm-level crop productivity and total crop production of at least 16% in ten years. In the target geographies of harsh dryland conditions, total grain production is expected to rise by a total of 11 million metric tons to reach a total value of US\$20 billion, along with increases in animal feed and fodder with a value of about US\$10 billion. These food, feed and financial benefits will flow to about 5.8 million smallholder farms and around 34 million total beneficiaries by way of improved food quantity, quality and security.

Dryland Cereals is a partnership between two members of the CGIAR Consortium – ICRISAT as lead center, and ICARDA, along with a number of public and private institutes and organizations, governments, and farmers globally.

Grain Legumes and Dryland Cereals were approved in October 2012, but initial implementation started in July 2012. These programs were formally launched on 6 February 2013 as part of a week-

long event at the ICRISAT headquarters to bring together all partners involved and create a common and shared understanding and commitment to the two programs. A CGIAR Research Program on Dryland Cereals Implementation Workshop was held on 4-5 February, while a CGIAR Research Program on Grain Legumes Implementation Workshop is being held on 7-8 February.

A Declaration of Commitment was signed among the four CGIAR Center partners “to fulfill their responsibility and pledge their actions and support to the successful and smooth implementation of Grain Legumes and Dryland Cereals, in order to deliver the programs’ promises to smallholder farmers and to hundreds of millions of poor people in the target regions.”

In a panel discussion as part of the launch program, representatives from other key partner organizations expressed their perspectives and expectations about the new, innovative program partnerships. The need for partnership on an equal footing was emphasized, where national organizations will be more engaged and involved, and where common priorities, objectives, expertise and resources will be shared. Emphasis was also placed on creating impacts to make a difference in the lives of smallholder farmers and poor people in the target regions.

Among those represented in the panel discussion were the Bill & Melinda Gates Foundation, United States Agency for International Development (USAID), Indian Council of Agricultural Research (ICAR), National Semi-Arid Resources Research Institute (NaSARRI) of Uganda, Ethiopian Institute of Agricultural Research (EIAR), Agropolis International, Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), West Africa Centre for Crop Improvement (WACCI), and CGIAR Generation Challenge Programme (GCP).

Rice

India's rice revolution. The Observer, 16 February 2013

<http://www.guardian.co.uk/global-development/2013/feb/16/india-rice-farmers-revolution>

Full Article

Sumant Kumar was overjoyed when he harvested his rice last year. There had been good rains in his village of Darveshpura in north-east India and he knew he could improve on the four or five tonnes per hectare that he usually managed. But every stalk he cut on his paddy field near the bank of the Sakri river seemed to weigh heavier than usual, every grain of rice was bigger and when his crop was weighed on the old village scales, even Kumar was shocked.

This was not six or even 10 or 20 tonnes. Kumar, a shy young farmer in Nalanda district of India's poorest state Bihar, had – using only farmyard manure and without any herbicides – grown an astonishing 22.4 tonnes of rice on one hectare of land. This was a world record and with rice the staple food of more than half the world's population of seven billion, big news.

It beat not just the 19.4 tonnes achieved by the "father of rice", the Chinese agricultural scientist Yuan Longping, but the World Bank-funded scientists at the International Rice Research Institute in the Philippines, and anything achieved by the biggest European and American seed and GM companies.

And it was not just Sumant Kumar. Krishna, Nitish, Sanjay and Bijay, his friends and rivals in Darveshpura, all recorded over 17 tonnes, and many others in the villages around claimed to have more than doubled their usual yields.

The villagers, at the mercy of erratic weather and used to going without food in bad years, celebrated. But the Bihar state agricultural universities didn't believe them at first, while India's leading rice scientists muttered about freak results. The Nalanda farmers were accused of cheating. Only when the state's head of agriculture, a rice farmer himself, came to the village with his own men and personally verified Sumant's crop, was the record confirmed.

The rhythm of Nalanda village life was shattered. Here bullocks still pull ploughs as they have always done, their dung is still dried on the walls of houses and used to cook food. Electricity has still not reached most people. Sumant became a local hero, mentioned in the Indian parliament and asked to attend conferences. The state's chief minister came to Darveshpura to congratulate him, and the village was rewarded with electric power, a bank and a new concrete bridge.

That might have been the end of the story had Sumant's friend Nitish not smashed the world record for growing potatoes six months later. Shortly after Ravindra Kumar, a small farmer from a nearby Bihari village, broke the Indian record for growing wheat. Darveshpura became known as India's "miracle village", Nalanda became famous and teams of scientists, development groups, farmers, civil servants and politicians all descended to discover its secret.

When I meet the young farmers, all in their early 30s, they still seem slightly dazed by their fame. They've become unlikely heroes in a state where nearly half the families live below the Indian poverty line and 93% of the 100 million population depend on growing rice and potatoes. Nitish Kumar speaks quietly of his success and says he is determined to improve on the record. "In previous years, farming has not been very profitable," he says. "Now I realise that it can be. My whole life has changed. I can send my children to school and spend more on health. My income has increased a lot."

What happened in Darveshpura has divided scientists and is exciting governments and development experts. Tests on the soil show it is particularly rich in silicon but the reason for the "super yields" is entirely down to a method of growing crops called **System of Rice (or root) Intensification (SRI)**. It has dramatically increased yields with wheat, potatoes, sugar cane, yams, tomatoes, garlic, aubergine and many other crops and is being hailed as one of the most significant developments of the past 50 years for the world's 500 million small-scale farmers and the two billion people who depend on them.

Instead of planting three-week-old rice seedlings in clumps of three or four in waterlogged fields, as rice farmers around the world traditionally do, the Darveshpura farmers carefully nurture only half as many seeds, and then transplant the young plants into fields, one by one, when much younger. Additionally, they space them at 25cm intervals in a grid pattern, keep the soil much drier and carefully weed around the plants to allow air to their roots. The premise that "less is more" was taught by Rajiv Kumar, a young Bihar state government extension worker who had been trained in turn by Anil Verma of a small Indian NGO called Pran (Preservation and Proliferation of Rural Resources and Nature), which has introduced the SRI method to hundreds of villages in the past three years.

While the "green revolution" that averted Indian famine in the 1970s relied on improved crop varieties, expensive pesticides and chemical fertilisers, SRI appears to offer a long-term, sustainable future for no extra cost. With more than one in seven of the global population going hungry and demand for rice expected to outstrip supply within 20 years, it appears to offer real hope. Even a 30% increase in the yields of the world's small farmers would go a long way to alleviating poverty.

"Farmers use less seeds, less water and less chemicals but they get more without having to invest more. This is revolutionary," said Dr Surendra Chaurassa from Bihar's agriculture ministry. "I did not believe it to start with, but now I think it can potentially change the way everyone farms. I would want every state to promote it. If we get 30-40% increase in yields, that is more than enough to recommend it."

The results in Bihar have exceeded Chaurassa's hopes. Sudama Mahto, an agriculture officer in Nalanda, says a small investment in training a few hundred people to teach SRI methods has resulted in a 45% increase in the region's yields. Veerapandi Arumugam, the former agriculture minister of Tamil Nadu state, hailed the system as "revolutionising" farming.

SRI's origins go back to the 1980s in Madagascar where Henri de Laulanie, a French Jesuit priest and agronomist, observed how villagers grew rice in the uplands. He developed the method but it was an American, professor Norman Uphoff, director of the International Institute for Food, Agriculture and Development at Cornell University, who was largely responsible for spreading the word about De Laulanie's work.

Given \$15m by an anonymous billionaire to research sustainable development, Uphoff went to Madagascar in 1983 and saw the success of SRI for himself: farmers whose previous yields averaged two tonnes per hectare were harvesting eight tonnes. In 1997 he started to actively promote SRI in Asia, where more than 600 million people are malnourished.

"It is a set of ideas, the absolute opposite to the first green revolution [of the 60s] which said that you had to change the genes and the soil nutrients to improve yields. That came at a tremendous ecological cost," says Uphoff. "Agriculture in the 21st century must be practised differently. Land and water resources are becoming scarcer, of poorer quality, or less reliable. Climatic conditions are in many places more adverse. SRI offers millions of disadvantaged households far better opportunities. Nobody is benefiting from this except the farmers; there are no patents, royalties or licensing fees."

For 40 years now, says Uphoff, science has been obsessed with improving seeds and using artificial fertilisers: "It's been genes, genes, genes. There has never been talk of managing crops. Corporations say 'we will breed you a better plant' and breeders work hard to get 5-10% increase in yields. We have tried to make agriculture an industrial enterprise and have forgotten its biological roots."

Not everyone agrees. Some scientists complain there is not enough peer-reviewed evidence around SRI and that it is impossible to get such returns. "SRI is a set of management practices and nothing else, many of which have been known for a long time and are best recommended practice," says Achim Dobermann, deputy director for research at the International Rice Research Institute. "Scientifically speaking I don't believe there is any miracle. When people independently have evaluated SRI principles then the result has usually been quite different from what has been reported on farm evaluations conducted by NGOs and others who are promoting it. Most scientists have had difficulty replicating the observations."

Dominic Glover, a British researcher working with Wageningen University in the Netherlands, has spent years analysing the introduction of GM crops in developing countries. He is now following how SRI is being adopted in India and believes there has been a "turf war".

"There are experts in their fields defending their knowledge," he says. "But in many areas, growers have tried SRI methods and abandoned them. People are unwilling to investigate this. SRI is good for small farmers who rely on their own families for labour, but not necessarily for larger operations."

Rather than any magical theory, it is good husbandry, skill and attention which results in the super yields. Clearly in certain circumstances, it is an efficient resource for farmers. But it is labour intensive and nobody has come up with the technology to transplant single seedlings yet."

But some larger farmers in Bihar say it is not labour intensive and can actually reduce time spent in fields. "When a farmer does SRI the first time, yes it is more labour intensive," says Santosh Kumar, who grows 15 hectares of rice and vegetables in Nalanda. "Then it gets easier and new innovations are taking place now."

In its early days, SRI was dismissed or vilified by donors and scientists but in the past few years it has gained credibility. Uphoff estimates there are now 4-5 million farmers using SRI worldwide, with governments in China, India, Indonesia, Cambodia, Sri Lanka and Vietnam promoting it.

Sumant, Nitish and as many as 100,000 other SRI farmers in Bihar are now preparing their next rice crop. It's back-breaking work transplanting the young rice shoots from the nursery beds to the paddy fields but buoyed by recognition and results, their confidence and optimism in the future is sky high.

Last month Nobel prize-winning economist Joseph Stiglitz visited Nalanda district and recognised the potential of this kind of organic farming, telling the villagers they were "better than scientists". "It was amazing to see their success in organic farming," said Stiglitz, who called for more research. "Agriculture scientists from across the world should visit and learn and be inspired by them."

Bihar, from being India's poorest state, is now at the centre of what is being called a "new green grassroots revolution" with farming villages, research groups and NGOs all beginning to experiment with different crops using SRI. The state will invest \$50m in SRI next year but western governments and foundations are holding back, preferring to invest in hi-tech research. The agronomist Anil Verma does not understand why: "The farmers know SRI works, but help is needed to train them. We know it works differently in different soils but the principles are solid," he says. "The biggest problem we have is that people want to do it but we do not have enough trainers.

"If any scientist or a company came up with a technology that almost guaranteed a 50% increase in yields at no extra cost they would get a Nobel prize. But when young Biharian farmers do that they get nothing. I only want to see the poor farmers have enough to eat."

Citrus

Ministry of Agriculture controls spread of citrus greening disease. GIS Dominica, 21 February 2013
<http://news.gov.dm/index.php/news/4-headline-news/551-ministry-of-agriculture-controls-spread-of-citrus-greening-disease>

Full Article

The Ministry of Agriculture is reaping some success in managing the citrus greening disease from spreading across the country. The disease which was discovered in Dominica in May 2012 has been found in several communities around the island, including La Plaine, Cabrits, Wesley and Pointe Michel.

The disease is transmitted by a vector called the Asian Citrus Psyllid. Plant Protection Officer Ryan Anselm recently reported that efforts to eradicate the vector have been successful so far.

“Our programme is to eliminate all infested trees and to control the vector. As a Ministry, we have imported 40 thousand parasitoids and we have distributed these parasitoids all over the island. Recent surveys have indicated that they have been very successful in managing the vector. The disease has been intercepted in four main areas: Pointe Michel, La Plaine, Wesley and at the Cabrits. Our programme in these areas has been to cut all infested trees. “

Meantime small and backyard farmers in Pointe Michel have been advised to cooperate with the Ministry of Agriculture as it seeks to eradicate plants affected by the citrus greening disease in that community.

Anselm says while the ministry recognizes the fact that the eradication exercise will affect the livelihood of some farmers, the decision is vital for the survival of the citrus industry in Dominica. The Ministry of Agriculture is receiving support from the University of Florida and two Cuban experts in dealing with the management of the citrus greening disease.

“These two institutions along with the two experts have recommended that we have a very unique situation in Dominica and if we act rapidly we can eradicate the disease. By eradicating the disease we have to perform a painful exercise which is to cut down all citrus trees infested with citrus greening.”

Trees affected by the citrus greening disease usually die after a period of time since the disease starves the top of the tree thus resulting in reduced production.

Officials have confirmed that citrus fruits from affected trees taste different and are irregularly shaped.

Citrus Greening Disease tackled in Point Michel by Dominica News Online, 19 February 2013
<http://dominicanewsonline.com/news/homepage/news/agriculture/citrus-greening-disease-tackled-in-pointe-michel/>

Full Article

Small and backyard farmers in Point Michel are being advised to cooperate with the Ministry of Agriculture as it seeks to eradicate plants affected by the Citrus Greening Disease in that community.

The disease which was discovered in Dominica in May 2012 has been found in several communities around the island, including La Plaine, Cabrits, Wesley and Point Michel.

“The situation in Point Michel is that 95 percent of the citrus have been infected with Citrus Greening Disease. We are going on an eradication drive because we have a good opportunity to eradicate the disease in Dominica,” Plant Protection Officer, Ryan Anselm, explained.

Anselm said while the ministry recognizes the fact that the eradication exercise will affect the livelihood of some farmers, the decision is vital for the survival of the citrus industry in Dominica.

“We recognize that they use the citrus but we have a fundamental role to play in sustaining the industry. If we do not eradicate that disease in Point Michel it will spread to our commercial areas,” he stated.

He said the disease is incurable and could damage the entire citrus industry in the country.

He said cutting of trees have already been conducted in the other communities.

One year after the destroying of trees, farmers are told that they can replant, Anselm said.

Trees affected by the disease usually die after a period of time since the disease starves the top of the tree thus resulting in reduced production. Fruits from affected trees taste different and are irregularly shaped, officials say.

The disease also causes yellowing of a plant’s new shoots and can be confused with zinc deficiency.

Laboratory confirmation is necessary to diagnose the disease.

Livestock

Meat processing plant opened in Montego Bay by Bryan Mille. Jamaica Information Service, 17 February 2013

<http://www.jis.gov.jm/news/bydate/33004-meat-processing-plant-opened-in-montego-bay>

Full Article

Caribbean Producers Jamaica Limited Group (CPJ), on Friday (February 15), officially launched the operations of its newest meat processing plant, situated at Montego Freeport, Montego Bay, St. James.

The facility was officially opened during a ceremony held at the complex, which was attended by several officials and other guests, headed by Agriculture and Fisheries Minister, Hon. Roger Clarke.

The plant, which was established at a cost of approximately US\$4 million, is expected to provide employment for some 43 persons.

In his remarks, CPJ Executive Chairman, Mark Hart, in highlighting the increased demand for high quality meat products locally, indicated that the company is moving to see how best these needs can be fulfilled, while pointing out that “we have developed and will be rolling out products for the retail market”. He also advised that the company plans to tap into several overseas markets.

Delivering brief remarks, Minister Clarke, in welcoming the facility’s opening, commended CPJ on the extent of its investment, citing it as a strong display of confidence in Jamaica.

Noting Jamaica’s current economic challenges, Mr. Clarke said the Ministry, being mindful of this, is committed to doing everything necessary to pilot the country through these developments, by advocating and facilitating increased agricultural production locally.

“Our responsibility is to encourage local production, and anybody who decides to partner with us, we are prepared to partner with them,” the Minister underscored.

Climate Change

The Caribbean Risk Management Project. Caribbean Climate, 18 February 2013

<http://caribbeanclimateblog.com/2013/02/18/the-caribbean-risk-management-project/>

Full Article

In a region already characterized by high variability in the current climate, climate change represents additional risks for society, economic sectors and the environment. This changing risk profile will have an effect on the outcome of a wide range of decisions affecting individual, societal and economic well-being. In order to plan effectively, decision-makers must assess and be aware of these changing risks.

As our understanding of climate change improves it is becoming possible to gain increasing confidence about some of the expected changes, such as increasing temperatures. However, our knowledge of the climate system is not perfect, resulting in uncertainty around the precise extent of future climate change. Furthermore, we cannot know how future emissions of GHGs will change. Uncertainty also stems from our incomplete understanding of the impacts of future climate on society, the environment, and economies.

Despite these uncertainties and regardless of the effectiveness of emissions reductions efforts worldwide, Caribbean governments must continue to make decisions to plan for the future. The Regional Framework is founded upon the principle of using risk management processes and tools to aid decision-making. Decision-making based on subjective value judgments given the challenges and uncertainties we face, will compromise resilience building. Risk management assists in the selection of optimal cost-effective strategies for reducing vulnerability, using a systematic and transparent process. Policies or initiatives that aim to reduce this vulnerability can be designed to complement and support the goals of poverty reduction, sustainable development, disaster preparedness and environmental protection. The Implementation Plan developed by the Centre to guide the operationalization of the Regional Framework for Achieving Development Resilient to Climate Change highlights as a priority challenge the need to utilize risk management tools and processes to aid decision makers.

The Caribbean Risk Management Project builds on the work started by the Region in 2003 in the development of Risk Management Guidelines for decision makers, but is intended to be more attuned to the needs and special circumstances of the Region given the prevailing conditions. It will also incorporate the development of new tools and risk management methodologies. The Project will be executed in a phased approach. Phase 1 will be the development of a risk management, web-based tool to guide decision making. Phase 2 will provide in-depth training for country decision-makers. Phase 3 will undertake detailed risk assessments in selected countries. The overall objective is to embed risk assessment into decision-making and management systems across the region in finance and planning.

Proposed Aim & Objectives:

- Support climate compatible development in the Caribbean by enabling the implementation of key activities outlined in the IP
- Embed considerations of climate change across the Caribbean, through the development of regional approach to risk management and the creation of a risk ethic in decision making.

The key tasks to be undertaken in this project are set out below:

1 Initial consultation and scoping phase including workshops and in-country meetings in three pilot countries together with a review of existing approaches to risk management in the Caribbean.

2 Review CARICOM Climate Risk Management Guidelines. Develop a revised risk management framework for the Caribbean taking into account the latest developments in climate risk management techniques. This will be fully supported by existing resources and materials and will link into the latest information on climate science, vulnerability assessments and impact modelling, together with economic, environmental and social system baseline data. The new framework will link into the CCCCC information clearing house.

3 Working with the CCCCC to secure CARICOM approval to the revised Caribbean Risk Management Framework.

4 Launch Caribbean Risk Management Framework at a high profile event.

5 Develop an on-line version of the Caribbean Risk Management Framework with full guidance and links to other tools and techniques.

6 Develop an online ‘stress-test/screening’ tool to enable all organisations (including donors and development banks) operating at regional and national levels to take a high-level view of policies and decisions against the potential impacts of a changing climate.

7 Working with the CCCCC to provide assistance and support in implementing the communications plan aimed at raising awareness in the Caribbean regarding a risk based approach to decision making.

8 Develop an M&E programme to assess the effectiveness of the Caribbean Risk Management Framework

Climate Change Risk Management Consultations Underway in Belize. Caribbean Climate, 18 February 2013

<http://caribbeanclimateblog.com/2013/02/18/climate-change-risk-management-consultations-underway-in-belize/>

Full Article

The Caribbean Community Climate Change Centre is leading the third leg of its four country high-level consultations on the Draft Caribbean Climate Change Risk Management Project in Belize today.

The Caribbean Community Climate Change Centre (5Cs) team, along with representatives from the UK based consulting group Acclimatise, is conducting the second set of focal point country consultations to help inform the development of a regional approach to climate change risk management. The consultation process involves three countries with comprehensive development plans — Jamaica’s Vision 2030, Barbados’ Green Economy Strategy and Suriname’s Green Vision. Belize which is also committed to climate resilience has been added for the second round of discussions (Suriname, February 11, Barbados, February 13; Belize, February 18 and; Jamaica, February 20).

The team from the Belize-based Caribbean Community Climate Change Centre (5Cs) includes Keith Nichols, programme development specialist and Joe McGann, programme manager, and they will be joined by Olivia Palin and John Firth of the consulting group Acclimatise. They are slated to meet with officials from ministries with responsibility for finance, planning, the environment and disaster management and preparedness.

The consultation process is expected to result in a regional Risk Management Framework and the creation of a risk ethic in decision making through the creation of a web-based risk management tool, which is slated to be launched in April 2013. This will boost climate resilience in the region amidst increasing threats from climate change. Those threats include rising sea levels and the associated predicted loss of coastal livelihoods; warmer temperatures and the likelihood of increased incidents of diseases such as dengue and increased frequency and/or intensity of hurricanes and droughts.

The initiative is being funded by the United Kingdom’s Department for International Development (DFID) through the Climate and Development Network (CDKN).

Food Safety

Agriculture Ministry to lobby EPA on pesticide use by Chris Patterson. Jamaica Information Service, 20 February 2013

<http://www.jis.gov.jm/news/leads/33029>

Full Article

The Ministry of Agriculture and Fisheries is seeking the assistance of key regulators in the United States, to lobby the Environmental Protection Agency (EPA) on pesticide options.

Portfolio Minister, Hon. Roger Clarke, explained that following on the work of the Food Safety Modernization Act (FSMA) committee, several pesticides have been evaluated and proven effective; however, they are not approved by the EPA.

He said the Ministry will be soliciting the support of the United States Department of Agriculture (USDA) and Food and Drug Administration (FDA) “as we make representation to the EPA for having other pesticide options, besides Botran, which is the only chemical approved to date”.

The FSMA committee was set up to develop a strategy to improve the capacity of farmers and fresh produce exporters to become compliant with the legislation, which is aimed at ensuring the safety of

foods entering the North American country. The law requires that pesticides are used according to their EPA-approved label use.

Minister Clarke, who was speaking at the opening of a training programme in good agricultural practices at the Knutsford Court Hotel New Kingston, on February 18, also used the opportunity to request the continued support of the USDA and FDA in strengthening the country's food safety capacity.

“You will recall that under Section 305 of the new FSMA, there is a regulation which speaks to ‘Building Food Safety Capacity of Foreign Governments’ and we wish to highlight to you that immediately, we are available for such assistance,” he stated.

The five-day course, implemented by the Ministry in collaboration with the Jamaica Social Investment Fund (JSIF), is being executed by the US-based Joint Institute for Food Safety and Applied Nutrition (JIFSAN).

It aims to improve the competencies of officers of the Ministry and the Rural Agricultural Development Authority (RADA), farmers, exporters, among other stakeholders.

Agricultural Development

Government advertises value of local foods by Geisha Kowlessar. The Trinidad Guardian, 19 February 2013

<http://guardian.co.tt/news/2013-02-18/govt-advertises-value-local-foods>

Full Article

In a bid to ensure T&T becomes a food-secure nation and to foster the appreciation of local foods, the Government yesterday launched its corporate advertising campaign aimed at sensitising the public. The event, which took place at Kapok Hotel, St Clair, featured snippets of the benefit of local fruits and vegetables.

Food Production Minister Devant Maharaj, who delivered the feature address, said the campaign cost under \$1 million. And, in the first time in almost a decade T&T will be exporting local crops this morning to Barbados. “This means our farmers would have an additional market apart from T&T,” Maharaj added.

By growing more local foods, Maharaj said, it ultimately reduces the country's food import bill and affords more revenue to farmers. Urging all stakeholders to be holistic in their approach to food production, Maharaj said there were still challenges including consumers preferring imported and fast food.

“Eating patterns and the taste of these consumers have shifted over the years. What we eat today is vastly different from what our grandparents preferred. “We are impacted significantly from various franchises from north America,” Maharaj said.

While the Government had no objection to such mushrooming businesses, the minister called for a greater appreciation of local products. “The purpose of this campaign was also to remind consumers of the great value of our local foods. “We believe that simply telling the consumers that eating local is not enough to capture their attention, thus our campaign delivers a clear and unambiguous message about the benefits of eating local,” he said.

Posters detailing the importance of local food will be distributed to schools as part of the campaigning strategy. The campaign is expected to last a year and will use a variety of media including billboards and radio advertisements. A local cooking show using only locally-grown food is in the works, the spin-off of which is expected to be a cookbook detailing solely local recipes.

Asked about the sometimes exorbitant prices of local vegetables, namely tomatoes, Maharaj attributed that to several variables including flooding and the high prices of pesticides.

On the issue of the mega farms, Maharaj said efforts are still being made to obtain proper clearance from various agencies. “The mega farms, even though they have been allocated the land, that is not the end of the story from the ministry or the farmer.

“He has to get the required approval from the EMA (Environmental Management Authority), and WASA is also involved as well and these agencies have processes that take a considerable amount of time and that has delayed the farmer getting his crops from off the ground,” Maharaj said. He said he has held talks with the EMA and Ganga Singh, Minister of the Environment and Water Resources, to fast-track the situation.

CABI helping region fight poverty. Barbados Advocate 21 February 2013

<http://www.barbadosadvocate.com/newsitem.asp?more=local&NewsID=29313>

Full Article

Over the last 100 years CABI’s work has helped to make significant contributions in the fight against poverty.

That is according to the CABI’s Executive Director, International Development, Dennis Rangi, as he spoke at the Americas and Caribbean Member Country Consultation at the Amaryllis Beach Hotel yesterday.

“CABI is an international, intergovernmental, not-for-profit organisation that improves people’s lives worldwide by providing information and applying scientific expertise to solve problems in agriculture and the environment. CABI originated in 1910, which means that we have now turned 103 years old, and are still growing stronger... The impact of our work is global and it ranges from working directly with farmers to providing innovative solutions at the higher level in industry,” he said.

With that in mind, Rangi said that since its establishment, CABI has been behind the identification of various significant disease-causing pests leading to the development of pest management programmes across the world, including resistant crop varieties.

“This region has also been quite instrumental in our exploration for biological control agents and facilitating the supply of the same to other developing member countries. And there have been some spectacular successes – for example – against the sugar cane stem borer, coconut whitefly and the pink hibiscus mealybug to mention but some,” he said.

Rangi added, “Given our intergovernmental status, CABI develops its programmes in close consultation with its member countries through the Review Conference, which is CABI’s supreme governing body, and Regional Consultations such as this one. We are hoping to identify ways of working with you to support member countries in the region in their quest to address the challenge of food security.”

He said that they will review the progress made in addressing the priority areas identified during previous consultations; identify the key emerging issues influencing and impacting on sustainable development nationally and regionally; share country experiences; and develop regional plans, identify synergies and agree ways of working together. (JRT)

Barbados returns to CABI fold. Barbados Advocate, 21 February 2013

<http://www.barbadosadvocate.com/newsitem.asp?more=local&NewsID=29305>

Full Article

Barbados’ decision to rejoin the international agricultural non-profit organisation, CABI, is timely, given that there are efforts afoot to revitalise and reposition the local agricultural sector.

That was the view put forward by the Permanent Secretary within the Ministry of Agriculture, Food, Fisheries and Water Resource Management, Michael King. He made the comment while speaking at the opening of the two-day regional consultation meeting with the member countries of the Centre for Agricultural Bioscience International (CABI) in America and the Caribbean, at the Amaryllis Beach Hotel yesterday morning, where Barbados was officially welcomed as a member of the 103-year old organisation.

“...In recent times, the importance of a vibrant agricultural sector as a critical engine of social and economic development has been acknowledged globally, this fact has not gone unnoticed here in Barbados,” he added.

The Permanent Secretary noted that his Ministry, being cognisant of the importance of CABI to the work they do, made representation on a regular basis for funds to be made available to rejoin the organisation and Cabinet approved that request last year. However, he noted that despite the prior lapse in membership, Barbados had maintained a close relationship with CABI through the execution of a number of joint programmes and projects, including the management and control of the Pink Hibiscus Mealy Bug.

King said that his Ministry is working to achieve sustainability and food security, through capacity building, the use of modern technologies and the pursuance of a green economy, which he said are in keeping with the core values of CABI.

“... CABI was established over 100 years ago as a not-for-profit science based development and information organisation with the primary focus of solving agricultural and environmental problems through the provision of information and application of scientific expertise. Its membership now stands at 48, which includes 10 countries in the Caribbean,” he said.

He added that over the years CABI has made major strides globally and can boast of accomplishments such as the creation of an extensive knowledge bank; the development of pest management strategies,

particularly the use of biological control agents; microbial services of which Barbados has and continues to benefit; and the establishment of Plant Health Clinics in approximately 24 countries including Grenada and Trinidad and Tobago.

With that in mind, he said that through its membership in CABI, Barbados stands to benefit not only from the expertise which CABI provides through the diagnostic capability of the organisation, but also with the training of the Ministry's technical staff, the transfer of knowledge and improvements in their sanitary and phytosanitary capabilities. The latter, he said, are critical in light of the fact that the Ministry is in the process of establishing a National Agricultural Health and Food Control System, intended to ensure that Barbados' agricultural exports comply with international standards. (JRT)

Agricultural Research

UF scientists identify natural compounds that enhance humans' perception of sweetness by Mickie Anderson, 15 January 2013

<http://news.ufl.edu/2013/01/15/sweetener/>

Full Article

GAINESVILLE, Fla. — University of Florida taste scientist Linda Bartoshuk and her colleagues want to play a trick on you — but it's for your own good.

The UF team has identified a group of naturally occurring compounds that enhance the way people perceive sweetness, and believe that those compounds can be used to make foods taste sweeter using far less sugar and no artificial sweetener.

The group, which includes eminent scholar Harry Klee and professors David Clark and Charles Sims, all of UF's Institute of Food and Agricultural Sciences, has collaborated for several years on flavor- and aroma-related research studies. Bartoshuk is a professor with UF's Center for Smell and Taste, part of the UF College of Dentistry.

UF technology licensing officials are seeking companies interested in finding ways to turn the researchers' findings about flavor into a commercially viable product that can be used to sweeten foods and beverages in a natural, more healthful way. Klee and Bartoshuk will make a presentation in February about the work at the American Association for the Advancement of Science meeting in Boston.

The natural sweetener discovery was made during the group's work, led by Klee, to break down the chemistry behind the complex flavors in tomato.

During that research, genes and biochemical pathways responsible for producing the volatile chemicals that give fresh tomatoes their characteristic flavor and aroma were chronicled, and nearly

100 tomato varieties were tested by scientists and also used in taste tests by 13 panels of 100 people who rated each tomato's taste.

They knew that there are two ways humans evaluate smell: Orthonasal, or through the nostrils, and retronasal, behind the palate while eating. In retronasal olfaction, smell and taste interact.

Capitalizing on interactions between retronasal olfaction and taste, the food industry has sometimes used sugar to intensify people's perception of specific flavors.

Following the tomato taste panels, Bartoshuk had reams of information about the chemical makeup of tomato fruit and everything that had been gleaned from the taste panels about what tasters liked and didn't like.

To discern which factors were playing the biggest roles in people's tomato-taste preferences, she used statistics to examine how the fruit's sweetness was explained both by flavor ratings and sugar content.

"If the sweetness is all due to sugar, then that's the only variable that would've been significant," she said. "But flavor was highly significant. So suddenly we knew that the volatiles were making independent contributions to the perceived sweetness."

The UF team's findings were solidified by similar analysis following a study of taste in strawberries.

"It turns out that fruit has been using this mechanism forever and we didn't know it," Bartoshuk said. "So when you bite into a strawberry, you think when it tastes sweet, you're tasting sugar. But 10 percent of that 'sweet' is in the volatiles. And we didn't know that. So lo and behold, we get all of these data and we do the math, and we're stunned — we have a new source of sweetness, we create it in the brain, with volatiles."

Klee said the potential applications for a natural sweetener are vast and reducing the amount of sugar used in processed foods can only be good for people.

"The fact is that people really like sweet," he said. "And if we can make foods taste as sweet as they currently do without adding sugar? That's really exciting."

Agricultural Institutions

Bioversity International announces incoming Director General. Bioversity International, 21 February 2013

http://www.bioversityinternational.org/announcements/bioversity_international_announces_incoming_director_general.html

Full Article

Bioversity International announces the appointment of Ms M. Ann Tutwiler as incoming Director General.

Tutwiler, currently the Special Representative of the Director-General to the UN/Geneva and World Economic Forum of the Food & Agriculture Organization ([FAO](#)) of the United Nations, brings extensive leadership and agricultural development expertise to Bioversity International. She joins Bioversity as Director General on 15 July.

“Ms Tutwiler is an outstanding candidate to take over the leadership of Bioversity International at a very exciting time for the organization,” says Dr. Paul Zuckerman, Chair of the [Bioversity Board of Trustees](#). “For nearly 40 years, Bioversity has played a key role in agriculture and conservation. The organization is working on innovative solutions to some of the most vital world issues – malnutrition, climate change, poverty – by connecting research with smallholder farmer and forest communities. Ms Tutwiler will help expand our partnerships and networks and continue to push for innovation in research. She is a leader in the field and I am certain her knowledge of the issues Bioversity is addressing will serve us well.”

Tutwiler succeeds Dr Emile Frison, who has led Bioversity International for two full terms since August 2003.

“Under Dr Frison’s leadership, Bioversity has developed a clear set of strategic priorities and a research agenda that the organization will continue to carry forward. He successfully guided the organization through a significant reform process to reinforce its position as a leading research institution. I sincerely thank Dr Frison for his many contributions, and I congratulate Ms Tutwiler on her appointment,” continues Zuckerman.

Tutwiler has almost 30 years of experience in agricultural policy and development working in the public and private sectors. She served as Deputy Director-General, Knowledge, at FAO from January 2011 through November 2012, where she coordinated development of cohesive Rome food agency positions on Rio+20 for FAO with the International Fund for Agricultural Development ([IFAD](#)), the World Food Programme ([WFP](#)) and Bioversity International.

As a member of senior management at FAO, she managed five technical departments including Agriculture & Consumer Protection, Natural Resources Management & Environment, Forestry, Fisheries & Aquaculture, Economic & Social Development and Office of Knowledge Exchange, Research & Extension. From June 2009 to January 2011, she worked in the Office of the Secretary for the U.S. Department of Agriculture, leading and coordinating USDA’s participation in the President’s Feed the Future initiative among other responsibilities. Previously, she served as Senior Advisor of International Affairs for the U.S. Agency for International Development, where she recommended

reforms to USAID programs in relation to international development in Africa. She was managing director of agricultural markets at The William and Flora Hewlett Foundation from 2006 to 2009.

She holds degrees in Agribusiness from Purdue University and Harvard Business School, a master's degree from the Kennedy School of Government at Harvard University, and a bachelor's degree from Davidson College, where she received the John W. Kuykendall Award for Community Service in 2005.

As the Director General, Tutwiler will be responsible for leading Bioversity International, forging effective research partnerships and overseeing the organization's strategic priorities and research agenda.

"I'm excited to lead Bioversity International into the future," said Tutwiler. "The new strategic priorities and ambitious research agenda provide an excellent foundation to improve nutrition, livelihoods and sustainability and enabling productive and healthy ecosystems. I look forward to helping Bioversity deliver critical research for development outcomes, in close partnership with investors, researchers, governments, the private sector, smallholder farmers and forest communities."

Bioversity International is a research-for-development organization working with partners worldwide to use and conserve agricultural and forest biodiversity for improved livelihoods, nutrition, sustainability and productive and resilient ecosystems. Bioversity International is working towards a world in which smallholder farming communities in developing countries of Africa, Asia and the Americas are thriving and sustainable.

Bioversity International is a member of the [CGIAR](#) Consortium, a global partnership that unites organizations engaged in research for a food secure future. CGIAR research is dedicated to reducing rural poverty, increasing food security, improving human health and nutrition, and ensuring more sustainable management of natural resources. It is carried out by the 15 centres who are members of the CGIAR Consortium in close collaboration with hundreds of partner organizations, including national and regional research institutes, civil society organizations, academia, and the private sector.

Upcoming Events

March 2013

2013 Climate Smart Agriculture Global Science Conference

Date: 20-22 March 2013

Venue: University of California

Location: Davis, California, USA

Description: The [2013 Climate Smart Agriculture Global Science Conference](#) promises to bring three important issues under the spotlight: farm and food systems; landscape and regional issues; and the integrative and transformative institutional and policy aspects that will bridge across scales to link science and practice to ensure food security, poverty alleviation and multiple ecosystem services.

Information: <http://ccafs.cgiar.org/events/20/mar/2013/climate-smart-agriculture-global-science-conference>

May 2013

3rd Global Cassava Partnership for the 21st Century (GCP21) Strategic Meeting

Date: May 2013

Location: Bellagio, Italy

Description: The 3rd GCP21 Strategic Meeting, which will take place in Bellagio, Italy, in May 2013, will be focused on a daunting question: *Is it possible to eradicate cassava viruses in Africa?* The select group of 32 scientists and developers from 24 institutions who attend that meeting will focus on the use of a range of technologies to efficiently control cassava viruses.

Information: <http://www.rtb.cgiar.org/news-events/blog/setting-new-ambitious-objectives-for-the-global-cassava-partnership-in-africa>

June 2013

Global Cassava Partnership for the 21st Century (GCP21) second meeting on cassava landraces

Date: June 2013

Location: Tanzania

Description: Global Cassava Partnership for the 21st Century (GCP21) second meeting on cassava landraces is scheduled in June 2013 at IITA offices in Tanzania. The meeting's goal is to deliver products such as draft standard operating procedures to collect, evaluate, preserve and identify these landraces and a roadmap to start the work in East and Central Africa.

Information: <http://www.rtb.cgiar.org/news-events/blog/setting-new-ambitious-objectives-for-the-global-cassava-partnership-in-africa>

49th Annual Meeting Caribbean Food Crops Society (CFCS)

Date: 30 June to 6 July 2013

Location: Port of Spain, Trinidad and Tobago

Description: The 49th Annual Meeting will be celebrated 30 June to 6 July in the Hyatt Regency Hotel in Trinidad. Joint meeting of the CFCS, Caribbean AgroEconomic Society (CAES) and the International Society for Horticultural Science (ISHS). Theme: Agribusiness Essential for Food Security: Empowering Youth and Enhancing Quality Products.

Contact: CFCS website <http://cfcs.eea.uprm.edu/>

July 2013

International Conference on Tropical Roots and Tubers for Sustainable Livelihood under Changing Agro-climate

Date: 9 -12 July 2013

Location: Thiruvananthapuram, Kerala, India

Website: <http://isrc.in/internationalconference2013/>

Brochure <http://isrc.in/internationalconference2013/Conference%20Brochure.pdf>