Choices

Caribbean AgriCulture

Our Way

This publication is dedicated to the many micro, small and medium entrepreneurs around the Caribbean, who maintain a positive attitude, devise local and practical solutions to big global challenges and adopt a proactive stance, oftentimes against all odds, to make the situation better for the rest of us in agriculture and the economy. You are like an egg – small, but packed with potential; the start of something much bigger than yourself.
Stand up and be counted!

Caribbean Regional Agricultural Policy Network

Technical Centre for Agricultural and Rural Cooperation

Inter-American Institute for Cooperation on Agriuclture

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Foreword

“You always have a choice!”

This is not a quote from some slick motivational speaker; that is our Caribbean reality. The true accounts you are about to read will justify that statement. Twenty or so years ago I lamented over the fact that a professional career in agriculture was one of the best-kept secrets in the Caribbean. I was moved to write a book laying out many of the options available to young people or mid career professionals at that time. Back then I suggested that to choose a career in agriculture was to publicly admit that you were not bright enough for the glamour professions. I have spent many years attempting to destroy that myth.

As we continue to grapple with concerns about nutrition security, the powers that be are more often focused on unhealthy imports of empty calories. I continue to marvel at how several Third World societies channel their best young minds to medicine or law, and leave the provision of proper nutrients (wellness and preventive medicine through proper nutrition) to the least trained and educated. As quoted by Lennox Lampkin, we depend on the “pharm-acy” instead of the “farm-acy”.

It is therefore a singular honour and a source of great joy to be part of this publication. We have highlighted some of the choices made by people from all walks of life. There are encouraging instances of people making “deliberate choices” to be part of this vibrant rewarding sector. Agriculture and food production should not be about occupations of last resort. There are many bright, well-educated, unheralded young people and seniors choosing to earn a very comfortable living from the provision of agricultural goods and services. We hope that their stories inform, educate, inspire and reveal lessons for others who are still ‘on the fence’ about making a choice for agriculture.

We chose AgriCulture! Will you?
Steve Maximay

The Barbados Agricultural Development Marketing Corporation (BADMC) is on a mission "to develop agriculture through innovative technological applications, technical and marketing research, and to create opportunities for investment that engenders enterprise, food security and prosperity in the agricultural sector". Its product development arm has spearheaded a range of value-added products from locally-grown cassava and other root crops that extend shelf-life and enhance utilisation and consumer acceptability of local foods.

Information: extracted from BADMC website;
Photo: Collin Wiltshire

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Diane Francis
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Farmers have been "liming" long before the night club scene and "on de block" came in style. Seriosuly! Several farmers in the Caribbean must lime if they are to obtain good crop yields from acid soils.

Agricultural Lime or Aglime, is a fine limestone material, a common method to reduce soil toxic levels, encourage soil bacteria activity, increase efficiency of applied fertilizers. and make soil more resistant to erosion.

Photo: CARDI

"Life is not a continuum of pleasant choices, but of inevitable problems that call for strength, determination and hard work."

Indian Proverb

There is a view that if you ask an agriculturalist in the Caribbean about a career choice for their son or daughter, agriculture will not be their first, second or third option. Why? Because of myriad challenges that have and continue to plague the industry, particularly in farming. However, in the last five to ten years, as trade, technological and other innovations have widened business options along the agri-food value chain; as food and fuel price increases have forced citizens, from Heads of Government to single-headed households to take stock of their food and nutrition security and quality of life; and as other economic sectors, notably tourism, fall prey to global financial and economic crises, agriculture in all its dimensions, is once again being promoted as a viable career choice, an under-exploited investment opportunity and an industry of strategic importance to national and regional security.

WELCOME to Choices!

An attempt to put on paper, a few of the several individuals, farm families and community groups in the Caribbean that have made the choice to enter, stay and focus on achieving success in agriculture.

These 'self-starters' oftentimes go against the odds, but end up doing small, yet wonderful works, sowing seeds of success in agriculture. They are unique 'agri-preneurs' in that they have taken big risks in small operations and have found practical ways of tackling common challenges of staying gainfully employed, putting food on the table and securing the health of the Caribbean.

Most of them may never make the headlines, but their stories need to be told to prove that 'it can be done' and to inspire others like themselves to take the initiative! We are happy to tell the stories of some of these Caribbean gems and to show, through their experiences, that despite the challenges, AgriCulture and food production are still alive and well! We tried, as much as possible to cover the entire CARICOM region, and as well offer a diversity of experiences in the food and non-food agriculture value chains.

Enjoy and feel free to share.

Diana Francis

Contents

Promotional poster prepared by the Trinidad and Tobago AgriBusiness Association's (TTABA) Cassava Industry Development Committee for its 2012 Cassava Week

Food for Thought

No one in the Caribbean wants a repeat of the 2007-2009 food crisis which at the extreme, led to riots in the most impoverished country of the region – Haiti.

> *"The current situation in world food markets, characterized by sharp increases in maize, wheat and soybean prices, has raised fears of a repeat of the 2007-2008 world food crisis from happening. We need to act urgently to make sure that these price shocks do not turn into a catastrophe hurting tens of millions over the coming months."*
>
> "Tackling the root causes of high food prices and hunger" by José Graziano da Silva, Kanayo F. Nwanze and Ertharin Cousin. Joint statement from FAO, IFAD and WFP on international food prices. 4 September 2012, Rome.

The recent drought (June – August 2012) in the main corn producing regions of the United States (US), has resurrected fears of another impending food crisis. Corn, is a standard and basic and an almost irreplaceable staple in the local diet, consumed on-the-cob, as whole or creamed kernels or as corn meal, which makes the ever popular cou-cou, pastelles and cornmeal porridge. Corn is also the main ingredient in animal feeds that support the region's strategic poultry, pig and other livestock industries. Corn is also the main crop used in the production of sweeteners (high fructose corn syrup) and ethanol, with the latter creating global debate over corn for food or fuel.

Corn is among the five 'imported' food crops that form the base of Caribbean diets. This situation certainly does not augur well for food and nutrition security in the region. This was well recognised by Dr. Chelston W. D. Brathwaite at a 2008 CaRAPN Agriculture Round Table (ART), as he cautioned that "*it cannot be business as usual when we accept that our nutrition must be based on five basic crops:- wheat, corn, potatoes, rice and soy beans... and there are 270,000 species of plants in this world; and we decided or someone decided for us that our nutritional base must depend on a narrow base of genetic material that someone else defines. So the things that we produce, we don't want to eat and the things that we want to eat we can't produce. We find ourselves in a very difficult situation*."

In writing on the unfolding situation with the recent US drought, a daily newspaper in one Caribbean country stated that there will be implications for the population when the prices of basic foods increase. Interestingly, the example used as this 'basic food' was sugar. Nutritionists are clear that 'sugar' is not a basic food item. While sugar and its by-products are an important aspect of global production and trade, sugar is not part of the basic food groups that constitute the basis for nutrition or a healthy diet.

This provides an entry point to expand one's thinking about food and nutrition security (FNS). Since 1996, the United Nations World Food Programme (WFP) explained FNS as existing 'when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'. This FNS concept was broken down into: (1) food Availability, (2) household Access, (3) food Utilization/Nutritional adequacy and (4) Stability of these three elements.

In a post-2009 food crisis context, there is now a growing view of the need to revisit and rethink exactly what FNS should really mean.

The Regional Food and Nutrition Security Policy (RFNSP) concluded that in the Caribbean, hunger is caused by poverty and inequality, not because of food scarcity. In concluding that the major threat is access to affordable and nutritious food, the RFNSP called for a 'moving away from equating food security with food availability, since there are sufficient food calories to meet recommended population goals'. It further stated that 'food security is being compromised by lack of access and excessive utilisation and consumption of sweeteners and fats/oils'. The data on obesity and other chronic non-communicable diseases, provide sufficient evidence that this is indeed so. It is a fact that the so-called 'unhealthy foods' are more affordable and accessible. However, in several cases, compromised food security is also due to the factors informing/driving purchasing and consumption choices of individuals and households –an issue linked to 'food acceptability' and its influence on food choices.

Caribbean countries are once again promoting heavily, the need to 'grow what you eat' or 'eat local' as a means of securing food and nutrition. This implicitly assumes that locally produced foods are more affordable, safer and of higher nutritional quality than imported foods and offered in forms that are acceptable to the consumer. This is yet to be validated.

The Caribbean Food and Nutrition Institute (CFNI) took pains in emphasising the importance of understanding 'nutrition' and in factoring nutritional guidelines in the food system, from production to consumption. Their guidelines strongly advocated for a balanced diet, comprising six key food groups – staples, legumes, vegetables, fruits, food from animals and, fats and oils, in that order.

Therefore, to understand the FNS concept, is to understand nutrition, and more importantly, to base production, importation and consumption decisions on a healthy balance among the major food groups. In this regard, an issue is whether all households have access to, and can afford foods in each portion of the 'healthy plate'. Another issue is whether all households, especially the most vulnerable, have the information and support systems to exercise their right to make that healthy choice. The stories featured in this publication, of stakeholders and actors who made the choice to invest in agriculture, suggest that there is scope for individuals, households and communities to take actions that will enable and empower them to make the healthy choice.

So, back to the impending food price crisis!
There is once again growing concern in the Caribbean over rising prices for basic staples – corn, wheat, soy bean, rice, potatoes - most of which are imported. These concerns are valid since these products and their derivatives hike up the food import bill. But these concerns also distract attention from the fact, that countries of the region have always had a diverse range of crops that can effectively replace dependence on at least three of these five imported 'basic foods'.

Guyana and Suriname grow and export rice on a large scale. Haiti, Jamaica and Trinidad and Tobago are rebuilding their capacity to grow rice for local consumption. If the region is able to sort out the 'hiccups' in intra-regional trade in agricultural products, then the ability of the region to satisfy its rice food needs will be much enhanced. Jamaica has enhanced its capacity to produce 'white' potato, a major consumed staple in the Caribbean. However, when current efforts to expand production capacity in cassava, sweet potato and a range of other staples and their processed products are included, it also becomes clear, that with smoother intra-regional trade mechanisms, the region can meet it staple food needs. There are small but definitely successful attempts to blend and eventually replace 'wheat' to produce the ever popular baked goods, especially breads, which ironically are also major imported items. This takes care of the largest portion serving on a healthy plate; staples or carbohydrates - the energy foods! What is left? Portions from the legumes, vegetables, fruits food groups.

There is also enough evidence to prove that Caribbean countries can more than meet their own food needs in these food groups, from backyard gardens, small-scale semi commercial operations in the smaller Eastern Caribbean states, to fully commercialised mega farms of Trinidad and Tobago. The issues to be resolved here relate largely to affordability, quality consistency and seasonal variability (elements of competitiveness), and as well, acceptability. There is a good basis for concluding that products in these food groups, at least in their fresh form, can be supplied from local sources. The capacity to produce these in their value-added formulations, in a manner that is competitive with imports and acceptable to the Caribbean citizens' palate, is still very much under-developed.

The balance? Food from animals and fats and oils!
A few Caribbean countries – Barbados, Belize, Guyana, Suriname, Trinidad and Tobago and Jamaica are the major producers of animal products. However all countries have and are developing capacity in some key livestock industries with a focus on poultry and small ruminants. Since demand for food from animals is high and rising, it is unlikely that the Caribbean will be in a position to feed itself and hence imports will continue to be an important source for meats, dairy and other animal products.

As far as fats and oils are concerned, the region's coconut and palm based industries are virtually non-existent. There are some small and local attempts to develop specialty products, such as extra virgin coconut oil. In the medium term, it is unlikely that the Caribbean oils and fats industry will

be in a position to knock the soy bean and other temperate-based oils and fats products off Caribbean supermarket shelves. But in any event, the oils and fats portion on a healthy plate is fairly small, and the nutritionists will indicate that one's requirements for healthy oils and fats can be met from several fruits (especially avocado), nuts, fish and meats among others.

So, should we consider ourselves to be in a crisis?
Even with the periodic vagaries of the weather, impacts of climate change and the occasional destruction of farmers crop lands for homes, highways and hotels, do we face a genuine food and nutrition crisis?

One thing is certain – the region needs to take swift, coordinated collective action to ensure that we do not inadvertently place ourselves in a situation of food crisis. One such swift and collective action is to recognise, acknowledge, facilitate and add value to the efforts of existing agripreneurs, who have chosen business development as the path to growth and food security. While large, pan-Caribbean and international companies are critical to the economy, it is never wise to put all of one's eggs in one basket. Micro, Small and Medium Enterprises (MSMEs) are as essential to economic growth and development, as are the few large-to-mega regional agri-based industries. Though small, it would be wrong to under-estimate the potential and value of these numerous MSMEs that form the base of the economic pyramid. Can you imagine the impact on community spirit, building of critical mass, rural development and the multiplier effect on the national economy, if each community, in each Caribbean country, had two or three proactive agripreneurs, like Maabo (Suriname), or Veronica (Grenada), or Twin I (Antigua), or any of the other featured agripreneurs who provide employment for at least two or three more people!

These agri-preneurs have also been taking actions, with or without an enabling policy environment and supportive institutional framework, on strategic actions defined in the RFNSP Action Plan, including actions that:

- support school feeding programmes, including school gardens;
- promote alternative practices for sustainable food security;
- promote home food production-backyard/container/protected environment gardening and small ruminants rearing;
- promote more efficient water and land management systems inter alia to address shortages and excessive rainfall;
- train farmers in appropriate production practices (e.g. conservation farming, zero tillage etc.) to adapt to the changing environment;
- link food producers/suppliers to markets;
- strengthen supply/value chain integration to increase supply capacity;
- strengthen development of agricultural cooperatives and farmers' organisations to enhance small-scale farmers' resilience;
- promote entrepreneurship to improve livelihoods and reduce poverty in rural populations and marginalized urban dwellers;
- promote public and private sector partnerships for efficient and sustainable food chain development and services.

It is worth re-emphasising that this publication recognises and acknowledges just a small sample of the efforts of numerous individuals, households and communities who have made the choice to cultivate food crops, add value to farm produce and contribute a diversity of food products to the national and regional food system across the Caribbean.

Diana Francis, IICA/CaRAPN

"Opnion"

How did we get there?

Godfrey Eneas

A number of CARICOM states have transformed their economies from agriculture to services, principally tourism and financial services. This economic transformation has been directly linked to the growing reliance of CARICOM states on imported foods, valued between US$3.5 to $4 billion annually.

In the Bahamas, the Agricultural Sector's output is slightly less than 1% of a seven billion dollar economy which is dominated by services. The food import bill has been escalating since the 90s, as governments have held the view that local food was too costly to produce and local producers, mainly small farmers, just could not compete. No consideration was given to the fact that there was no investment in research, training and the introduction of new technologies in order to enhance the competitiveness of the farming community.

Goat rearing on a small farm on Acklins Island in the South-Eastern Bahamas. Photo: Godfrey Eneas

In tourism, the sector responsible for propelling the Bahamian economy since the mid '50s, the demand for imported food has sky rocketed. Between 1995 and 2010, the value of imported food increased from $208 million to $515 million. This corresponded with the increase, over the same period, in visitor arrivals which went from 3.2 million to 5.2 million - a three million increase over fifteen years.

Presently, The Bahamas is engaged in a $2.4 billion mega resort destination Baha Mar Project on Cable Beach, comprising a hotel/ condominium complex and the largest casino in the Caribbean. When this project comes to full development, the value of food imports will be, at least, a billion dollars by 2014/15.

Apart from the impact of visitor arrivals on food imports, particularly stop-over visitors, The Bahamas has become a fast food eating society, greatly influenced by the proliferation of US fast food franchise outlets like Kentucky Fried Chicken, McDonald's, Wendy's, Burger King and various pizza operations like Dominos. These US franchise outlets account for millions of dollars in imported foods in order to meet franchise guidelines and stipulations. With more and more women in the workplace, fast food outlets offer relatively inexpensive convenient foods for breakfast, lunch and dinner.

Further, as a result of a duty reduction policy, to placate consumers and accommodate food importers, particularly the hotel industry, a range of duties were reduced. This caused the closure of the largest poultry producer, Gladstone Farms, which resulted in the escalation in the importation of poultry by-products (leg quarters and wings). The duty lowered from 70% to 35%, was further reduced to 20% in 2011. In 1997 broiler meat output in The Bahamas was valued at $22 million; by 2006 it bottomed-out to $7 million – a decline of 60%. This was an industry which was employing about two thousand Bahamians most of whom were single mothers working in processing. Six years later, broiler production has almost disappeared!

It has taken three decades for the global community to conclude that it is in everyone's interest to strive for self-sufficiency in food production. Governments must initiate policies and programs to achieve this objective

"Recognizing that agriculture is an integral part of any sustainable economic development plan, my Government will give focus to increasing food production as a vehicle to promote food security, create jobs and boost domestic investment." (throne Speech of the Hon. Perry G. Christie, new Progressive Liberal Party Government).

Corn production, on a small farm on Acklins Island, South-Eastern Bahamas. Photo: Godfrey Eneas

HOOPSS on the ground, literally! Photo: IICA Saint Lucia

In Focus!

Engaged YiA
Youth in Agriculture

Young people everywhere are confronted by a paradox: to seek to be integrated into the existing society or serve as a force to transform it.

From Youth at the United Nations
www.un.org/youth

Choosing a sure bet!

As with most youth in rural Dominica, seeing and sometimes helping their parents and/or community members on the farm is a normal way of life. **Danny Honoré** was no different except he chose to do something different from the usual growing of bananas, plantains and root crops.

Just do it!

Driven by a passion for agriculture but a need to do something different, Danny decided that eggs just seemed like an interesting thing to do. At the age of 21, Danny started poultry-egg production. With the backing of his father's assets, he secured a loan from the Credit Union to build cages and purchase 400 layers. Danny began DH eggs in the small village of Taubino in the 'high' North of the island.

Not too long after he began selling his eggs in neighbouring villages, including Taubino, Vielle Case and Thibaud. Soon people began looking for the local eggs, as they are always properly cleaned and neatly presented to the customers.

Danny's business has not been without difficulties. But he has been able to solve them along the way. He has managed to build customer loyalty and maintain sales even during periods of overproduction of eggs in Dominica. Poultry egg production has been an enterprise of choice for a large number of small producers in the Caribbean. Producers know from past experiences that demand for eggs spikes at certain times of the year, especially Christmas. Although there are a number of other producers around the island, DH eggs has grown significantly.

Seven years later, DH Eggs continues to be successful, with hopes of expanding both production and customer base. Danny now has 1000 layers. And despite this increase in flock, his eggs never remain unsold. He has been able to weather the competition through customer loyalty, cultivated by good and consistent service which ensured that they always receive eggs.

Danny no longer supplies eggs only to his local community and neighbouring villages. He has expanded his customer base, supplying thousands of eggs on a weekly basis to two leading supermarkets in Dominica, 7-11 in the South Western capital of Roseau (some distance away from his farm) and Whitchurch IGA in Portsmouth (closer to his location).

Danny recognizes that others who attempted to start their own agri-businesses in poultry and other areas were unsuccessful mainly due to lack of funding and/or resources and access to credit. Fear of taking the risk is also a real hindrance to starting a small business. He believes that Government should facilitate grant funding and/or credit for small farmers in order to encourage persons to start their own business.

He advises anyone going into agriculture to be willing to make sacrifices and to make large investments, as they will reap the benefits in the long run. He also believes that such persons should invest in their own equipment, including vehicles, in order to help make their business more efficient.

Now 28, and seven years in the business, Danny considers himself to be a successful, industrious business-man, who has been able to venture into other sources of income generation as a result of his success with DH eggs.

Story and photos: Ashley Massicotte

Agriculture Calling!

Thirty-one year old **Kondwani Williams** of Dominica, is a lawyer by training, but an agri-preneur by calling. From as early as 7 years, when he took the balance of vegetables from his mother's basket and planted them in the soil, his fate was sealed! He remembers saying, "Mum, I planted them, I planted them for you!" Instead of blowing up in anger, his mum simply smiled. That smile was the license he needed to pursue his dream.

Inspired young!

Kondwani's love for agriculture was nurtured through his primary school's 4H Club's "Introducing Youth to Agriculture" programme and continued through college (16-18 yrs) rearing pigs and rabbits. On graduating from Law School in 2004 in Trinidad, Kondwani left his books and instead filled his suitcase with seeds purchased from Caribbean Chemicals, intent on resuming farming and pursuing agriculture on a serious basis in Dominica. However, his father had other plans that required him, instead, to practice law, a matter "not open for discussion'. So one Monday morning, he showed up for work at a local law firm, a 'job' that was short-lived.

In late 2005, Kondwani opened his own law firm. He soon realized that he could not survive by just waiting on clients. Agriculture was his way out! He began scouting the island for land, especially abandoned farms. In 2008/2009, he acquired over 10 acres of land in Giraudel, a citrus plantation that had been abandoned for over 12 years. This was his opportunity to secure his future. His farm would become a major part of his retirement plan, to sustain himself and his family. Dominica was once the world's largest exporter of limes and grapefruit.

Through informal inquiries, he obtained citrus planting material from a small independent nursery operator- John (Stani) Xavier. He replaced the diseased and dying trees with new young plants. He now has over two thousand citrus plants including ortanique, valencia, limes, West Indies limes, pink grapefruit, tangerine, ruby-red grapefruit and other citrus and four hundred avocado trees. All citrus planted 3-3 ½ years ago are presently yielding their second or third crop. He has already begun reaping the rewards of his investment, as he sold 30,000 grapefruits in March 2012. He also has plantain, dasheen, cabbage, broccoli, cauliflower, beet, carrot, thyme, stevia, celery, parsley, rosemary, and organics such as pomegranate, pawpaw, cherries, quava-cherries, mango-stain, coffee, gooseberries, passion-fruits and pineapples.

He operates the farm as a business, keeping records of purchases and sales. He provides continuous employment for two individuals. But he has had challenges, including high costs and unreliable farm labour. He has, however benefitted from government concessions on agricultural inputs which have helped to offset some of his operational costs. He embraces innovation and good practices, using brush-cutters and biological weedicides for weed control. He stays informed and up to date on regional and international agricultural and food production practices and policies, attending the annual Agriculture and Food Policy Conference in Florida and most local trade shows.

His immediate plan is to plant pineapples throughout the farm as both a measure of weed control and as a second main income crop. He notes that pineapple is a very resistant crop, which, along with root crops, is a favourite among the agouti that constantly feed on his farm. Kondwani is actually impressed by these agoutis and thinks that they are among the most highly intelligent animals that he has seen as they have developed ways of eating the parts of the plants below the soil surface without disturbing that which is above the soil.

Kondwani laments the state of Agriculture in Dominica. He believes that Agriculture should be mandatory in all schools to help overwrite the concept that agriculture is only for non-academics and school drop-outs. Most rural families in Dominica own at least a small parcel of land. However, most also leave rural areas to seek employment around the city leaving these lands uncultivated or abandoned. He believes that a shift in mindset is urgently needed among the general public and especially the youth to get them re-engaged and involved in agriculture.

Story and photos: Ashley Massicotte

Beyond dreaming; Doing!

In less than 20 years, **Yolande Désir Pierre**, a young woman from the rural Haiti, has become one of the most successful business women of her generation. This is certainly unique in Lascahobas, a small town near the border with the Dominican Republic.

A young woman of substance!

Yolande, now 38, and third of 4 siblings, grew up in the agricultural community of Lascahobas, which despite its agricultural potential, has been declining over the years. Driven by a passion for agriculture and rural development, Yolande took advantage of a World Bank training programme and became a certified agroforester. She worked in a Government project and then for an international NGO. During this time, she built a network that evolved into a small enterprise - providing technical advisory and project management services. Backed by her network of friends, she established ATEPASE (Association des Techniciens pour la Promotion de l'Agriculture et l'Environnement du Sud Est), and now manages a project funded by the Spanish Cooperation Agency, which is very active in her community. She also invested in herself and established a farm.

Yolande's plots are planted in black and/or red beans, which earn her roughly US$1,000 per harvest. Her hot pepper is even more valuable, with sales of about US$2,000. She is also a problem solver! Confronted with transportation problems to take her harvest to market, Yolande buys a pick-up and with steady earnings, especially from hot peppers, she has been able to repay her loans. Through her own enterprise, Yolande creates jobs in the sector. She employs several of her colleagues as technicians in ATEPASE. She shares her knowledge and skill with others. All her techniques and skills are applied by her workers on her farm and also on their own small plots. Over time, neighbours start to improve their production methods too, especially after observing the convincing yields.

Yolande is proof that vision, acquiring knowledge and steadfast determination can open doors to a higher quality of life. Given her background and the situation in Haiti, what she has accomplished is exceptional. She inspires a new generation of youth who view her as a role model, with a realistic means of escaping unemployment and poverty through agriculture.

Throughout her journey of self-empowerment and development, Yolande has remained true to herself, still driven by passion and perseverance, to change her future and provide a better life for her family. Yolande has become a reference point in the Lascahobas region.

With an enterprising spirit, Yolande has big plans for the future, with several interesting projects.

- Productivity is good, profits are healthy; business is doing well. But that is no reason to settle! In a few months, she intends to increase hot pepper production by 40,000 plants. She expects this to similarly increase her profits by more than 20% over her current earnings.
- With information that the mango industry in Haiti is valued at US$20,000,000 annually, she intends to have a slice of the market. She plans to acquire a 7.4 acre plot to produce mango. This expansion into mango is the 'college fund' for her children.
- She is exploring all options to establish modernized agriculture and is developing an investment plan to acquire a 12.3 acre field to produce legumes and other crops for the local market. The prospect of producing under greenhouses or other protected agriculture is very tempting indeed.
- Yolande is certainly not myopic! She plans to diversify her economic portfolio. Her sights are set on investing in a gravel production plant to take advantage of demand for good quality construction materials in her region. She already has some major equipment, but she needs to invest up to US$150,000. She estimates that in less than 5 years, her enterprise will be worth around US$1,000,000.

Story and photos: Alain Thermil

Investing in my business!

31 year old **Twin I Payne** of Collins, Antigua, has been in business for the past 11 years, i.e., the business of farming. Established in 2001, Twinstod Enterprises now has a combined approximate acreage of 20 in two locations at Newfield and All Saints managed by Payne. His business employs approximately 13 farm assistants and produces a wide range of fresh vegetables: -pumpkins, cucumbers, sweet potatoes, sweet peppers, carrots, string beans, tomatoes, table squash, corn and eggplant.

Driven by the market!

Sweet potatoes and carrots, though part of the agriculture tradition, are not widely grown by many farmers in Antigua & Barbuda. They sell to a relatively large niche market, comprising 14 supermarkets, 8 hotels, and more than 19 vendors. To meet market demand, Payne has come up with a win-win solution: practicing sustainable use of land and natural resources on both farms; producing a diversified basket of fresh vegetables and pursuing strategic collaborations with existing private traders, exporters, government and non-governmental organizations to sustain presence in the supply chain. Twinstod Enterprises also engages in post-farm value adding, by roasting corns and offering a restaurant service. Demand for fresh, dried and cooked vegetables far outstrips local supply, which to Payne, is an opportunity ripe for the picking!

Payne invested in all the necessary resources to start his business, including financial start-up and training his staff and workers with support from the Extension Division. Apart from the Government-run Agricultural Development Corporation, Payne is the only farmer to own a farming machinery pool, comprising of potato harvester, brush cutter, boom sprayer, tractor and a fleet of other farming equipment and vehicles.

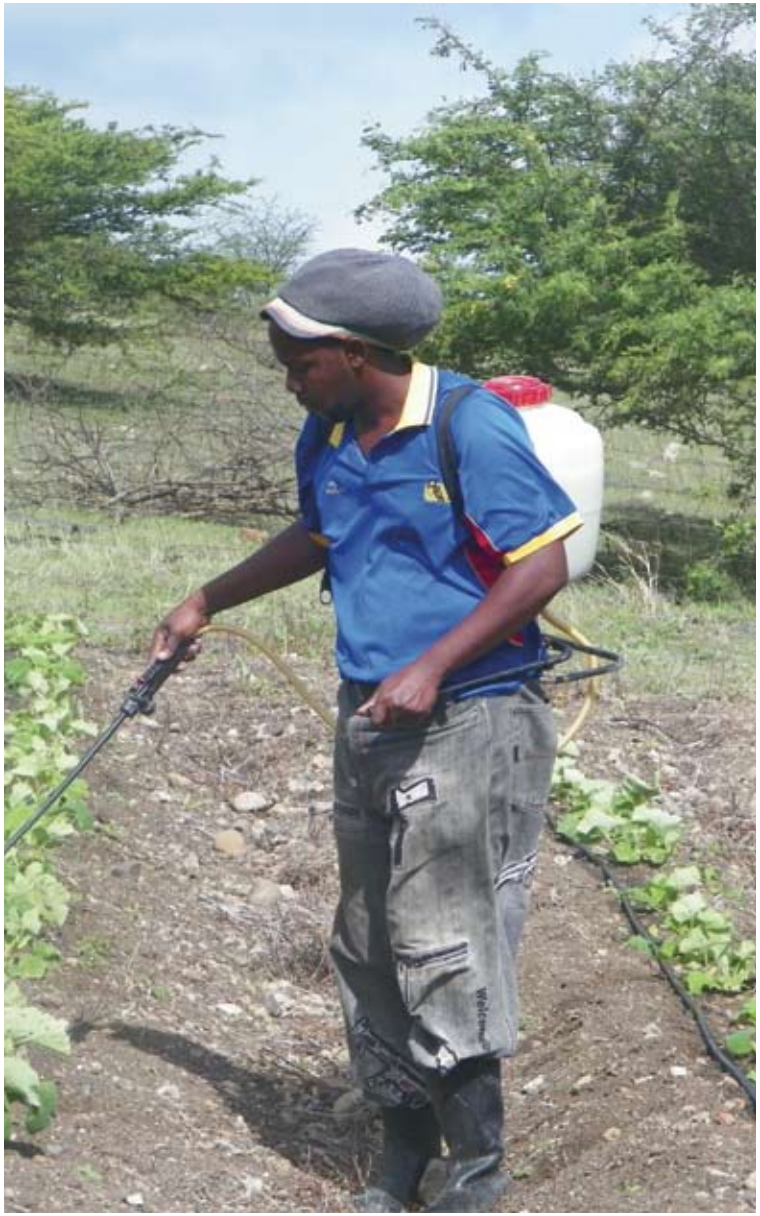
Twinstod Enterprises clearly demonstrates that young people are not only attracted to farming, but are approaching it as a business. He is also a living laboratory to show one need not wait for, or depend on government support to start and sustain a business. However, he readily admits that there is need for the right policy environment to create incentives for farmers to enter emerging markets and to sustain their business through Good Agricultural Practices (GAP) to minimise the negative effects on the environment.

GAP is an integral part of Twinstod Enterprises, which utilises organic matter on the farm. Several nursery and garden supply stores in Antigua now stock a wide variety of organic fertilizers. Many organic materials are produced around the home, or can be obtained at little or no cost from livestock operations.

For Payne, forging relationships and sustaining linkages in the market is a precondition for business success. Private traders can help farmers and farmers' groups improve their capacity to link into markets and supply the quality of produce that will satisfy consumer demand. He believes that it is in the explicit interest of traders to lower their costs and enhance the value of the product by outsourcing, for example, labour-intensive activities such as cleaning, trimming, and packing. He believes that it is also in the interest of farmers, since such post-harvest support could enable them to fetch higher prices for high quality products.

Payne plans to use his successes to support other small farmers in replicating his carrot and sweet-potato production-to-market experience. Prospects for adoption by several other small producers look very promising since the initial land and financial capital resources needed are relatively small. This is a plus especially in a small country. The production techniques involved are also within the capacity of individuals with no particular agricultural background. This is also another plus for Payne. However, he is clear, that the essential precondition for successful replication of his business experience is the development of the marketing link with a trader. Payne has already established several links with major supermarkets on the island.

As a youth farmer, he has been widely recognized for his achievements. He has made history in 2009, 2010, 2011 and 2012 when he emerged as the youngest farmer to participate and represent Antigua & Barbuda in the regional Agri Fest in St Croix. For the three consecutive years, Payne's crops and displays were adjudged third and second, respectively, among more than 60 other participating farmers from around the regional. From participating in the AgriFest, Payne is seriously contemplating expanding his farm operations to St. Croix by 2013, to link more directly to the consumer while eliminating shipping, middlemen and other costs of trade.



Payne, a qualified Accountant, left a secure, high profile and well paying job at the lone energy company - The Antigua and Barbuda Public Utilities Authority (APUA), to take the risk of farming. His membership in the Antigua & Barbuda Agriculture Forum for Youth (ABAFY), led and supported by IICA, contributed tremendously to his successes in the field of agri-business, through training, securing of markets and capacity building. ABAFY, part of a region-wide initiative comprises mainly of youth between the ages of 16-35.

A former ABAFY vice president, Payne confirms that "*the organization, through IICA, helped me in so many ways to enhance my income, quality of life and also develop my leadership and negotiating skills and the ability to work well with others in group*."

Since its inception in July 2003, ABAFY has collaborated with the Ministries of Education, Youth Affairs, Agriculture, and with IICA to launch an agricultural competition within seven schools across the country. The competition seeks to support the strengthening of the agriculture science programme in schools and promote the importance of agriculture and food security. Payne stressed that these programmes are "support facilities which are practical, accessible and relevant to their needs and also provide opportunities for sustainable livelihoods and improved quality of life from agri-business. It is the right approach for youth, gives a level of independence with the training and assistance and helps shape the future of agriculture, in innovative ways".

Story and photos: Onika Campbell

Exposing youth to farming, especially at the primary school level is one measure being taken by governments, private sector and non-governmental organisations in the Region. In St. Vincent, the farmers group, the Eastern Caribbean Trading Agriculture and Development Organisation (ECTAD), is reaching out to schools and engaging youth, such as in Vermont, to get them interested through school gardens and 'labour' sharing on farmers plots and as well as to sensitise them on the linkages between agriculture to health and nutrition.

Information and Photo: ECTAD

Professional Youth Agripreneurs

Q: What does food security, healthy eating habits, innovative agripreneurship and succession planning have in common?

A: YiA – youth in agriculture!

Engaging and keeping youth interest in agriculture at all levels and in all links in the farm to market chain, has been a running challenge for policy makers in the Caribbean. There is one particular category of YiA that has almost slipped through the cracks –young University graduates. In recognising the pivotal importance of young agricultural professionals in sustaining agricultural development and food and nutrition security, Caribbean countries are taking some novel actions aimed at cultivating professional agriculturalists, including graduate farmers.

Photos: Tsian Carr

The Trinidad and Tobago Agricultural Professionals Development Programme (APDP)

For far too long we've spoken about the need to transform the agricultural sector, introducing new technologies and encouraging youth involvement. Farmers are aging, but more worrisome, is that their children in many instances are not willing to go back to the land, daunted by memories of hard manual labour in the hot sun. This image has skewed their vision of a dynamic and high potential sector. Additionally, many look at agriculture in pure production terms, failing to recognize its wider impact on food, nutrition, health, the environment and the economy.

In Trinidad and Tobago, we have relied on petro-dollars to sustain our high food import bill. Continuation of such a practice will only work to our demise, as global population growth has placed severe pressures on food supply. Countries are already restricting their exports to facilitate their own food demands. Biofuels and climate change have placed additional constraints on limited natural resources. These factors put significant pressures on food production for human consumption. According to Nobel Peace Prize Laureate, Norman Borlaug, "Civilization as it is known today could not have evolved, nor can it survive, without an adequate food supply."

Given the pressing need to boost local food production, youth participation is deemed to be imperative. Interestingly, we have hundreds of young persons' engaging in formal agricultural education at the tertiary level at the Eastern Caribbean Institute of Agriculture and Forestry campus of the University of Trinidad and Tobago, and the University of the West Indies on an annual basis. There is a fair range of options for these students: Diplomas in Agriculture; Animal Health and Veterinary Sciences; Forestry and Bachelors of Sciences in Agriculture; Agribusiness and other combinations of agriculture. But the question is, "Where are they today?"

It is often discouraging to meet these University graduates and hear their stories. Many are employed in positions outside of the sector due to limited opportunities and those interested in agricultural entrepreneurship lack the resources to start a business.

Disenchanted, they walk away, some still looking for an agri-opportunity whilst the rest join the un-kept statistic of human capital lost to agriculture.

Recognizing this ongoing loss of educated young people, the recently launched Agricultural Professionals Development Programme (APDP) was conceptualised by the former Minister of Food Production of Trinidad and Tobago, Mr. Vasant Barrath, as a means of increasing the number of farmers for food production. The APDP, designed to build capacity of agriculture alumnae to meet the challenges impacting the domestic agricultural sector, is one of two new training programmes that the Ministry has recently embarked upon. The other is the Unemployment Relief Programme (URP) Re-training Initiative, which seeks to provide labour for agricultural production. Collectively, these programmes act as a catalyst to achieve the objectives of the National Food Production Action Plan 2012-2015.

APDP, thus operates as a platform for engagement of graduates with a vision, "To assist Trinidad and Tobago to become a more food-secure nation through the creation of a globally competitive workforce of agricultural graduates through professional and technical skills enhancement within a motivational and structured environment." Graduates with a degree in Agriculture or Agribusiness have an opportunity to embark upon a one year customized internship in one of five areas namely Crop Production, Livestock Production, Aquaculture, Agribusiness or Agro-processing.

The programme is structured in 4 phases: **Phase 1**: Orientation & Production Phase - induction into the programme, field visits and presentation skills practice. **Phase 2**: Production Phase – participants are attached to various farms throughout the country based on areas of preference; crop, livestock or aquaculture, as a means of getting related field experience. **Phase 3**: Processing Phase - allows for awareness of procedures, practices along the value chain for value added products and **Phase 4**: Customization - allows interns to be attached to a company that speaks to his/her preferred area of interest out of 5 categories; crop, livestock, aquaculture, agribusiness and agro-processing.

Endorsement from the Agriculture Sector

"*A step in the right direction as food security is not a short term thing. In the medium and long term University students can get general exposure in a real environment with farmers.*" Mr. Ramash Ramsumair Tableland Pineapple Farmers Association

"*The programme is very innovative and provides a dynamic opportunity for TTABA to give back to the young graduates for them to develop in their careers. We are impressed with the level of training that they have already received and we deem the partnership with the programme and the interns to be a fruitful one. We know that the programme will surely benefit the sector!*" Allister Glean, Trinidad and Tobago Agribusiness Association

"*Will highly recommend all graduates. Hands-on training is important for agriculture as there is so much you can learn. It's different from learning in the classroom, especially for youth in agriculture or interested in business in agriculture*." Khemraj Singh- President of the Felicity Farmers Association

"*Very productive, a very good synergetic system between private sector and the government*." Mr. Anderson of Albrosco

"*This programme is just what the sector needs*!" Mr. Rostant of Mastermix Feeds

Feedback from Interns

"*The APDP provides a suitable environment to allow practical and professional experience in the agribusiness world for UWI graduates. The programme allows for broader conceptualization of business ideas and opportunities through the exposure to what is available and what could be. The onus is on the intern to make full use of the opportunities that would arise!*" Trevon Cooper, Agribusiness

"*I see the APDP as a platform to engage young people is a positive one. This is because it serves as a tool to give persons hands on experience in terms of the actual running of a farm enterprise which is sadly lacking in the university system. It also allows the opportunity to make key contacts with other individuals that may share common goals which can lead to future opportunities for collaboration. The APDP also encourages young people to believe that there is hope if they are interested in Agriculture, especially as the sector has not been given the level of attention it should be receiving. We all still need to eat in order to survive, so it's very discouraging to know* that since this is the reality, why then is the sector not given priority?" Kezia Black, Livestock

"*A good vehicle to facilitate exposure and practical experience for new graduates in the sector. It should provide many benefits of the on-the-job experience preparing new graduates for the actual work environment particularly in the agricultural sector*." Niran Moosai, Crops

"*APDP is a good avenue by which you expose young people or rather young professionals in agriculture giving them an insight into the sector*." Daryl Knutt, Aquaculture

Story: Kimberly Gay

'Food acceptability' is being recognised as an important aspect of food and nutrition security. The experiences with school feeding programmes in some Caribbean countries show that our youth are not as in-tuned to eating provisions and other local foods the way the older generation is. The message that complex carbs, such as, cassava, yam, dasheen (blue foods), plantains and bananas are 'good for you' is not enough. We almost need to re-introduce our youth to local foods, if the 'eat what you grow' mantra is to have any impact in the years to come.

Two years ago, in March 2012, the Jamaica Producers Group, whose our origins are in the banana business, launched a new ad campaign dubbed 'Peel the Benefits' in response to lack of investment in marketing local produce. It was it hoped that this move would push up sales of ripe bananas domestically, even while the group positions itself to expand produce sales into the region. According to JP managing director Jeffrey Hall, "*in Jamaica you look at green bananas, yam, sweet potatoes, ripe bananas, nobody has really made a concerted effort to bring the same kind of advertising and branded, targeted campaign to the Jamaican consumer. I would say that a substantial investment in awareness and brand led promotion can move ripe banana consumption, and green banana consumption in Jamaica.*" He expected that as the demand for bananas increase, farmers would benefit through the sale of greater volumes of the produce and better awareness of the health benefits of locally grown foods. The ad campaign which ran for one year, was one step in bridging the gap between the exposure given to the processed foods and fresh produce sectors.

Article extracted from: http://www.jamaicaobserver.com/business/JP-launches-fresh-produce-campaign_7476247#ixzz28S5FT05s.
Photo courtesy Jamaica Producers Group

Learning agriculture - from classroom to grassroots!

CaRAPN chats with an APDP trainee - Tsian Carr (TC)

Tsian promoting 'Agriculture Now' on a field visit to Wa Samaki Farms

CaRAPN: What made you study agribusiness marketing?

TC: Neither my family members nor I had any background in agriculture, or anything closely related to food production. Like most young Trinidadians, I bought food stuff in supermarkets or, and not usually, from produce vendors. On entering UWI (St. Augustine Campus in Trinidad), I initially wanted to study Business Management. However, by default, I was placed into Agribusiness Management.

After an interesting first year, and on discovering how much of a dynamic and interesting field of study agriculture actually is, I chose to remain in the programme. I was captivated by the thought of producing safe food and food products for my (and others) consumption. Mostly I was intrigued by the idea of innovating the way we produce food: growing food through non-traditional means that typically generate greater yields at a faster rate with generally less labour intensive practices.

CaRAPN: On graduating, what were your options?

TC: In my very first year at UWI, I attended a career guidance workshop hosted by my Faculty (Science and Agriculture at the time) where the career options focussed mainly on the science based careers while agriculture was simply ignored. One young man eventually asked about the B.Sc. Agribusiness degree and was told that he should seek to transfer or do a minor totally un-related to agriculture.

It seemed like there were no good careers out there in agriculture. I was advised from peers, friends, family and others that my best option was teaching. Many insisted that on graduating my next option would have been to further my education by way of a Masters programme. I also had the option to sign up for the On the Job Training Programme (OJT) where it is NOT guaranteed that placement would be in the field of agriculture.

Besides teaching, doing a masters or OJT, the other main options included applying for a teller's position at the Agricultural Development Bank (ADB), Trinidad and Tobago AgriBusiness Association (TTABA), National Agricultural Marketing Development Corporation (NAMDEVCO) or going the entrepreneurial route. Although the options seemed limited to me, I was not swayed from the field at all. I felt like the Agribusiness degree had more scope than what was presented before me and that my years of study would have been worthwhile. Being involved as a research assistant in the IICA-CTA CaRAPN project placed me directly in agriculture and exposed me first hand to regional issues.

CaRAPN: Was the ADDP a timely intervention for you?

TC: The APDP was a welcomed intervention as it attempted to capture the youth interested in the field of agriculture but who lacked the job experience and/or training to actually attain a job or create his/her own business. It was especially timely for me as it came shortly after I completed my degree and was looking for an avenue to begin my career in the industry.

CaRAPN: How has the experience been so far?

TC: We are currently in Phase 2 and so far, the experience has been excellent. We [the interns], have learned much about the field of agriculture through various field visits, networking opportunities, procurement and maintenance of small and micro machinery. We've had numerous networking opportunities and we've learned to train our minds to re-think existing challenges for agriculture - thinking 'outside the box'. We also completed an introductory module of project management, learned to perfect our presentation skills and gained valuable information on the industry from persons that have been working in the sector for years – giving us invaluable knowledge on how things work.

CaRAPN: What has been your most memorable moment?

TC: My most memorable moment has, up to this point, been of a discussion that we had with Steve Maximay, concerning the agricultural sector and how agriculture is a part of every major industry – from sport, landscaping, soil science, to fashion. He also created an awareness of new terms like nutraceuticals and gave insight as to how this and related areas such as pharmaceuticals are closely related to agriculture.

CaRAPN: What is waiting for you after your stint in the ADDP?

TC: I am still unsure as to my position after this 1 year internship is over. Conflicting views have been shared by persons on the administrative team. Based on the aim to produce more food, one could assume that the programme includes some sort of land distribution. However, coordinators are non-committal on this issue. Based on the intern's performance and the company's ability to hire additional labour, the opportunity also exists for interns to remain with companies that they would have been attached to. Another option might be to support those who have completed the internship in establishing small businesses; for example, by developing one of the many proposals developed as part of the training. This is my preferred option.

CaRAPN: Would you recommend that this programme be continued?

TC: If indeed the intent is to have 50 farmers at the end of the year then I would recommend that this programme be continued under the premise that they request more Agriculture General Graduates instead of Agribusiness Graduates. The lines of administration would also have to be significantly cleaned up so that things like contracts, payment, supply of personal protective equipment and that communication channels be improved to avoid some of the uncertainties experienced.

Finding the right stuff!

As an agriculturist, **Raynard Burnside** of The Bahamas *"always wanted and saw the need produce "stuff" in order to succeed. And that "stuff" needs to create value. It's extremely motivating to know that something I've started has created value for others. Part of creating value is contributing to the agricultural entrepreneurial community on a whole."*

Becoming my own boss!

I graduated from UWI with a B.Sc. in Agribusiness Management and a M.Sc. in Tropical Science and Production. However, with all these qualifications, finding a job in home country The Bahamas, especially one that involved lots of hands-on, trial and error and skills building proved difficult. I was either over-qualified or lacked experience. By chance, on checking my email, I saw that I could have entered an international business plan competition. I knew and believed that I had the right skills to develop a business plan based on my first degree and that I could use my second degree to specialize in my new venture.

So I registered for the competition and at the same time was participating in an IICA-Organization of American States (OAS) on-line course on "Agro-ecotourism: Basic elements for implementing an innovative tourism project". I was selected as a finalist, participated in the competition held in Cartagena, Colombia, presented my innovative agricultural business plan and the following day I was announced winner in my category. And the rest, as they say, is my history.

Siphiwe Honey Gold Farm and Preserve is an agro-ecotourism destination situated in the southern region of The Bahamas, located on the eastern region of Rum Cay Island. Occupying 12 acres of undisturbed family-owned (generation) land, the business offers an environmental education learning resource centre. It acts as a major public access facility for Bahamians and tourists to learn and experience organic farming, biodiversity of The Bahamas, beekeeping and production and on-farm stays with 4 environmentally-friendly agro-eco lodges.

The farm and preserve have outreach programmes and activities that are designed to make learning interactive and fun, covering Bahamian biodiversity, cultural and natural history of the islands' flora and fauna. Outreach programmes and activities include on-farm stays, volunteerism and internship programmes in organic farming, honey beekeeping, honey production and honey extraction to foster and promote entrepreneurship and environmental responsibility.

We have just become the only green certified agro-ecotourism business in The Bahamas. The Farm and Preserve are entirely and efficiently solar powered, offering a wide range of environmental education outreach activities, natural attractions and nature experiences. As a result of its convenient location, e-commerce capabilities, ability to give customers a distinctive and unique rural Rum Cay experience, customer guarantees and biodiversity of the island, there is a growing and sustainable number of new and repeated customers. Siphiwe Honey Gold Farm and Preserve positively contributes to combating the decline in honeybee populations throughout the Bahamas. Visitors are exposed to the skills needed to protect the biodiversity of honey bees in The Bahamas.

My message to all other young persons in agriculture is that I believe passion is a prerequisite to venturing into an agriculture business. Passion is a huge motivator, especially at start-up. I had no personal start-up funds but I was aware of so many international and national grants and funding agencies and donors who were willing to support 'green agriculture'. Passion is also important to fuel creative ways to always improve on your product thinking of ways to create more value to overcome challenges and keep the operations going.

Story and photos: Raynard Christopher Burnside

HOOPSS

Helping Out Our Primary and Secondary Schools, a project conceptualised by youth, for youth, is taking on the challenge of getting youth exposed to and involved in agriculture, especially in rural areas of Saint Lucia. With full support from the IICA Saint Lucia Office, the Saint Lucia Agricultural Forum for Youth (SLAFY), is growing HOOPSS from an initial 8 to 14 schools by the end of phase 3.

Rebuilding agriculture as a career choice!

Increasing expenditure on food imports, rising incidence of chronic non-communicable disease and food scarcity are driving the search for strategies to develop a cadre of knowledgeable, enthusiastic and talented agriculture entrepreneurs who will adopt and promote sustainable food production practices. Discouraged by negative perceptions of agricultural livelihood options, scores of students ignore the excellent opportunities that the rural environment presents for existing farmers to increase production levels and for new persons to enter the industry and establish profitable linkages with other commercial sectors.

HOOPSS is built on a philosophy that only the actual engagement of young persons in theoretical and practical farming best-practice can provide that critical knowledge necessary for sustainable employment and ultimately, household food security. The project also seeks to sensitize and expose students to the viability of agriculture as a business, and to promote the creation of agricultural leaders through school gardens and farm activities. Ultimately, it is hoped that this will drive the development of agriculture in Saint Lucia and as well, address food security and nutritional concerns of the school feeding programme.

As a multi-party arrangement, HOOPSS has led by example. Success is built on continuous collaboration amongst its many stakeholders, mainly: the Ministry of Agriculture for technical support, IICA for implementation support and a number of formal linkages with actual markets such as primary school feeding programmes, local restaurants, hotels, and most notably, Consolidated Foods Limited (CFL) a premier supermarket on island. In Phase 1, in the aftermath of Hurricane Tomas, CFL stepped up to the plate, as the recognized sponsor of HOOPSS second phase, contributing a staggering EC$115,000 towards the project.

The HOOPSS project has also been successful in building enthusiasm among primary school students for agriculture. This is key in erasing the negative perceptions about agriculture as a career choice. A major highlight is HOOPSS success in giving students who are differently-abled, self-employable skills which will be critical when they leave the Dunnotar School and face a workplace which may not sensitive to their needs.

HOOPSS is contributing directly and indirectly to local food availability. In addition to demand generated from School Feeding Programmes in Primary Schools, there is also growing demand from teachers, parents and the local community. Schools sometimes have to restrict supply to community members in order to honour pre-existing CFL supply requirements. Hence training students in the management of multiple markets and supplier agreements is an important part of the training and an essential building block for entrepreneurship development. The success of the HOOPSS project is already being reflected in the quality of School Based Assignments of participating secondary schools with some students actually establishing home gardens. It is hoped that this trend will continue to improve the nutrition of those students and their households and allow them to realize tremendous cost savings at the domestic and national levels. Over time, this could contribute to reduced food imports, thus saving valuable national income.

HOOPSS is poised to achieve its objective of selling agriculture as a viable livelihood option amongst Saint Lucia's youth. Whether or not this potential is fully realized will depend on the degree of importance placed on agriculture and the amount of effort made by the policy makers to ensure that agriculture and agricultural development are adequately supported. Maintaining the momentum will also depend on the degree of importance placed on actually incorporating agriculture into primary school curricula. This must address effective solutions to overcome the ongoing challenge of disruptions in care and maintenance of school farms during the July to August vacation break.

Story: Barbara Jacob-Small; Photos: IICA Saint Lucia

Bottling 'Henvil Farms' brand of coconut water
Photo: Ravena Gildharie

In Focus!

Empowered WiA

Women in Agriculture

If the phrase '*seeing is believing*' bears any merit, then the future of agriculture depends largely on the sustained ability of entrepreneurs to overwrite menial perceptions of agro-based enterprises with vivid illustrations.

Barbara Jacob-Small

Antigua cottage meets Buckingham Palace!

By now, everyone in Caribbean agriculture should know of **Rosemarie Mc Master,** better known for the award winning Antigua & Barbuda's own Susie's Hot Sauce. From 1960, when the business was first started by her mother, Suzie's range of Hot Sauces has captured the hearts, minds and taste buds of chili heads and pepper sauce aficionados all over the world. Order yours now at anu@susieshotsauce.com

Creating the Hot stuff!

The Gem of the Caribbean, Antigua and Barbuda, has produced another gem - Susie's Hot Sauce. Starting in her kitchen in 1960, Susannah R. Tonge, or Aunt Susie, mother of Rosemary McMaster, developed the first and original line of the now-famous Susie's products. It was fortunate that her boarding house business also gave her the opportunity to 'test' her sauces in a captive and enthusiastic market comprising members of the Royal Antigua & Barbuda Police Force. Her backyard was also a hub of activity as various farmers would arrive with their bags of peppers to sell.

Her first hot offering was well received by locals and visitors alike and stood up to the competition of the island's best sauce at that time, "Moore's." Within a very short time, Susie's became Antigua's favourite hot sauce as Susie did her best to provide a unique and quality product at all times. Soon, her products were on the shelves of some of the most prominent supermarkets on island. Her kitchen skills, passion and vision set the stage for a line of products, which would touch the world with magnetic temptation and addiction!

Aunt Susie died December 1st 1990 and the production and management of the business was taken over by her daughter, Rosemarie V McMaster, a Travel Agency Director. Rosie, as she is affectionately called, decided immediately to continue her beloved mother's business. Susie's Hot Sauce took part in their first Trade Show, by Dave DeWitt, in Albuquerque New Mexico, in March 1994 and had a very successful introduction to international markets. The exhibition was managed by Rosie and her son Orlando. It was a learning experience, and the positive reviews of the sole product - Susie's Original- was very encouraging. This opened the door for Susie's international recognition and brand awareness!

Susie's began taking part in shows in Tampa, Texas, Toronto, London, Japan, Miami and New York.

In 1998, with her spirit of development, Rosie set about offering her customers something 'new' – her very first creation of a pepper sauce named Susie's Calypso. This opened a floodgate of creativity, spawning tempting new flavours of Tear Drops, Calypso, Burning Desire, Tear Drops, Creole, Pineapple Pleasure, Tamarind Tango, Papaya Delight, Mango Mandingo and Raspberry Rhapsody.

The Susie's line of products have entered contests in the US competing with top sauce manufacturers and have secured numerous awards, including three (3) Golden Chile Award from the Chile Pepper Company in Texas and three (3) Scovie Awards in Albuquerque, New Mexico. The company has shipped its products to many parts of the world, including France, Germany, Spain, UK, Australia, US, Canada, Caribbean, Italy, Korea, Manila and Singapore. Susie's continues to receive request for products from many countries and companies globally. Susie Hot Sauce is undoubtedly, Antigua's hottest seller! Persons can order online at orders.anu@susieshotsauce.com

Her journey is just beginning. She plans to touch the world, with her award-winning products, and to encourage young minds to define a purpose and strive for excellence.

Story and photos: R.V McMaster OM, MBE
Suzie received an award as Member of the British Empire (MBE) from Queen Elizabeth II, at Buckingham Palace, in 2009.

Plant something

Inspired by farming, **Deborah Hodge**, dubbed wonder-woman of backyard gardening in St. Kitts, was moved to create a poem extolling the benefits of choosing to feed oneself.

Me Doctor say
eat fresh fruits and vegetables to stay healthy,
Me say 'Docta eh hard carz me no wealthy.
When me go to de supa-market me could hardly buy
Carz dem high prices in dey a mek me want to cry
Well, me find that home-grown is de best
Compared to de imported stuff it surely surpasses de test.
Right at your fingertips, you can't beat that
It can't get any fresher than that!!!

Photo: Eric Browne

Do it Yourself

On the small islands of St. Kitts and Nevis, space for farming is limited. With high food prices, households are looking for solutions to eat healthier on low budgets. There is already a feeling by many, that eating healthy would be putting a significant strain on their pocketbooks. However, I found out that there are many ways to eat healthier foods at little or no cost to you. I enjoy many rewarding and satisfying benefits of gardening; it is a fun filled family exercise, getting young children exposed, interested and immersed in farming - the roots of family agriculture, providing the household with both fresh foods on the table and much needed income.

Where to start? How to start? What to do?

Persons who have already started to plant know that it is more than just putting a seed in a hole and waiting for a harvest. How can interested persons get the 'know-how' about where and how to start? And how can we get the uninterested, interested?

Luckily, there is an active Agricultural Department in St. Kitts & Nevis which would be a good place to start looking for answers and information. There is also a local television agriculture programme, providing step by step guides on how to start or care for a home garden. And of course, there is the internet - a powerful tool that we must use to our own advantage.

I have 'no time and no space' for gardening.

How badly do you want to eat healthier and save at the same time? If you really want to, then start small, with a garden that will fit into your schedule. Plant only what you will have time to care for!

No space? Plant in pots!

You think that flower pots can only be planted with flowers? Think again! Many crops grow successfully in pots once they are properly cared for. Gardening or flower pots have many advantages; they save water; pests and weeds don't escalate into problems; they offer flexibility since they can be moved around; you can even plant indoors!

So Save the Seeds from your peppers and pumpkins; put on your gloves (if you need to); clean up an area in your yard or clear an area on your patio and plant something!

If you have one pepper tree planted
you can save dollars and cents
If you add one tomato plant
you can save more to help pay the rent
If you add one cucumber tree
you can help end the strife
If you have a backyard/kitchen garden
you can be saving your own life!

Our family started planting as a way to provide us with our own food and as a hobby. Today what started as a seed has grown and blossomed into a successful business known as Rainbow Harvest, that includes white potato, broccoli, butternut and yellow squash, onions, cherry tomatoes, cucumber, sweet pepper, basil and other herbs. There is enough to supply supermarkets with various kinds of fresh herbs. With much emphasis being placed on the importance of food security, it should be mandatory for every household to maintain their own kitchen/backyard garden!

Story and photos: Deborah Hodge

Committed to agriculture!

In Nevis, **Emontine Thompson** currently farms between 7-8 acres of land situated at Prospect and Brown Hill, Nevis, where she resides. She has been a farmer for approximately 40 years. Emontine cultivates a wide range of crops including vegetables (her favourite), root crops, fruit crops and cotton. Her farm is dotted with every vegetable you could imagine and her banana and plantain production continues to increase as she does her part to ensure less of these products are imported.

From fresh to processed!

Emontine is involved in all aspects of the agriculture industry from production until the product reaches the consumer. Unlike many other farmers, Emontine does her own marketing of her products and can be found in Charlestown on Mondays, Tuesdays, Fridays and Saturdays with the widest variety of produce that can be found on the island. One stop at Emontine's stall will be able to satisfy almost all of anyone's agricultural needs.

She has also ventured into agro processing and has been doing exceptionally well, producing numerous jams, jellies, chutneys, hot sauce, green seasoning as well as a wide range of local drinks, in many cases creating her own original blends.

Agriculture is a business for Emontine and she is one of the few who has managed to get her entire family involved on the farm - her husband and all of her children. Proceeds from the farm have been used to further the education of a number of her children.

Emontine has been participating in the Department of Agriculture's Agriculture Open Day since its inception and has never missed a year. She has also been the only vegetable farmer from Nevis who has participated in the St. Croix Agriculture Exhibition for the past three years. She placed first in the off island exhibits in 2010 and third in 2011. She has been the President of the Nevis Growers Association for the past 15 years and she has ably represented the group in various workshops and training programmes overseas.

Her commitment to Agriculture has earned her numerous awards. She was the recipient of an Independence award in 1997 and a Tourism award in 1999. She has also won the award of Farmer of the Year from the Department of Agriculture several times.

Story and photos: Augustine Merchant

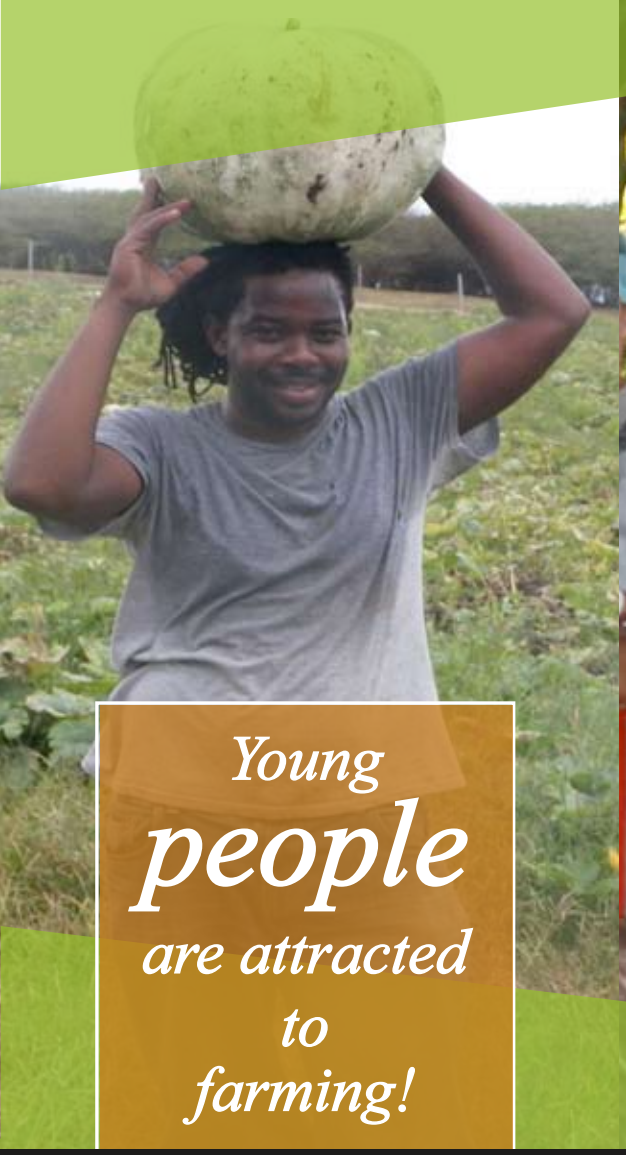
Branding creativity!

Coming from a family inclined towards self-employment and working at every level of her Sea Moss agro-processing enterprise, **Esther Peter** of Saint Lucia epitomizes entrepreneurship. To support her family, in 1999, she single-handedly established the Viga Moss family brand of milk-based sea moss beverages. Esther is hands-on in every aspect, from cultivating, harvesting to processing her sea moss crop in the Dennery/Praslins area. Esther has been creative and innovative, extending her product line to include sorbets, ice-creams and relishes. Her independent marketing efforts have resulted in the Viga Moss brand being carried at local supermarkets, restaurants and gas station convenience stores and more recently in a major supermarket chain on island. With her recently completed training in processing sea moss into a powdered breakfast drink mix, she plans to add this new product to her line.

Blooming business!

Beverly Charlemagne of Saint Lucia knows them, grows them and creates lasting memories with flowers at Jardin Tropical. This veteran florist traces her agri-success to her father's humble premise that entrepreneurs always start by masterfully utilizing existing resources to attain desired ones. With access to land and a drive for financial independence, she started producing vegetables as a cash crop to provide the working capital to keep her business afloat during the two years of flower cultivation. The initial vegetable crop also enabled her to forge preliminary linkages which would later facilitate flower sales to Hotels island-wide. Beverly's appreciation of strategic thinking and insistence on sustainability ultimately ensured her business's success. Periodically hosting site visits from neighbouring secondary schools, she believes that no effort should be spared in demonstrating the viability of agriculture as a sustainable enterprise and in encouraging youth to explore agro-based livelihood options.

Story and photos: Barbara Jacob-Small



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Going up the value chain!

Residing in the rural village of La Digue in Grenada's eastern parish (St. Andrew), **Veronica Henwood** has been a small agri-processor for more than a decade. She and her husband (Rodney) established Henwood Products, with the sole intention of creating agri-products from raw materials that were readily available from farmers. Mrs. Henwood has been successfully operating in her kitchen, with help from her three children and her husband who have been of great assistance, especially with product distribution.

Being around for over a decade is success in itself!

Mrs. Henwood started her enterprise producing, packaging and selling plantain chips. She gradually introduced other products such as cassava chips, dry fruits, mango cheese, nutmeg cheese, jams, jellies, and other confectionaries. All her products are approved by the Grenada Bureau of Standards. She is a member of the Grenada Network of Rural Women Producers (GRENROP), the national Chapter of the Caribbean Network of Rural Women Producers (CANROP), through which, her products have been exposed to the regional market. She is confident that such exposure and encouragement would help her to push her company up the ladder of success.

Mrs. Henwood has received a few awards from various organizations (including IICA) for her company's contribution to the development of the local agri-processing industry and wants to expand her operations. She sometimes gets a little discouraged when the challenges are hitting 'left right and centre'. She truly believes that her small enterprise can play a big role in Grenada's and the region's food and nutrition security. However, she laments that despite having great potential, "*because of limitations, we have had to operate on a limited budget and limited space in my production area. Exposure provided positive publicity and many orders for some of my products but, regrettably, I have been unable to accept the orders because I do not have the means to mass produce the products. It's pretty sad, but that is the reality. My challenge is not identifying a market for distribution; my challenge relates to inadequate space to facilitate increased production.*"

She believes that governments and private sector financial institutions need to create avenues to assist the development of the agri-processing sub-sector. She also believes that the private sector needs to be open about the s potential risks of trying to establish and develop a thriving agri-business sub-sector.

"*It's only when this is done, that agro processors can truly benefit. We have a major role to play, but we need the complementary support of policy and financing. Without those, we will continue to do things on a small scale, and growth will be virtually impossible*".

Recently, Mrs. Henwood obtained a small parcel of land from Government to build a new production facility. Although she is unable to set a timeline for completion of the proposed new facility, she is confident that "*once completed, it will bring about a significant increase in the quantity and variety of products that will be available to consumers; production level will rise, and new products will be created*". "*I know the market in which I operate; I know the limitations that I will face; but I will persevere as I continue on my journey to take the operations beyond its present status*".

A very elated Mrs. Henwood said that, having been approached by a wide cross-section of businesses, such as supermarkets and shops, which are interested in selling her products, she is confident that there is a thriving market for agri-processed products. "*Once we are able to complete the new structure, things will be different and the people will definitely know and accept Henwood's products as a household name*". As Company Manager, she believes that her enterprise can actually contribute to the creation of employment opportunities for interested young persons in her community. "*Already, I sometimes employ three persons; can you imagine what will be that figure in an environment where the relevant support exists? With the right framework and policy in place, the national authorities could be assured that my enterprise as well as other agri-processing enterprises would be able to employ increased numbers of persons, both part time and full time*."

Story and photos: Linda Straker

Bottling success!

A farmer for over 30 years, Vilma Da Silva of Guyana recalls when just two years ago, the Pomeroon was bountiful with coconuts but hardly any buyers. The options then were to either leave the coconuts on the trees for the nuts to turn hard or convert the dried coconuts into copra meal. But for Vilma, these options were not viable, and she decided to try out bottling coconut water as a business.

"You just can't allow training to go to waste."

Armed with a technical FAO brochure obtained at a 2009 agro-processers workshop in Saint Lucia, Vilma put the wheels in motion. Her group, the Pomeroon Women's Agro-Processor Association, thought it was too risky and was not willing to absorb any losses. Against the odds, naysayers and an ailing coconut industry, Vilma ventured alone, investing her own money, time, effort, and with help of her husband and a few other family members, started to bottle coconut water. She invested about GY$3.5M (US$17,500) in a generator (Pomeroon has no access to public electricity), a freezer and an enclosed air-conditioned cold-storage room. In her first week of trial, she purchased a few plastic bottles from the nearby market and produced 100 bottles of coconut water, sold at her sister's stall at the Charity market. Only about 20 bottles spoiled!

"*I didn't know exactly what was causing the spoilage but as I went along I realized it had a lot to do with how you pick the coconuts; you have to hand-pick it and not let it fall to the ground. Also the young coconuts were better to use rather than those in which the jelly was already turning hard*," She has gained more experience over time and is finding newer and innovative ways to improve quality and taste. She cool stores her product and no longer has a spoilage problem! Two years later, she now has three freezers with a total capacity of 3,000 bottles and a larger generator. The plastic bottles and labels, she imports from Trinidad. She has moved from an initial 100, to 1,000 bottles a week, from 10,000-14,000 nuts some produced on her farm and purchased from farmers in the community. She bottles twice per week, making sure fresh stocks are always in storage.

Looking back at the experience, Da Silva chuckles, "*I am glad they rejected my idea back then*." At age 50, Da Silva and her husband, Henry, own and manage the agro-processing business, bottling coconut water and a variety of fruit juices sold under a private label, HENVIL Farms. Their venture also incorporates a 37 acre farm that produces ground provision, citrus and coconuts. Their products are available in shops and supermarkets across the Essequibo and North West regions.

Her production, driven by high demand and orders, usually sells out within two weeks to one month, even though they can be stored for up to six months! She regularly supplies 10 shops on the Essequibo Coast and fills orders from gold miners/dredge owners who operate in the North West Region of Guyana. Her product is also sold in the mining hub of Port Kaituma. Her products are sold at $250 (US$1.25) per bottle. She is currently in discussion with Sterling Products Limited, a Guyanese manufacturing company that has expressed interest in aiding distribution of the HENVIL Farms products. The company has a social responsibility component that seeks to help small farmers and agro-producers distribute their goods utilizing the company's services. The company would be taking 2000 bottles of HENVIL Farms coconut water per week guaranteeing availability in Georgetown and nearby communities.

"*I attended so many different training programmes and that is what propelled me to venture out on my own. You just can't go to a workshop, sit there and then forget about it. You have to go there, take in whatever it is and then use that knowledge to enhance your farming.*" Vilma believes that there are opportunities for other small producers to develop their own ideas and businesses, starting small and growing from there, re-investing profits as you go along. Value adding also allows for greater business flexibility, growth and profits.With her investments, Vilma now values her agro-business around GY$7M (US$35000). Now in her third year of operations, she is enjoying handsome profits, earning as much as $4M per year from her little venture.

Story and photos: Ravena Gildharie

NB: Vilma recently indicated that due to the arrangement with Sterling Products Ltd., she may have to increase her staff by 12 additional persons. She has also had inquiries from persons from the Bahamas who have taken an interest in her bottled coconut water.

Indigenous Women in Action!

Guyana's indigenous women's groups in the Rupununi hinterland communities of Aranaputa, St. Ignatius, Karasabai, Parishara, Katoonarib, Awarewanau and Karaudarnau form a vital link in a multimillion dollar agro value chain that incorporates food production, processing, empowerment and school feeding for over 4,000 hinterland students. Rupununi is geographically mapped out in Guyana as Region Nine (Upper Takutu/Upper Essequibo). The only form of communication for these groups is radio transmission, which is established at about four public locations in the Aranaputa/Annai area.

'It was very hard for us but we continued the work'

The school snacks programme started out in the Rupununi, initially as a pilot project with seven schools that were benefiting about 1,400 hinterland students. This initiative forms part of the hinterland leg of Guyana's wider national school feeding initiative valued around GY$500M per year. The government's allocation at that time was around GY$13M-$15M annually. The initiative have since grown to over 40 schools in Regions One, Seven, Eight and Nine, with annual budgetary allocations reaching as much as GY$45M in 2012. This phase received help from the Canada Fund for Local Initiatives, which kick-started the linkage between the Cottage Industries (CIs) and the schools snack programme in 2005.

Grouped in their respective communities, the women purchase farmers' produce and process using the shellers, grinders and roasters purchased under the project, to make mainly fresh fruits juices, peanut butter and cassava biscuits/cassava bread. The latter two are combined into a sandwich that is served to students under the Ministry of Education School Snacks Programme. The women received GY$70 for each snack delivered. Of the seven groups, the Aranaputa Processors Friendly Society (APFS) is perhaps the most powerful in terms of its capacity and output. Apart from serving the schools in Aranaputa, this group also supplies peanut butter to 14 other schools across the Rupununi.

In January 2010, the Society for Sustainable Operational Strategy (SSOS) entered into a Memorandum of Understanding (MOU) with the Guyana Ministry of Education to expand the pilot school snack programme in the Rupununi from 7 to 33 villages and to include all nursery students not being serviced by the Region 9 Hot Meal Programme, another leg of the hinterland school feeding programme that also has a direct linkage between communities and the schools. However, schools involved in the snacks programme are not a part of the hot meal component. But, like the snacks programme, the hot meal is supplied mainly by women who purchase farmers' produce and prepare fresh nutritious meals for students in the targeted schools. Backed by the MOU, a few of the Rupununi women groups supply 25 schools with hot meals. Although the Aranaputa group is not one of those since it is mainly involved in the snacks programme, the group is seen as a nucleus of this component.

With funding and support from several organisations including the Canadian government and the US Ambassadors Self-Help Fund and with guidance from SSOS, in 2010, the group established its modern peanut factory, worlds away from baking the cassava bread on a 'fireside' (a makeshift kitchen). "*Before the factory, we borrowed a section of the Aranaput*a primary school to produce the cassava bread and peanut butter," recalls Yvette Benjamin, current treasurer of the APFS. "*Everything was done manually…*" The school had a thatched roof, poor ventilation, with no storage space, especially for peanuts which requires an enclosed area protected from too much sunlight. Lack of storage affected the women's supplies since peanuts are produced seasonally and not available year round. It also caused some concern about reliability to supply the school snacks.

The factory is designed with separate areas for processing and drying, storage for peanuts and processed nut butter, well equipped kitchen and an administrative room. The women now have an electrical sheller and grinder, powered by a generator purchased specifically for the factory. They also now use gas stove to bake the cassava bread.

Aranaputa peanut factory



making the cassava biscuits

"With the new factory, it becomes easier for the women to produce comfortably and also to store our peanuts and cassava biscuits," (Chairperson Sandra Sears)

Women on their way to deliver snacks to school at Aranaputa

Aranaputa school children enjoying peanut snacks

Virgil Harding of Aranaputa displays freshly picked fruits grown in the community

Sandra Sears took over leadership of the group in February, 2012. The factory has two full time workers and 13 members. The women process enough cassava biscuits to last for two weeks, carefully stored in large plastic containers. The peanut butter is also processed in large quantities, some of which is packaged in plastic containers that can be stored for very long periods. Every day, the women turn up at the factory to butter the biscuits and make fresh juices to serve nursery students at 9:45 am and primary at 11:30 am.

The group buys over 60,000 pounds of cassava from farmers in the community each year. They produce about 1,080 pounds of processed peanut butter and 3,618 pieces of cassava biscuits per month. They also purchase large quantities of fresh fruits that are available seasonally. These activities generate an average of GY$600,000 for the group monthly from which each member receives dividends of GY$30, 000 each. According to group member, Lydia Stephens, "*I get a lot of benefit from the group because when I work I get paid….before that I was at home, not doing anything. This is a steady income for me now*". According to Sears, "*It helped some of us who never knew how to do book keeping and records… it teaches us how to manage a business and make money for ourselves*."

Virgil Harding, a former headmaster for the Aranaputa Primary School highlights too that the women's activities are linked to better attendance in the schools. "*Attendance improved and also learning… Further, it creates awareness among children on the importance of agriculture because they see daddy planting and mommy processing those same produce and bringing it back to feed the children in the school. At the same time, it brings income into the home. So with this too, they won't look down at farming*." He notes too that the project raises the nutrition of the population since the "*snacks are freshly prepared. It is a balanced diet and most importantly it fits into the cultural diet of Amerindians. So they enjoy the meal more*." Prior to this, the Ministry distributed milk and biscuits. However, Harding explained that due to the far distance from the City, by the time the supplies reached the community, it was spoiled.

All is not smooth sailing for the APFS. Lack of own transportation and distribution centres in Georgetown are placing limits on the group's development. Since the 14 other schools must collect their supplies every two weeks in Aranaputa, the one pound packaged peanut butter is sold at a lesser price (GY$500) than it is sold to local shops (GY$600). Chairperson Sears notes that a Guyanese supermarket chain, Bounty Farms Limited, has expressed interest in distributing the Aranaputa peanut butter in Georgetown, but has asked for a label that is complete with bar code, something that the current label does not have. The original labels as well as the plastic packaging containers cost the group GY$70 each. These containers, which range from one pound, half pound and quarter pound, are imported in bulk by SSOS, acting as the umbrella body, and sold to the groups. Cheaper packaging, updated labels and marketing skills are key for expanding into city centres and competing with similar imported products. Despite the challenges, the Aranaputa women have their eyes set on expansion and placing their products on supermarket shelves and shops across Guyana.

Story and photos: Ravena Gildharie

Watercress is a vitamin-rich vegetable that is grown in the small village of Aripo in North Trinidad. The "cress", as it is more commonly called by the villagers, is an important element of Aripo's economic activity. Both men and women work in the watercress fields, however, it is said that about 95% of the males in the village worked in the fields at some point in time.

The watercress grown in Aripo is sold across the island in the domestic markets and in some supermarkets. In Aripo, it is used to make soup, salads and fried watercress, which is a 'cook-up' with saltfish, tomatoes, garlic and onion. This dish is traditionally paired with coconut bake and is had for breakfast or as a snack.

Information: Kathryn Duncan; Photo: Andre Neufville

Try and do something!

Lilian Jacobs-Marcellin, a 57 year-old resident of Calibishie, is one of Dominica's most proud female farmers. She loves the soil and has a passion for farming. She has been in farming for as long as she has known herself, and has tried everything from banana and plantain to tannia, sweet potatoes, yam, eggplant, cabbage, lettuce, tomatoes and more. And now, onions! A common reaction is shock that onions can actually grow in Dominica. The crop, planted in January 2012, is already in local shops and in Whitchurch, one of Dominica's main supermarkets.

There is a lot of room for others!

Sandra Walters-Bannis, like many other Dominican women her age or older, grew up in a farming culture, supporting herself and family for nearly 20 years on banana and root crop production. Now in her 50's and weakened by illness, she has shifted to lighter crops, such as vegetables, dasheen, carrots, lettuce, ginger, turmeric and tomatoes. Despite the challenges of good farm labour, costly fertilisers and inadequate planting material, financing and theft, Sandra is on a mission to succeed. She has no intention of quitting! She plans to expand in the near future by adding flowers and possibly poultry and eventually become a full-time farmer.

Story and photos: Ashley Massicotte

'Women farming rice in the Artibonite Valley' Haiti (Photo: Alain Thermil, IICA)

In Focus!

Driven to succeed

"I do not think I am 100% successful at this moment, but I am on my way. Because of agriculture, I have a better life now. I have been able to send my children to Paramaribo for advanced education. I want to grow, get to the next level."

Glenn Maabo, Suriname Farmer

Survival instinct!

In January 1994, a fire ravaged the Ravine Poisson Rural Services Center (RSC) in Saint Lucia, which at the time provided employment for at least 10 community members. Consequently, **Rosemary and Tony Perineau**, who had served a combination of 14 years with the RSC and possessed only secondary and elementary school educations respectively, were forced to take initiative and to become innovative with the limited resources available to them.

Pushing forward, profitably!

For the Perineaus, invaluable experience gained in preparing fresh produce for export at the RSC, made starting their own business the obvious solution; this with two dependent children, no transportation and barely $3000 of personal savings for start-up.

In their respective roles of driver and administrative supervisor at the RSC, Tony and Rosemary had become thoroughly acquainted with every aspect of the local produce export business. Amidst widespread despair over job losses due to the fire, the couple was able to walk away with the building blocks for a very profitable agricultural operation. Ultimately, a fine business sense, cultivated through sheer determination to survive, quick thinking and personal drive, enabled the Perineau's Exports to rise above these challenges and reap successive profits over the past 18 years.

The establishment of Rosemary and Tony Perineau's Exports, with its lone plantain crop, virtually guaranteed that the excellent supplier/ exporter relationships forged over years of service at the RSC would of necessity, be maintained. Finally, when a close acquaintance supplied them with the attendee database from a UK trade show, the couple had everything they needed to establish formal linkages with potential buyers in Canada and the UK. Accessing transportation with the help of a friend, in September 1994, a mere eight (8) months after the fire that claimed their conventional jobs, the Perineaus shipped off their first order; which included golden apples, sour sops, breadfruits, plantain, mangoes, hot peppers, avocadoes and Guinep (or Saint Lucian Ackee).

Then crisis struck! Unfavourable changes in the banana industry led hundreds to abandon their farms, resulting in a severe blow to the Saint Lucian economy, particularly the once lucrative export business. The viability of major profit centres, such as, sour-sop which previously thrived on many of these plantations was greatly reduced. A subsequent pink mealy bug infestation would further compound the situation. More recently, the Black Sigatoka fungus has presented a new challenge for plantain producers island-wide. The Perineaus endured all this while struggling weekly to secure the limited airline space allocations aboard British Airways, Caledonian and then BWIA, for their produce.

In spite of these unavoidable natural obstacles and market changes, it has been the entrepreneurs' knack for adjusting swiftly and intelligently which has consistently allowed them to not only sustain their business but also continue to push forward profitably.

The future looks bright for the Perineaus. They have finally settled into more comfortable shipping arrangements with BWIA and consistently export the highest quality of fresh produce (subject to availability). They continue to supply between 0.5 and 2.5 tons of fresh produce to foreign wholesalers such as Sunshine Tropical on a bi-weekly basis. As a result of problematic airline space constraints, the Perineaus have discontinued shipments to Canada but maintained exports of breadfruit, avocados, guinep, sour-sop, and plantain to the UK. Through their membership with the Saint Lucia Fresh Producers Association, they have been able to benefit from duty free purchases of their current vehicle, as well as the boxes needed for packaging. Additionally, the couple was able to benefit from training on Hazard Analysis and Critical Control Points (HAACP) as well as training facilitated through Caribbean Agricultural Research & Development Institute (CARDI). Consequently, both Rosemary and Tony are trained in the design of quality modules for fresh produce.

On a consideration of the numerous ongoing challenges and periodic opportunities for their business to fold, the Perineaus cite commitment to preset goals and perseverance, as being key in the success for any business venture.

Story and photos: Barbara Jacob-Small

A wine-ing business recipe!

Even though he enjoyed his job working as a full-time technician, **Carlyle Elie** relished the idea of going into business on his own. Moreover, his struggles with Sickle Cell Anemia made sustaining a conventional job impractical. Then Carlyle perceived a viable market for locally produced, all-natural tropical wines. Consequently, in 1998, equipped with the technical support of his father and mentor, (himself a long time farmer); and the administrative assistance of his mother, Carlyle started Paradise Wines. The business continues to flourish with its production of 'home made' wine from strictly locally grown tropical fruits such as banana, sugar cane, Jamun, golden apple and gooseberry to name a few. Having tried product diversification with unremarkable returns, Carlyle affirms that it is product consistency and solid family support, rather than product range, which is the winning business recipe

Exploring ideas!

Leo Alexander's determinations to empower himself and to sustain his family independently similarly led the entrepreneur to create his own agricultural by-product enterprise. Leo has long lamented the fact that instead of thinking outside the box and using different solutions to address everyday problems, local entrepreneurs resolve to seek expensive imported alternatives. Hence, when equipment trouble forced him to re-examine his involvement in a coconut oil production partnership, Leo decided to take his own advice. In brief, he got creative. Upon consideration of all the crude oil left over from their operation, Leo decided to tap into his wealth of knowledge on natural herbs, and to launch a business producing all-natural soaps. Drawing from the increasing market demand for all-natural products, Leo has been able to forge an enterprise which is growing in success and ever expanding to include other product lines such as the Charms brand of personal soaps, Bubbles laundry soaps and Ayanna therapeutic soaps. Leo is continuously forging partnerships with chemists who help him explore new ideas so that his market offering stays consistent with demand.

Story and photos: Barbara Jacob-Small

Gifted and determined!

Mervin Tyson from Nevis, affectionately called Mansa has had an inherent love for farming for as long as he can remember. He recalls fondly, hurrying home after school in the late sixties to tend his backyard garden at the home of his guardian Mrs. Lyndis Walters, in Craddock Road. While nursing his little vegetable garden he longed to have a big farm when he grew up. Today, his dream has been realized as Mansa is a full-time famer cultivating seven acres of land at Cades Bay. Since 1990 he has been feeding the nation with a wide variety of fresh fruits and vegetables and has been doing so consistently.

A tour of Mansa's farm will take you to see an orchard of tantalizing fruits including sour-sop, star apple, custard-apple, avocado, wax apple, guava, citrus and various varieties of mangoes. There is also an acre of plantains and numerous vegetable crops including tomatoes, sweet peppers, cucumber, carrot and zucchini.

In the early years, many Nevisians and expatriates frequented his farm to buy vegetables and this led Mansa to erect a vegetable stall on site. His mini market called Mansa's Last Stop is now a busy spot for customers in search of fresh fruits and vegetables. The gifted farmer is also an expert in agro-processing. Excess fruits are used to brew wine and make local beverages for sale. Recently he has expanded his product line by customer demand to serve grilled meats and local dishes on weekends.

Mansa has proven to be an industrious and determined farmer/ entrepreneur, who has stayed afloat amidst all the challenges, supplying produce year-round to hotels, restaurants and locals. His hard work and dedication to agriculture in Nevis has not gone unnoticed. In 1996, he received an award from the Ministry of Tourism in recognition of his contribution to Tourism for supplying the hotels and guest houses with good quality, fresh produce. In 2001 the Nevis Island Administration honoured him for his sterling service in Agriculture with an independence award.

Story and photos: Augustine Merchant

I want to grow!

For 45 year old **Glenn Maabo** life is getting better since he committed himself to work on his 6 acres of land in the Brokopondo district, in the interior of Suriname. I work alone, but sometimes I have help from somebody. Maabo, father of 8 daughters and 1 son, was trained as an electrician. He is a civil servant which gives him the opportunity to take loans from the bank. But his civil servant income would not give him the opportunity to pay back, agriculture does. He prefers working in agriculture. Maabo lives in Asigron, a village in the maroon district of Brokopondo, about 100 kilometres from the city Paramaribo.

We have opportunities to make progress!

The Asigron village has existed since the 19th century, so the villagers claim land rights somehow for agriculture. Land is available and in abundance and people from other parts of Brokopondo make good use of fallow land that once belonged to the Victoria oil palm plantation. Farmer Maabo and his current group of farmers need at least 195 acres of land to expand cultivation to meet demands, especially of Iamgold, a large gold mining company in Brokopondo.

Although agriculture is not an overnight thing in Asigron, Maabo himself, actively started farming in 2009 after having attended numerous agriculture training sessions from different agencies, both governmental and NGO's. "*They trained us in growing methods, use of pesticides, use of manure, marking out the acres, marketing. Now it is time to put into practice what we have learned. We try to learn and teach sustainable agriculture. Because everything grows here, especially near the riverside, you do not need too many inputs. We use chicken manure and we learned how to make compost.*"

He started with hot pepper and tayerblad (green leafy vegetable), and is now preparing his land for fruit trees, such as, sour-sop and cherries. Initially, things went well; he produced about 20 crates of vegetables, fruit and pepper a week which he sold in Paramaribo and to Iamgold. However in 2012, his initial 80 trees of sour-sop burned down and illness forced him to slow down. Now that he is well, he is eager to expand. "*I am aware now that I will need machines if I want to grow. A plough machine and a tractor are the most urgent. A Kubota (small tractor for land preparation) for my plot would be okay to start with*".

Not having machines makes work harder, but Maabo assures that he will not give up. Recently Maabo purchased a minivan to help in deliveries. "*If I had my own transportation I could have continued during my illness in some way. My feet got sick; I could not stand on them anymore. It will be better now. From what I deliver now I can pay off my debt at the bank. And now that I have received the knowledge, I am able to make it in this sector.*"

Maabo is aware of the high demand for fresh fruit crops because he used to deliver for juice producers in Paramaribo. He is growing another 200 sour-sop seedlings which he expects to transplant by November 2012. He is also setting up processing facilities to process pepper into hot sambal and pepper powder. While making pepper powder is a traditional Maroon process, he learned some sambal production techniques from a woman in Paramaribo.

Maabo has been a volunteer for 12 years now and takes the lead in organizing groups of Maroon farmers, collecting and delivering crops to Iamgold. They do group delivery of fresh produce to Iamgold. He delivers pepper, tayerblad, sometimes cabbage while others deliver sopropo (bitter melon), amsoi, kaisoi, kalian, sweet potato, cassava, and dasheen. "*Our delivery group consists of 30 people from Asigron, each with his/her own plot.*"

He is also president of a regional organization with headquarters in Brownsweg, some 35 kilometers south from Asigron in the district of Brokopondo. The organization has a program for capacity building of small entrepreneurs, organized by the *Zeister Zendings Genootschap*, a Dutch Christian NGO. "*For three years we lobbied Iamgold. By then the company was focusing on villages who worked according to a plan. It took years of only meetings after meetings. Ballingsoela, Marchallkreek, Klaaskreek, Nyun Lombe, Brownsweg were villages where Iamgold worked with a plan. There were local committees over there. We had to push ourselves to be involved in their plan as well. Now we have communicated with the Ministry of Agriculture about an agriculture cooperative. We are almost there, but will need to set up an organization to manage our affairs.*"

Iamgold and SPWE[1] are providing the group with business training and other support. Training teaches them how to grow other crops such as antruwa (African eggplant), cabbage, and string beans. Iamgold makes use of its community development funds to finance projects and buys all that the farmers deliver twice a week. Maabo is clear on a fundamental thing: to deliver for a large company demands commitment; the orders from Iamgold are large. From January to July 2012 the group delivered 22,000 kg pomtayer (tubers). "*You know what they need in a week. Depending on their demands we make our cropping calendar. Purchases are guaranteed. But at this moment we cannot even deliver 20% of what the company really needs*". The company is currently clearing 24.7 acres of forest for the group to cultivate.

As president of his group of farmers, Maabo makes it clear to the group that "*if we produce more, we can lower the percentage we contribute for costs. We have two persons who weigh the produce. Another woman has a minivan as well, in case the production is very high. Iamgold gave the corporation a tractor with plough, which we use according to a rental system, to pay the maintenance. Women are also earning money*". The group also has a secretary who administers the contributions of each farmer, which is about 20% of their incomes towards administrative and transportation costs. Each farmer has an account at the credit union bank and their payment from Iamgold deliveries is deposited in their account. Maabo admits that "*we have opportunities to make progress. It does not depend on the gold mining company, but on us*."

1 Stichting Productieve Werkeenheden, or Foundation for Productive Work Units, is a non-profit government agency set up by the Ministry of Labor, Technological Development and Environment.

As far as running a business, Maabo thinks that he has received enough training by now. He sees a need for behavioural change, starting with the people who really want to change and want to have sustainable results. Others will then believe and follow. "*I am ready to make a plan and see if I can get financing.*" Without patience one will not get any further. "*I have hope in this life. I feel that I am an expert now. Just involve me in a project, let me share my knowledge and skills and earn something. I would like to teach people some life lessons and skills. Such as: just listen to what I have to tell you. It will not all be nice, but when at home just go over it. This is how I learn myself; get education, try it out; get convinced!*"

Maabo has at least six books to gather his knowledge from. "*Knowledge is important to start, but sometimes the theory is different and sometimes practices are different.*" Maabo recalls his visit to the farm of Mr. Andre Pika in Moengo, district of Marowijne two years ago- "*the infrastructure was perfect! I would like to have the same irrigation system here. If I have that similar system here I will be where I want to be*".

Agriculture has brought benefits to Maabo and his family; "*I have a better life now; I have my own transportation now; I have been able to send my children to Paramaribo for advanced education; I can pay their fees for school and boarding. I can get in touch with them anytime I want to. I came in touch with many more people who became friends and opened doors for me.*"

Although he still coordinates the farmer group, Maabo cannot wait for everybody and goes beyond group commitments. He still has a strong desire to branch out on his own. "*To work in groups is not a real option, because sometimes you have an idea and another person has another idea and it is difficult to find common ground.*"

"*I cannot wait for the group all the time, I want to grow, get to the next level. Some people may go for a new blouse each end of the month but I really want more than that. My older children see how successful the agribusiness is and they want to join, seeing the advantages. It used to be hard to give them 50 SRD, but at this moment I always have money for them if I come from the market. If I have better infrastructure they can help me.*"

"*I do not think I am 100% successful at this moment, but I am on my way. What I have in mind now is having my own business. I would like to pay people on daily basis to work for me. I look forward to next year for the large harvest; we will work harder with more knowledge. Progress has to do with working hard.*"

Story: Maureen Silos
Photos: Eudya Vos

Proud to farm!

Beauvoir Leriche is a model Agriculturalist in the Léogane Valley, Haiti, who has planted sugarcane since 1979. In the beginning, he worked with his uncle, but later branched out on his own, farming and running his agri-business on part of his 52 acres of land. He rents some portions to other farmers and also utilises a shared arrangement with others, giving access to land in return for a share of the crops. To manage such a large farm, Leriche has invested in his own agricultural machinery which helps manage labour costs. He rents other machinery and equipment as needed.

Making a decent living from agriculture

Leriche's farm boasts a variety of sugarcanes (*Saccharum officinarum*) such as 'Ananas', 'Madan Mez' and 'CP' (a difficult variety to find). Crops of this variety will become ripe and be ready between six to eighteen months depending on the variety and the quality of the land. Beside sugarcane, his main cash crop, Leriche also plants bananas, beans and coconut. As is the case with all sugarcane farmers, Leriche sells part of the harvest to the sugar factory at Daborne at 600 Haitian Gourdes (US$14.24) a ton, equivalent to 40% of the money invested in its production. Leriche also a distiller, is the head of a group of three distilleries where they prepare "clairin" an alcoholic product from sugarcane that is consumed locally. The "clairin' syrup and the rapadou (*a rough sugar, brown coloured heavy syrup used to sweeten beverages*) are able to compete well with similar imported products. Commercial opportunities from sugarcane also appear to be very good.

Leriche is well aware of the importance of sustainability and for this reason, is exploring options, other than use of forest wood, as potential energy sources for extracting sugarcane juices. His industry modernization plans will auger well for reforestation efforts in Haiti. He is not rich but he is making a decent living from agriculture, one which allows him to face his financial obligations. He can afford to educate his three children, one of them studying aboard. He also contributes directly to employment generation, community building and rural development since in each distillery, he employs 3 to 4 persons, and as well is an indirect source of income earning activity for other persons who make a living from this business in the informal sector.

However, Leriche faces a challenge common to the numerous farmers in the Caribbean – shifting international trade policy. In Léogane, ethanol is considered as a 'cancer' to sugarcane producers. Due to imports of ethanol, production of sugarcane in Léogane has declined substantially, and is currently at its lowest level. Similarly, the price of the sugarcane and its derivatives has also declined affecting the viability of Leriche's operations. This was exacerbated by the fact that two of his three distilleries were damaged by January 12th, 2010 earthquake.

With competition from ethanol and such low prices, Leriche is not inclined to rehabilitate them. Further, since the earthquake, a large portion of farm lands in Léogane were acquired by NGO's, and as a consequence, the area is becoming more and more urbanized and land is becoming less and less available for farming.

Leriche urges vigorous intervention from the Government to save the livelihoods of the roughly 35,000 families and by extension, 165,000 (considering that every farmer is the head of a family of 5) people that depend on the sugarcane production in Léogane.

Story and photos: Talot Bertrand

Innovation for survival!

In Grenada, **Lennon Mapson** has become a famous street vendor, not for his eatery but for the daily cane juice supplied daily to his customers. What in 1992 started off as a means to earn some temporary cash has resulted in the resurgence of an indigenous product that has become a mainstay on the diet plan for many. Though sugar cane juice was a drink consumed by past generations, the young Grenadian generation is not as aware of it. Some have never even tasted sugar cane juice. However, demand for cane juice is growing as information about its many health benefits is spreading.

Cane Juice Man

Mapson, a former construction worker cannot clearly remember why he selected cane instead of a fruit. "*I began producing fresh cane juice, as a means of providing the public with fresh juice*". The cane juice was instantly in demand from locals and mostly visitors who were providing different reasons for purchasing the drink. He related how he invented his own machine to quickly and safely extract the juice from the cane. Bogged down by a machine, a less enterprising person might have decided to set up a permanent location. But Mapson decided against this. Instead, he transported his machine daily, attaching it to the back of his pickup truck. "*By using that system, I was ensuring that the customers had fresh juice produced daily, on site and within sight – from the cane to the glass*".

As demand increased, Mapson decided to change location from the village corner (in Tempe) to commercial Grand Anse - the heart of the tourism belt where most of his customers were located. That decision was well rewarded with a daily increase in the number of customers, mainly by word-of-mouth publicity. "*People were giving all kinds of health-related reasons for seeking the drink. Some were saying it was good for the flu, sore throat, asthma, cancer, breast feeding mothers; the reasons were endless*", said Mapson.

Although he has been successful with his cane juice enterprise, he has been operating without a formal Business Plan. This has affected his plan to expand the business. No sooner he started to expand, he encountered a major challenge: shortage of raw material, forcing him to cut back his operations. The fact that Mapson's expansion occurred at the same time that the Grenada Rum Factory was purchasing sugar cane from farmers, was a major factor in shortage of raw materials. But Government sold its shares in the Factory and chose to import the required molasses. Hence, most of the sugar cane farmers, the same ones who supplied Mapson, did not replant their fields.

From this experience, Mapson has since taken necessary steps to formalize arrangements with farmers for supply of sugar cane to satisfy his expanded raw material requirements. According to Mr. Mapson, "The days for this (raw material shortage) are now gone because I now have constant supplies through standing arrangements with farmers". As back-up, he has planted sugar cane on his relatively small plot of land. "*It was a quick solution to ensure that there will never be a day when I could not produce sugar cane drink, due to the short supply of sugar cane*", he said. By the time the enterprise was expanded, Mapson's wife (Sherry-Ann) became his business partner, helping to establish the operations as a family business. "*Our business has been featured in a number of publications as the producer of a local drink that must be consumed by all who visit the country*", Sherry-Ann boasted.

Though his enterprise is small, Mapson's agribusiness venture is proof that a product can survive once there is a demand for it, regardless of the circumstance. Mapson believes that Grenada is a small nation, and if Grenadians use more of what is produced locally, then the economy will improve. "*My business is in one way or another reducing on the importation of juice drinks which are usually packed with preservatives which can negatively affect our health. As small as it may be, the cane juice enterprise is providing consumers with a refreshing drink which is fresh and healthier than the imported drinks*."

Mapson urges all Grenadians and Caribbean citizens to develop a culture of consuming more locally available foods to help reduce (and potentially eliminate) some undesirable health trends. Mapson, the recipient of an MBE award for his contribution to Agribusiness, is proud of his success, so far. He plans to keep on serving fresh cane juice on a daily basis and to explore the possibility of offering other locally produced commodities for sale, in the not-too-distant future.

Story and photos: Linda Straker

A well kept secret!

Alston and Ann Nero are both full-time cassava farmers in Mt. Hartman, in the parish of St George, Grenada. After Hurricane Ivan (September 2004), the family made the choice to remain in farming and cleared and replanted cassava on four acres. When the cassava was harvested, the Nero family had no idea of what to do with such unusually large quantities of cassava tubers. Although not produced in large quantities, cassava consumption in Grenada is relatively low! Mrs. Nero remembered that her father was accustomed to make cassava flour and this memory revived a tradition that is growing into a successful family agri-business.

A wonderful blend

Reflecting on her childhood, Mrs. Nero retried her father's recipe, made a batch of cassava flour and got it tested and approved by the Grenada Bureau of Standards (GDBS). "*Over the years, cassava has only become synonymous with farine; so, introducing an added product (cassava flour) to people who do not have a taste for that product was no easy task*".

Mrs. Nero practically had to give away samples of the product which did help to spread the news about "Nero's cassava flour." But her big exposure came in 2010 when Grenada hosted the Caribbean Week of Agriculture (CWA) and "cassava production and consumption" was one of the focus areas. Mrs. Nero recalled: "*There was on display a wide cross section of products that were made with cassava flour, and this gave us a good exposure*."

The flour received a lot of publicity, as people ate the pizza, bread, cake, pudding as well as other cassava flour-based products made by the Neros. "*Though I wish that there can be more orders right now, I am confident that with time things will improve*." Although she is seen as the 'face' of the product, "the wind beneath her wings" is her husband Alston. "*It's a family business, so we work as a team in everything that is produced, from planting in the garden to doing the final labelling. He has his role, the children play their part to ensure that orders are fulfilled and that products are up to standard before reaching the consumer*", said Mrs Nero.

Through their products, cassava has had a new life! It's no longer just used for farine, but it is seen for its tasty and nutritious flour. Cassava flour is the base ingredient in so many foods, all it takes is to add a little to the mix and enjoy. "*It's the secret in my bread; it's the flavour in my cake; it's the 'must' ingredient for my baked products*", said Alston, who would have preferred not to be named because he doesn't want to openly reveal the secret to the flavour of products in his bakery.

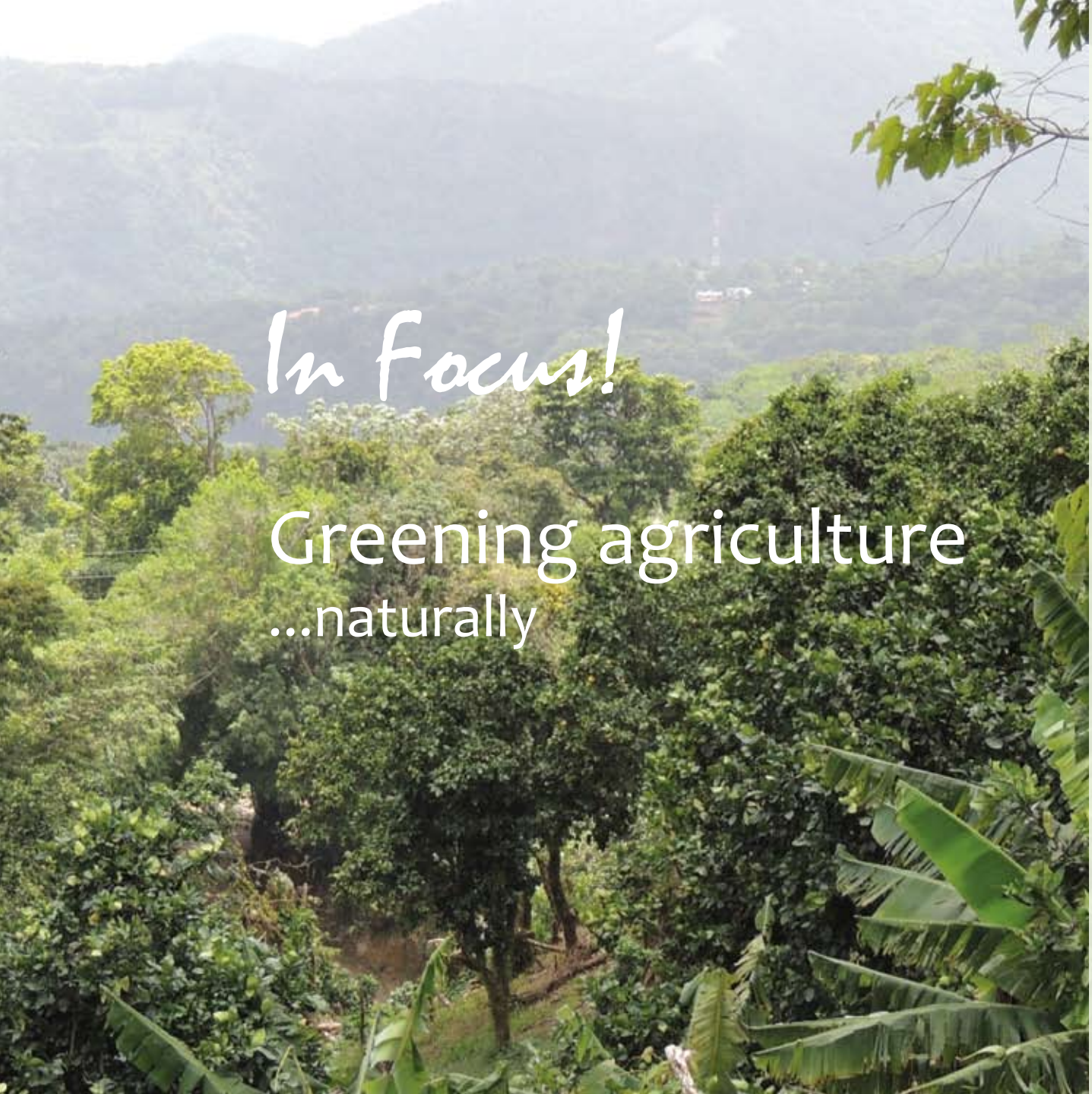
"*I discovered that cassava flour was a wonderful blend when added to the wheat flour not by chance but as a baker with years of experience*", he explained. "*It's wonderful that I can obtain cassava flour here and I don't have to import it, so all I have to do is make that phone call and collect it myself*", said the baker whose products can be found in supermarkets and at the bakery's outlet in his community.

Nero's cassava flour can also be found at most supermarkets in small packets. Large quantities can be ordered directly from the Neros.

"*I have had people buy that flour from all over the world. Visitors come to me directly, when they cannot find it in the supermarket. Cassava is a good food and should be added to our diet, the same way we eat our root crops such as sweet potatoes or yam*", said Mrs Nero. She added: "*I believe that more attention should be given to this root crop as it can become integral to our diet like it is in other territories such as Trinidad, Saint Lucia and Guyana*".

So what do the Neros think needs to be done? "*The correct framework and policy need to be put in place to ensure that our food and nutrition security is based on what could be made available locally because by doing so, we will ensure that we can feed ourselves when the import option is not available*," said the agro-processor who feels that her contribution to food and nutrition security, although relatively small, is still very important.

Story and photos: Linda Straker



In Focus!

Greening agriculture ...naturally

Nature is sometimes taken for granted and undervalued. But people cannot flourish without the benefits and services our natural environment provides. Growing a green economy requires us all to put the value of nature at the heart of our decision-making – in Government, local communities and businesses.

From" 'The Natural Choice: securing the value of nature', Presented to Parliament by the Secretary of State for Environment, Food and Rural Affairs by Command of Her Majesty, June 2011. ISBN: 9780101808224, www.official-documents.gov.uk

Producing Food Permanently!

One no longer knows if the weather will support the production of conventional crops that have been selected or genetically modified to all grow at the same rate and time. Different cultivars of the same plant may respond differently to changes in the climate, slight variations in moisture in the soil may cause blooms of certain pathogens that may wipe out conventional monocultures or demand the use of toxic pesticides. Permaculture is an appropriate farming system to maintain and preserve the genetic variability of traditional crop species for the benefit of future generations.

Creating self-sustaining farms

Permaculture - from permanent and agriculture – offers a naturally adaptive, climate smart system for sustaining food production and minimising risk. Permaculture is an integrated design philosophy that encompasses water harvesting, gardening, architecture, horticulture, ecology, even money management and community design. The basic approach is to create sustainable systems that provide for their own needs and recycle their waste and perform all the other functions of that enhance ability to adapt to climate change.

Dealing with the extremes of rainfall affecting Trinidad and by extension, the Caribbean, can be challenging. Too much water can quickly erode exposed soil, cause flooding and wipe out crops, while too little water limits farm production to a fraction of its potential. Without water there can be no agriculture!

The cheapest way of storing water in large quantities, is in the soil, followed by large earthen ponds and dams and finally, concrete or plastic tanks filled by rainfall from rooftops. An entire site could act as a large sponge that slows down rainfall and allows water to percolate into the soil and into the water table. This is important to recognise in creating an efficient permaculture design. Trapping water as high up on a slope as possible enables it to be used by gravity and reduces the destructive power of it downstream. A number of elements can help achieve a efficient water harvesting system, these include tree (fruit or timber) cover to break the force of the rainfall, contour ploughing, contour planting and swales (long , broad drains dug on contour), keeping soils covered with living or dry mulches and incorporating organic materials back into soils (carbon sequestration).

Permaculture systems, with each of their many unique microclimates, value and incorporate diversity into its design. Permaculture systems also place the household as the most important element in its design. The kitchen garden and the areas surrounding the house become the primary production areas of food for the household. Food for sales is only developed once there is a surplus of food for the household.

In many Caribbean states, the focus on export type crops at the expense of local food crops have placed a great strain on household and by extension, national food security.

A Permaculture garden will continually produce food from within a few weeks of it being planted until the fruit trees and timber is harvested... a time span of many decades. In these times of uncertain climate, having a diverse polyculture adds stability to the home garden as well as an agricultural business.

Polyculture systems that resemble miniature forests that provide a wealth of food with little labour.

the undulating topography allows for recharge of ponds through a series of swales.

Wa Samaki - a profitable and ecologically friendly farm

Located in the central range of Trinidad, on heavy clay soils that trap water quickly but dry out quickly as well, is a is a 30-acre site that runs as a profitable business, serves as a demonstration farm for ecologically friendly agriculture and provides the ecological services of watershed rehabilitation and wildlife conservation. It is called Wa Samaki ('from the fish'- in Swahili) Ecosystems (WSE).

Designed using the Permaculture process, it currently produces tropical fish, cut flowers, organic produce and has an extensive agroforestry component. Its primary income earner is cut flowers. Most of its labour is taken up with the horticulture aspect, leaving its food production systems to be simple and labour friendly. WSE has evolved over the last 15 years to demonstrate its viability in a time of changing climate and as an alternative to some of the destructive practices inherent in conventional agriculture.

With water, there is productive agriculture! WSE has created 30 acres of water absorbing surface. The drought of 2010 that affected the entire Caribbean had a heavy impact on WSE, reducing its flower production, testing its preparedness for fire and affecting its profitability. Since 2010, WSE has invested a considerable amount of money in reshaping the entire farm to trap and conserve more rainwater WSE has effected a number of design processes to harvest and store as much rain water as possible on its site for use during the dry season. WSE now has the capacity to store millions of gallons of rainwater in ponds on its site at different levels throughout its undulating topography while allowing for their recharge through a series of swales on the upper slopes of the land.

WSE complements its short-term food crops with long term tree crops including fruits, nuts and palms. WSE has an incredible amount of diversity with its boundaries - a collection of over 10 varieties of bananas and 30 varieties of root crops that produce yields at different times of the year and have slightly different nutritional profiles for a wealth of micronutrients.

WSE also has a diversity of tropical greens such as amaranth, poi bhaji, katuk, aibika, chaya and moringa that require minimal or no pest management and can produce yields continually with only a single planting. Weeds are inhibited by applications of cardboard, mulch and ground covers.

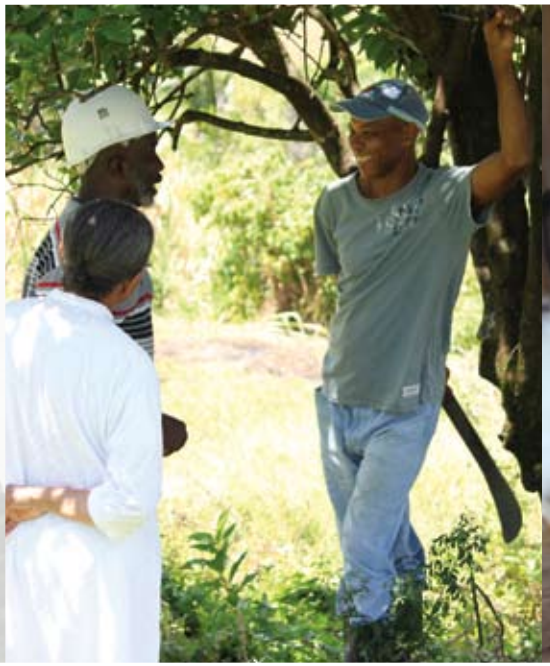
Permaculture can begin from your back door! WSE always recommends starting small, making small affordable mistakes, accepting feedback, and incrementally expanding. Applying the design process to agriculture allows for a holistic approach to be made that exposes everyone to new ideas and is replicable in all environments as there are no set rules but a set of principles that can be adapted to all sites at all scales. No two permaculture sites are the same and it is their unique microclimates and their adaptations to them that make them important learning tools for us to deal with changing climates in the Caribbean.

Story and photos: Erle Rahamon-Noronha

NB: WSE was created in 1997 when two young graduates, one with a BSc in Biochemistry and a Masters in Zoology and the other with a BSc in Animal Science and a MBA in Agricultural Business, moved to Trinidad with a plan to create a fish farm that recycled its own waste while creating a miniature productive ecosystem with minimal impact on the environment. WSE is run as a 'for profit limited liability' company. It does not receive any external funding and sustains all it development and courses through reinvestment of its profit and by charging reasonable fees for its workshops. It teaches Permaculture design through its annual 10 day intensive Permaculture Design Course following the international curriculum developed by the Permaculture Institute of Australia. www.wasamakipermaculture.org

Creative Natural Solutions!

Natural farming was a logical choice for **Lennox Lampkin**, raised in the farming village of Rose Hill which stands 400 metres above sea level on the North Western side of St. Vincent. After 30 years abroad, Lennox returned in 2006 to the most natural place for a career change - to continue the tradition his family started since the 1800s.



Healthy plants give healthy foods

After some research, Lennox decided that standard organic was less than good enough as the word organic means different things to different people. Moreover, certification would have been virtually impossible as neighbouring farms used chemicals and the possibility of cross contamination was very real. Also, for Lennox, a farm should be an eco-system, even though it focuses on a particular product (e.g., fruit farming). Integration of various components is key to productivity and sustainability. Lampkin's Natural Foods – 'LaNaF' for short, was born!

Lennox first dubbed his farming model 'zero-chemical farming' and in the last two years, has become more specific, adjusting it to 'zero-synthetic toxins', since strictly speaking, even water is a chemical! Bees which help in pollination, numerous plant blends as repellents and rabbits for manure, contribute to this farm eco system. We all lament the high and rising cost of chemical fertilisers, and the dependence of a large number of farmers on such fertilisers to achieve high yields. But such extensive use of expensive chemical fertilisers has a cost – to the soils, ecosystem and human health!

"*My 60+ rabbits do a great job as long as long as I feed them well. They are my one day composters! And of course, their feedstock is carefully selected to minimise the presence of synthetic toxins. The rabbits therefore eat much of the excess grass and fruits while helping in providing organic matter for plants.*"

Pests and diseases plague farming systems in the Caribbean. This has spawned a range of pesticides, herbicides and other agro-chemicals, often overused, to control the problem. Again, besides being expensive, these chemical come with a cost! "*I am already using chive as an insect repellent for instance on cucumbers and soon on cabbage and cauliflower*."

In looking for natural solutions for plant health, Lennox came up with a number of creative options that can go a long way in reducing toxic chemical use. These include crop partnering (e.g., Brassicas with Allium), strategically planting insect repellent plants (e.g. marigold, chives), and using local insect repellents, made from indigenous plant extracts.

Lennox knows that healthy plants can better withstand pests and diseases and by keeping down weeds in the vicinity of plants this could significantly reduce the habitat space for some pests to flourish. As a member of the SVG Bee keepers Association, Lennox has also piloted a bee keeping programme on his farm with a hope of attracting young farmers in bee keeping to both improve agricultural productivity and discourage use of hazardous pesticides. But his real creativity came out in his practical water harvesting system. Water for farming is now a serious issue in the Caribbean. The RFNSP confirms that the agricultural sector often suffers from poor water management and infrastructure in times of drought and excess rainfall.

anchoring the frame - '*good ole bamboo*'

the master water collector – *UV tent and tank*

the gravity-feed system

"*I decided to design a low-cost gravity-flow water system which is now partially operational, to harvest water for my farm. Hillside farms have a major advantage if only farmers would see the benefit of gravity. As most of the farms in the area are hillside farms with no connection to the public water system, most farmers do most of their cultivation during the rainy season. Very few have any form of water collection/harvesting or drip irrigation and are therefore unable to farm productively outside of this period. Even in the rainy season there can be short periods of dry weather that can impact considerably on production and to this end rain water harvesting remains extremely critical.*"

Lennox designed a network of small tanks that were all fed from a master tank that collected water at the top of his farm and distributed it through an automatic overflow system. He has since improved and upgraded his 'techKNOWlogy' using the new UV (ultra violet) resistant tarpaulin, meaning that it won't degrade so easily in the constantly hot Vincy sun. The new UV tarp is 14 x 12 ft (= to 15.60771 sq meters), rounded off to 15 sq meters as a margin of error for wind/angle needed for collecting water. He has 'maths-out' that 15 sq meters will deliver 15 litres of water from 1mm rain. On the day he mounted his updated system, Lennox noted that "*it was awfully rainy day today. Today's rainfall forecasted 13 mm but I am pretty sure we had well over 20mm in my area*".

Lennox admits that he still has some finishing touches to be completed specifically to address the challenge of winds and as well, the addition of a rain gauge and a wind speed meter. His plans don't stop there. Lennox is seriously pondering the 'purchase a decent weather station from the next instalment.'

Story and photos: Lennox Lampkin

Farm Waste is another source of Farm Wealth that is still under-exploited in the Caribbean. Bio-digesters that convert farm wastes into farm energy (bio-gas), are allowing small farmers to exploit synergies in integrated farming (fish, vegetables, pigs etc). An Integrated Farming System (IFS) model recently piloted for pig farmers in several agricultural districts in Belize, is expected develop capabilities of producers to increase high value agriculture production, value-added food processing, and marketing of high-value agriculture products. Required inputs included, low cost bio-digester, screened nursery boxes with seedling trays for seedling production, two covered structures for tomato and sweet pepper, irrigation systems.
The crops cultivated were cassava, chaya, sugarcane, mulberry, moringa and vegetables.

Information and photo: Steve Maximay

Adjusting for the ‘C’ factor

With pressures on land resources for development in small island developing states (SIDS) such as Grenada, ‘sustainable intensification’ is becoming an important concept in food production. Essentially, this means engaging in productive agriculture while at the same time conserving and enhancing natural resources. Simply stated it means “save and grow”; save natural resources in order to be able to grow more food!

Getting agriculture climate-smart!

Grenada, like the other small island Caribbean states, will feel the effects of greater variability and increased frequency of extreme weather events associated with climate change. Farmers that depend on stable, predictable weather patterns are already seeing shifts. There are also concerns that conventional crops will fail, food security will be challenged and the major source of global warming, expensive, finite oil, and its pesticide, herbicide and fertilizer components, will price many small farmers out of all markets. Small farmers in Grenada are already practicing a number of the several tried-and-tested traditional sustainable crop farming systems currently found across the Caribbean. Composting and cropping patterns are the most common.

Composting
Although commonly practiced, composting is generally not well done in the Caribbean. Compost is based on using friable organic material that can be used as a soil amendment or as a medium to grow plants. Among the OECS countries and Barbados, Grenada appeared to have the most comprehensive composting operations, where true compost and compost teas were prepared to nutrient-rich specifications.

Cropping patterns
Combined soil and water management usually involves use of green covers and thoughtful cropping patterns. Crop selection is based on an understanding of soil type and nutrient status. Trees are used as borders between plots and as windbreaks. On sloping land in Grenada, good coverage is provided; large plants (fruit trees) used on steeper areas with a good mix of annuals and perennials (different families and root depths).

Carbon footprint
All farmers and fisher-folk have relied on petroleum-based products to fuel pumps, tractors, engines, etc. Issues of energy efficiency and renewable systems appear to be generally 'off the radar' of many small Caribbean farmers. There appears to be some awareness of energy efficiency in Grenada, where some farmers are using solar and wind powered generators for honey extraction, water pumping, refrigeration, lighting and produce grinding/processing.

Worldwide, post-Kyoto reaction suggests that sustainability of production will be linked to climate-neutral technologies. Already, key exports of Fairtrade bananas require use of environment-friendly techniques, particularly in the use of petroleum-derived agrichemicals. There is no doubt that sustainable farm practices such as these, will need to form part of a broader agricultural climate change adaptation strategy. However, such practices will need to go beyond environmental issues, i.e., soil management practices, such as land clearing, appropriate cropping patterns, erosion reduction and soil improvement and water conservation.

They now need to be climate-smart, reducing agriculture's contribution to greenhouse gases and/or increasing carbon sequestration through water and soil management, among others.

Story and photos: Steve Maximay

Work smart

Healthy small-scale family farm systems in countries like Suriname are considered indispensable to the social, environmental, and cultural vitality of both rural and urban life. For a number of reasons, including policy weaknesses, Surinamese vegetable farmers are under increasing pressure. Every year, more and more farmers become disillusioned, leaving their farm to find work elsewhere!

The 'Wroko Nanga Koni' Project

The Ministry of Agriculture, Animal Husbandry and Fisheries, reported decline in vegetable production from 17.073 tons in 2001 to 12.344 tons in 2009. Fruit and vegetable farmers, mostly part-time, occupy roughly 4,000 small farms (between 0.19 and 4 acres). They lack mechanization and water management systems. Consequently, production is still very labour intensive and output seasonal. Knowledge about cultivation methods and techniques is lacking or limited, with increasing incidence of crop damage by pests and diseases. More and more agrochemical inputs, such as synthetic fertilizers and pesticides, are used to overcome these problems with increasing pressures on the local environment. Post-harvest handling, storage and distribution practices are also rudimentary, making farmers dependent on intermediaries for produce marketing.

With fluctuating market prices, such farm enterprises are rendered economically unsustainable, worsening the already high rates of urban and rural poverty in Suriname. This situation led to the intervention of The Caribbean Institute (CI), a national NGO in Suriname, to develop and implement a multi-stakeholder, multi-partner and multi-donor programme in 2007, titled 'Wroko Nanga Koni' , Surinamese Creole for 'Work Smart'.

Under a general theme of Food Safety and Income Security in Surinamese Horticulture, the programme assists small farmers in rural communities' to make the transition to competitive organic agriculture and develop a sustainable value chain. The innovative programme was built on three inter-connected purposes, i.e., to:

1. enhance farmer's access to information, knowledge and technology to increase production and improve quality of the produce.
2. prepare for the transition to profitable organic horticultural production with emphasis on sustainable farm management.
3. facilitate multi-stakeholder processes to link small organic farmers to local and export markets.

The choice to promote organic farming was based on its superior impacts on healthy food, healthy soils, healthy plants and healthy environments. The positive impact on crop productivity was also a priority since organic farmers use biological fertilizer inputs and management practices such as cover cropping and crop rotation to improve soil quality and build soil organic matter.

The CI developed a three-phase methodology to help farmers make the 3–5 year transition to certified organic agriculture.

- In **phase** *1*, farmers participate in group trainings and receive on-farm field guidance to implement the principles of growing safe food, (i.e. without pesticide residue). Sustainable soil management with compost is important in this stage to reverse land degradation and restore soil health and soil fertility. This phase takes 1 – 3 years, depending on the initial quality of the soil.
- In **phase 2**, farmers sell their safely grown vegetables directly to consumers in farmer's markets and other outlets.
- In **phase 3**, farmers start the process of full transition to obtain organic certification, organic certification process and collective sales of certified organic vegetables under a brand name, from January 2013.

The farmers are now entering the third phase and the CI has requested the Suriname Bureau of Standards to develop a national organic vegetable certification, which is currently being drafted. Once done, the Network of Organic Farmers in Suriname (NOBIS is the Dutch acronym) selling organic branded produce, will be launched.

Training to become full-fledged 'plant doctors'

Sustainable soil management using composting

Healthy organic field

Milestones

The results to date are very encouraging. A producer organization- 'Horticultural Collective Saramacca,- comprising 15 full-time farmers trained by the CI, sell their fresh vegetables in the largest farmer's market in Paramaribo.

In the past 5 years the Wroko Nanga Koni project has achieved the following milestones:

1. Exclusive delivery agreements with hotels, restaurants and hospitals. Because of weather-related losses, these deliveries were suspended, but will resume in January 2013, after investments in shade tunnels for protection against excessive heat and rain.
2. Sales of the produce in the largest farmer's market in Paramaribo. Farmers are earning up to 100 – 150% more than they would have received from the intermediary (the middleman) at the farm gate.
3. In cooperation with Plantwise, a program of Centre for Agricultural Bioscience International (CABI) in England, (www.plantwise.org), The CI conducted a training to become a plant doctor and now operates two plant clinics, one in the district of Saramacca and one in the district of Wanica (Kwatta area). Farmers who are participating in the project 'Wroko Nanga Koni' are in training to become full-fledged plant doctors so that sustainable plant health services can be brought closer to farm communities and farmers.

Scaling-up

In October 2012 The Caribbean Institute will scale-up the project to two other districts: Commewijne and Wanica. This will allow for increase volumes of produce as well as to serve more areas and markets in the coastal area. The CI puts equal emphasis on organic growing techniques and on business skills development, with innovative training in farm management (crop planning, crop administration and financial administration). This combination of agronomic and economic approaches has proven to be one of the basic elements of project success. In the farm management training, farmers also learn how to collectively market their fresh produce and how to ensure year-round delivery of high quality products.

The project 'Wroko Nanga Koni' provides support for the large body of research and growing international consensus which points to organic agriculture as an important source of poverty reduction, sustainable economic growth, environmental protection and climate change mitigation and adaptation in Latin America, the Caribbean, Asia and Africa. It has been consistently demonstrated that with the right support, small farmers are capable of self-organizing and participating in environmentally sustainable and competitive (cross-border) agri-value chains and thus contributing to the economic development of rural communities in countries like Suriname.

With the scaling-up to the next two districts, the project will firmly establish the multi-pronged extension model as a way out of persistent rural poverty and a way into competitive organic horticulture and sustainable rural development in Suriname.

Story and photos: Maureen Silos

Making things happen!

The backyard seems to be a place for more than just relaxation and kitchen gardening. Whilst countries grapple with policies and tangible projects to limit global warming, innovative agriculturalists are making things happen literally in our backyard. This is the case for **Kent Vieira** who put his backyard to good use! UWI Agriculture graduate and farmer, Vieira has been using and refining a proven technology to combine vegetable production with closed system aquaculture.

Green farming, more than just good business

This "aquaponics" is a green technology with potential to increase vegetable and fish yields amidst climate change induced water scarcity. As we mark the 20th anniversary of the Earth Summit in Rio de Janeiro, there is almost universal acknowledgement that human activity is negatively impacting the planet.

Mr. Vieira was always focused on having a zero carbon footprint crop production enterprise. In a Region projected to face increasing water deficits as a result of Climate Change this is not only good news but good business sense as well.

Circulating water from the aquaculture operation provides the nutrient requirements for a specially cultivated gravel-bound microflora array (a stable mix of bacteria living in the gravel bed) that in turn provides the fertilizer requirement for selected crops. In other words the vegetables growing in the troughs act as a biological filter taking out the nitrates in the water. Use of gravel bed troughs (crop beds) offer increased surface area for waste treatment and good root media for support of the plants as they grow. Compared to conventional systems, gravel also offers better surface area for increased waste treatment and that translates to greater fish production.

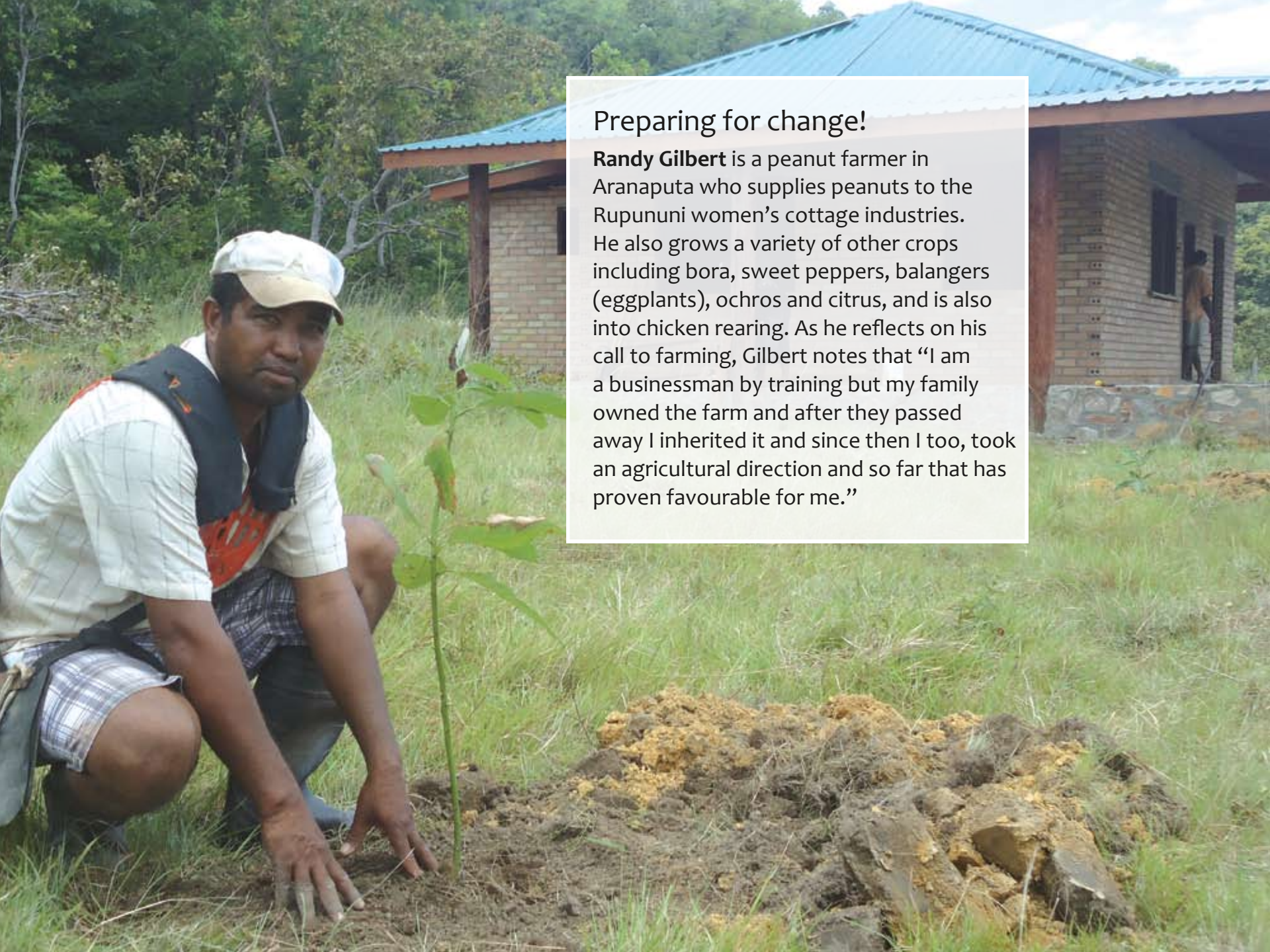
The 114,000-gallon system is totally exchanged within 48 hours and aerated using a venturi pressure principle. Although an energy efficient, minimum float switch, electric pump powers the system, there are plans to use wind power. Wind speed measurements are being recorded and the plan is to incorporate wind and photovoltaic units. The reduced dependence on petroleum-based agrichemicals is underscored alongside the water use efficiency.

Mr. Vieira was enterprising and sufficiently financially astute to recognize the need for a steady cash flow to finance the crop establishment phase. He designed and implemented a 10,000-broiler unit using red sand as the litter base. This system uses microbial breakdown of the chicken waste that negates the need for litter replacement. The income from the broiler operation was used to finance the on-farm developments in aquaculture and crop production.

The viability of the approach is strengthened by the multiple saleable products viz. filleted tilapia, vegetable crops, potting media and soon to be expanded fish-skin leather. The existing stocking rates of 3 fish per sq/ft of the 2100 sq/ft of crop beds, yields 1 pound fish harvested in 5 months. Crops like Taro, Bodi, Chives, Pimento and Tomato give higher than the normal open-field production yields. For example, the system yields 8000 lbs/acre of Bodi compared to the usual field average of 3500 lbs/acre.

The process has been developed in determinate steps with proper record keeping and a constant focus on farm profitability. It is hoped that with the correct support the technology can be further refined to alleviate some of the region's nutrition security issues, in the context of continued climate variability. It is a naturally sustainable system that minimizes the impact of agriculture on the environment. The choice of crops and cultivars is still a major operation given the potential pest risks. Additional crop trials are necessary since the 'aquaponics' technology has its challenges to maintain pesticide-free operations.

Story: Steve Maximay; Photos: Kathryn Duncan



Preparing for change!

Randy Gilbert is a peanut farmer in Aranaputa who supplies peanuts to the Rupununi women's cottage industries. He also grows a variety of other crops including bora, sweet peppers, balangers (eggplants), ochros and citrus, and is also into chicken rearing. As he reflects on his call to farming, Gilbert notes that "I am a businessman by training but my family owned the farm and after they passed away I inherited it and since then I too, took an agricultural direction and so far that has proven favourable for me."

From seasonal to year-round!

Peanut is a traditional crop grown in the Rupununi - expansive savannah lands deep and far-flung in the heart of Guyana's mountainous interior. The severe droughts of 1997/98 virtually devastated peanut production in the Rupununi. With support from a number of strategic partners, including IICA, American Universities of Georgia (UGA) and Florida (UF), the United States Agency for International Development (USAID), the country embarked on a large scale peanut recovery programme. This form of technical and research aid grew into a wider project that later attracted help from USAID, which awarded a grant to the Peanut Collaborative Research Programme (PCRP) in 2002 for work in Guyana.

Supported by external assistance, especially the PCRP, within three years after the project was implemented, peanut production in the Rupununi was booming. However, by 2004/2005, farmers faced a different kind of problem. With thousands of acreage under peanut cultivation, farmers now needed markets. "*So we had a glut situation and we now had to seek alternative markets for farmers' peanuts,*" explains Gilbert, a farmer for over 20 years. Gilbert has been involved with the peanut project in the Rupununi since its inception. He recalls the time when peanuts were practically flooding the Rupununi and the idea was born, to set up seven cottage industries across the region. These were to be operated by women, tasked to convert the farmers' peanut to nut butter. The farmers are also looking for ways to boost production to ensure adequate supplies to meet the women's expansion plans. Already food production has increased in the community as a result of the processing activities.

The Society for Sustainable Operational Strategy (SSOS) is currently working with the community of Karasabai to enhance residents' production activities using irrigated farming models. It is expected that use of irrigation technologies will help them to grow crops year-round despite unpredictable weather patterns. Although the Rupununi experiences extended periods of heavy rainfall at least twice per year, the weather is often dry and hot for most months. Rivers, streams and other waterways are often located far distances from most of the communities' farm; hence, irrigation of crops is a challenge. As a result, production in many of the communities is highly seasonal.

Gilbert is currently utilizing drip irrigation technology to attempt to combat these impacts. SSOS is now constructing a research support centre at Aranaputa that will experiment with growing various types of vegetables, seeds crops and new farming techniques and technology. The centre is expected to offer training for farmers in the Rupununi villages and deliver reliable extension services. According to Gilbert, the current PCRP funding comes to an end this June/July 2012 but farmers and SSOS are hoping that an extension or new avenues of financial support may be forthcoming to help especially with developing marketing capabilities of the groups involved.

When not on his farm, Gilberts is busy lending a hand to the Aranaputa women's group recognising the importance of keeping the value chain alive. He sees erratic weather conditions due to climate change, as threatening farmers, the women's cottage industries and food security of the Rupununi community. "*I would not say we are food secure because every once in a while when an extreme weather condition comes along, it makes us realize how vulnerable we are and that's when we see the negative impact on production and the whole process.*" As such, he sees a need to prepare farmers and the community to adapt to the changing conditions and find innovative ways to continue growing their crops despite the challenges of weather.

Story and photos: Ravena Gildharie

Hillside farmers in St. Vincent are very grateful to the Extension Services Division, Ministry of Agriculture for providing free land preparation services.
Photo: Lennox Lampkin

In Focus!

Enabling Government

Individuals have ultimate responsibility for their own health, but governments, international partners and other agencies can play a critical role in making healthier diets more affordable and accessible, especially for poor and vulnerable groups.

CARICOM, 2010

Towards awesome possibilities

Stevenson Skeete of Barbados, a horticulturist with 31 years of experience in managing public sector departments, projects and programmes, understands fully the importance of exploring production techniques to improve crop yields. As a researcher and agronomist with the Ministry of Agriculture since 1980, he has been pursuing research solutions for fruit and vegetable crops, including pawpaw. Indeed, research is among the top five areas and services that regional governments' need to invest for agriculture and food security.

The pawpaw champion

Steve has championed work on pawpaw as early as 1984. He has learned the crop "inside out" and has spearheaded work to improve its production in Barbados and by extension and possibly, the region. In the mid 80's he was responsible for a program which featured selection and improvement of solo pawpaw at the Soil Conservation Unit where he was based. This eventually led to the development of commercial solo pawpaw selections which were used in farms producing for both the local and export markets. This eventually led to provision of planting material for a 100-acre export venture at Constant plantation. Local planting was maintained at about 25 acres annually.

He has a very keen interest in the eco-physiological responses of pawpaw, spending a huge amount of time observing the growth patterns and responses of the "solo" pawpaw and other cultivars in the Barbadian environment. His most outstanding achievement, perhaps, has been the research findings of the nutritional factors that influence the development of pawpaw bunchy top disease, a disease that has plagued pawpaw production in other Caribbean countries. He produced a series of papers on this issue and published an article in an IICA fruit newsletter on how to cope with pawpaw bunchy top.

Through his consistent research, he also identified the importance of boron, calcium and zinc in helping pawpaw crops to perform in the prevalence of the disease. He developed a set of agronomic guidelines that allowed growers to obtain 70,000 lbs/acre even though harvesting was restricted to less than 5 months. Grower confidence in the crop was restored at a time when many thought it was impossible to grow it successfully.

Steve still views pawpaw as a crop with "lucrative potential". Even though he is not formally involved with pawpaw research in his current work, he is still closely studying the behaviour of the plant and is personally exploring the use of growing techniques such as hydroponics, to improve production. He still believes "*if ever we find the way to make the crop a true perennial in Barbados, the yield possibilities would be awesome*".

As an agronomist with the Ministry of Agriculture, he has also been working in other diverse areas, such as, soil conservation. He has researched critical agronomic constraints within the commodity chain for major fruit and vegetable crops, generating information that has enhanced the ability of growers to manage the crops more competitively. His research on hot pepper has led to the development of a production system that improves the yield/area/time of production and provides more efficient weed control, which has vastly improved the understanding of the husbandry of the crop.

Since 1997, he has been the coordinator of the national food crop research programme. He is currently "charting" the way to development of modern sustainable technologies –organic farming, greenhouse technology. Steve is a graduate of The University of the West Indies and holds MSc Degree in Tropical Horticulture and Crop Science, attained at the University of London.

Story and photos: Stevenson Skeete

Irish potato meets Irie Jamaican soils

Jamaica boasts a long history with white or 'Irish' potato production, over 100 years since its introduction in 1897. Soon thereafter, after successful research trials on imported seed varieties, the Jamaica Agricultural Society (JAS) mobilized local production. Government intervened around the late 1940s, and working together with growers, principally the Christiana Potato Growers Cooperative Association (CPGCA, formed in 1959) and Darliston Cooperative, the country was able to reach self-sufficiency in white potato in 1966, a mere four years after gaining independence. However, the most profound challenge came in the form of trade liberalisation and by the late 1990s, local production had declined significantly. Intervention was urgently needed!

Government and growers working together

Despite agronomic, weather and market challenges, white potato production remained an important source of income and livelihoods in rural communities of Jamaica. In the 1990s, more 'open' markets caused a flood of cheaper' imports, dominating the local market, outcompeting locally grown potatoes. The industry's demise was a real possibility. In 2008 production reached its lowest levels. The local industry was in dire need of a policy intervention!

With high dependence on imports, rising oil prices, soaring food prices, global recession and subsequent food price inflation, the Jamaican Government faced some strategic decisions on food and nutrition security. The assurance from the CPGCA that local white potato production could fully supply the local market and its unrelenting lobby for Government to revitalize the fledgling industry, tipped the scales in favour of government intervention. The Ministry of Agriculture & Fisheries (MOAF) launched a Production Productivity Programme in 2008, to expand production and improve productivity of selected crops under its food security strategy, including white potato. Since then, Government (MOAF) and growers (CPGCA) have been working together to rebuild the local Irish potato industry. MOAF support included technical advice and training through extension and marketing programmes.

The MOAF also spearheaded a specialised Irish potato loan programme to provide access to working capital at low interest rates. Its success influenced the Development Bank of Jamaica and the People's Cooperative Bank to establish similar financing windows for Irish potato farmers in 2011 alleviating a major constraint to farming across the Caribbean– access to working capital and credit. CPGCA itself mobilised its growers and the donor community for additional support. Through programmes funded by the Food and Agriculture Organization (FAO) and the European Union (EU) (ALL ACP EU Commodities. Programme), the capacity of the growers to manage the cooperative and improve their production, post-harvest and marketing was improved. The partners also took concerted action on a key element - locking in the local market – to sell white potatoes to local retailers/wholesalers and other buyers to offset competition from major importers.

Grower-importer relations also offered the CPGCA substantial benefits through their well established marketing, cold storage and distribution facilities. The MOAF successfully engaged some importers/distributors and some supermarkets to purchase, market and distribute locally produced potatoes. CPGCA also made inroads with a major wholesale club which agreed to package and deliver Irish potatoes in 5lb bags for a price just higher than the market. Therefore, linkages between famers, distributors and supermarkets have proven to be beneficial and indispensible to develop the local agri-industry.

By 2011, Jamaica had regained lost ground, achieving 50% self-sufficiency in Irish potato, with expectations for reaching 70 or 80% in 2012. Both parties are aware that this will require, among other things, availability of high quality seeds and/or capacity to produce own planting material (seeds and tissue culture) and cold storage for excess production, and importantly, policy support and production planning. With Government and growers continuing to work together and with support from the market, it is very possible that Jamaica can once again achieve self-sufficiency in white potatoes in the very near future.

A female farmer noted that she could sell the higher grades to a prominent supermarket chain and the lower grade to vendors. In so doing, she obtained a higher price from the supermarket chain and the average wholesale price from the vendor (which is lower than the supermarket's price), thus increasing her overall sales revenue. Using the advantage of being located in the cool hills of Manchester, she stored her potatoes in her garage during times of glut and sold them when the glut subsided. This female farmer has utilized the training received and market linkages made by the Ministry to her advantage.

Story: Stacy Rose-Richards; Photos: IICA Jamaica

Doing things differently

Cecil Raghobeer, a farmer in East Coast Demerara, had been planting for 15 years with his wife on their 10 acre plot at Hope Estate. With only one buyer to take his produce, he recalls that "*sometimes I would only harvest a few thousand pounds, half of what I plant and then the rain come and I don't get to harvest anymore. It (tomatoes crop) don't last long and I end up losing a lot,*" But three years ago, after observing shaded cultivation in Timerhi, he decided to invest in the technology. Although very costly, he set up a small shade house to grow lettuce.

Producer Realities + Smart Policy = Resilient Farming!

Climate change was certainly being felt in Guyana! In 2005, heavy rainfall caused massive flooding and wiped out nearly all farms straining food production and availability. With such extensive adverse impacts from extreme weather variability, Dr. Oudho Homenauth, Director of the National Agricultural Research and Extension Institute (NAREI) decided that it was time 'to do something different for the farmers'. The Ministry zeroed in on introduction of new farming technologies, mainly- drip irrigation, green/shade houses and hydroponics to adapt to weather variability and as well support year-round production.

With assistance from the FAO, the Guyana and Cuban governments signed a cooperation agreement to facilitate the transfer of tropical green/shade house technology, widely used in Cuba, to Guyanese farmers. A Cuban agriculturalist working alongside NAREI staff, tweaked the Cuban design to better suit Guyanese farming conditions. The new prototype was ready for promotion and field establishment. NAREI, working with private farmers, established several small shade houses at Timerhi, East Bank Demerara, Kuru Kuru, Soesdyke-Linden Highway, Berbice, Essequibo and St. Ignatius in Lethem, to grow high value vegetables, such as, lettuce, cabbages, tomatoes, cucumbers, peppers and celery. Some of these were previously being imported.

At first, farmers were slow to accept the technology, discouraged by the high cost since some key materials had to be imported. This partly explained the initial investment of GY$1.5 million (US$7,500) for a 230 feet x 36 feet shade house. By the time they began seeing the benefits of shaded cultivation, farmers, especially the large private sector investors, were hooked! Today, there are over 60 large-scale shade houses in Guyana worth millions of dollar in investment. "*Now the technology is working well,*" Dr. Homenauth boasts. "*It is serving the purpose for which it was introduced – to expand food production amidst weather variability*".

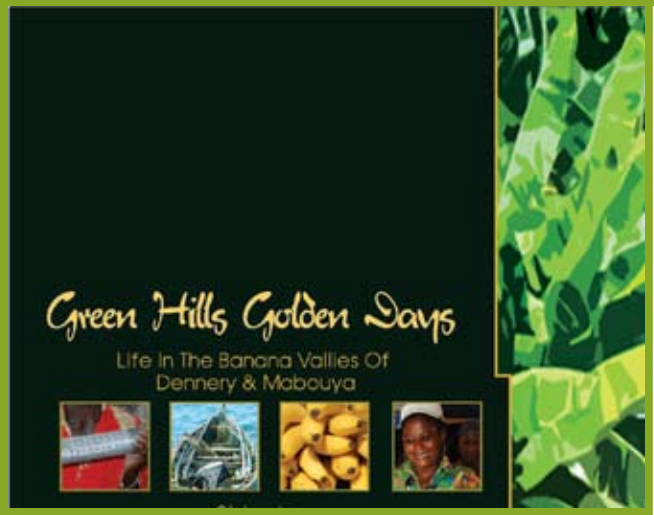
Cecil's Story!

Farmer Cecil, who started with one shade house, now has four big ones. He now supplies ten of the largest and most popular restaurants in Georgetown including Princess International Hotel and New Thriving Chinese restaurant. On a weekly basis, he sells 6, 000 to 10, 000 heads of lettuce and 10, 000 pounds of tomatoes. He also grows celery and other cash crops. Apart from the restaurants, he owns and operates a stall in the Bourda market, where his produce is also on high demand.

"*When you do this shade house, you need only half of the labour and yet you produce five times better than when growing out in the open,*" the farmer says. Apart from him and his wife, the farmer employs two workers to help attend to the farm. In the last two years of using shade houses, Raghobeer says he is still learning about the technology and gaining new experience. "*But this is the way to go,*" he advises other farmers and producers. "*It is a very good technology because it helps to make a better dollar and produce a better quality crop that all the housewife and restaurants are satisfied with.*"

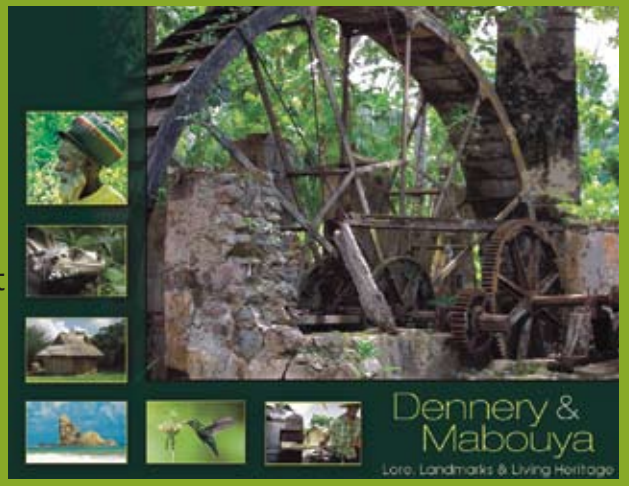
Noting the high costs associated in setting up a shade house, the farmer says there is need for the lending institutions or the government to come up with a scheme to support farmers financially in adopting the technology. He uses the sprinkler system to irrigate, using a three inch pump which pulls water from a nearby trench and passes it through hoses aligned along each bed under cultivation.

Story and photos: Ravena Gildharie



When one door closes, another will open

The general decline in banana farming has led to significant income reduction in predominantly agricultural districts in Saint Lucia. A 2005 National Poverty Survey identified the Dennery/Mabouya communities as one of the poorest on the island. Although existing eco/agro tourism activities and sites showed potential for the creation of sustainable alternative employment opportunities, the services and infrastructures on those sites were deemed inadequate and inconsistent with international best practice and quality standards.



People partnering for progress

As part of its mandate, the Saint Lucia Tourism policy promotes sustainable linkages between the agriculture and tourism sectors and facilitates wider community participation in the ownership of Tourism based enterprises. Thus, the Ministry of Tourism, Heritage and Creative Industries has partnered with the Dennery-Mabouya Valley Development Foundation (DMVDF) in the implementation of a Community Based Eco-Agro Tourism (CBEAT) project for that area.

CBEAT is a beneficiary of the European Union's (EU) Special Framework Assistance (SFA) programme established to improve the competitiveness and diversification of agricultural communities negatively impacted by changes in the banana industry. The ultimate goal of CBEAT is to elevate the Saint Lucian agro-tourism product into an internationally recognized, unique, competitive and high quality product that can be sustained by local human resources and whose generated benefits are widely shared.

Agro-tourism is seen as one way to rebuild and expand economic options for rural agri-based communities. Partnership with the EU has been vital in this regard since part of the project's focus has been on engaging local stakeholders in developmental initiatives, such as, training, mentoring, coaching, capacity building, cultural development, marketing and branding and structural development and enhancement.

Additionally, in order to ensure that all stakeholders are equipped to deliver on promises of the improved quality, efficiency, effectiveness, safety and sensitivity to the environment, specific ongoing training interventions are being employed that will equip them with the necessary skills to do so. This training ranges in content from Bee Keeping and Menu Planning to First Aid, Hazard Analysis, Critical Control Points (HACCP) and Environmental Management Training.

As it relates to ease of use and aesthetic value, five major tourism facilities in the Dennery/Mabouya area have been selected for upgrading. These are the Sankofa Rainbow Roots farm, the two look out points to the north and South of the Dennery village – La Point Layby and the Mandelé Layby, the Dennery Fish Fiesta area, and the Fond D'or Heritage site. All activities include components that improve access to the targeted facilities and sites such as upgrading of sites, signage, weathering, toilets, sitting area, parking spaces, general landscaping, picture taking deck, performance areas, bulk waste removal.

The project, slated for completion in December of 2012, is well poised to reach its objectives. Since its inception, CBEAT has been realizing ongoing success. Project highlights include the successful compilation of two coffee-table style books depicting rich eco agro related community heritage and the pursuance of organic certification for a major farming facility in Dennery/Mabouya. The agro-tourism books which will be made available at local and school libraries are intended to serve not only as a promotional tool for tourists but they are also intended to increase community pride at the local level.

At the heart of CBEAT's success is the establishment of the expansive DMVDF. It is this fifty-strong (50) amalgamation of non-Governmental Organization (NGOs), which has responsibility for the critical task of permeating all levels of the extensive Mabouya valley region and mobilizing stakeholders at the field level. Thus, such channeling of stakeholder-coordinator reception and feedback may be considered an essential practice for future replication of CBEAT initiatives.

With all the experiences, the team has come away with a reinforced conviction of the need for upholding international business best practice even in the administration of community based projects. They cite such commitment to a strong business orientation as the key to profitability and ultimately project sustainability. To illustrate this point, project coordinators allude to the need to be able to distinguish commercial partnerships through the use of clearly defined, respective terms of operation and scopes of liability.

They claim a similar need to establish clear guidelines for State/Community Economic Partnerships such as with CBEAT. It was found that the establishment of such a model for future governmental partnerships with community groups will promote a higher quality of output due to increased accountability, problem solving and ease of reporting. As such, the model being recommended will include the establishment of performance indicators which inter-ministerial monitoring and evaluation committees can use to gauge relative success. In this way, all parties involved are in agreement on what constitutes success at the operational level.

The project has potential for replication amongst other similarly impoverished, albeit culture-rich Caribbean rural communities.
The model can also provide community groups with a mechanism to apply and qualify for initial and continued use of state resources and access to state initiated funding, and as well, to forge partnerships that will sustain community development.

Story and photos: Barbara Jacob-Small

John 'Stani' Xavier tending plants at his citrus nursery in the village of Soufriére in Dominica. After seven years, he credits his success to the obtaining 'good' citrus seeds from Belize, trying his best to follow good nursery practices (e.g., keeping the site free of human traffic, clean and tools sanitized) and satisfied loyal clients. Always concerned about the possibility of diseases and implications of restrictions in the movement of planting material on his livelihood, he hopes that the relevant Government officials will work closely with private nurseries and farmers to ensure health and safety of plants and production across the island. His advice to potential agri-preneurs- "go into it big, make the sacrifice and success will eventually come".

Information and Photo: Ashley Massicotte

Development through rural enterprise

Governments of the region have always been very aware of the need to support sustainable livelihoods in rural areas as well as to build resilience to cope with economic crisis and natural disasters. In March 2006, the Government of Belize (GoB) and the European Union (EU), a major development partner, rolled out a national Belize Rural Development Project I (BRDP-I) worth Euro (€) 7,199,000 (roughly BZ$18M) under the 9th European Development Fund (9th EDF). The GoB contributed € 800,000 (roughly BZ$2M), while an (estimated) contribution of € 875,000 (roughly BZ$2.2M) was to come from the beneficiaries themselves. The "Xich Pan Hannaa" women's group, established in June 2007, was one such beneficiary.

Belize expansive landscape. Photo: Diana Francis

People like our product'

The BRDP-I project aimed to increase the efficiency and competitiveness of Small and Micro Enterprises (SMEs) and scale up their income generating potential. The investments were demand driven and combined the provision of infrastructure, capacity building, equipment,, technological resources and training. Funding was funnelled through eight (8) Non-State Actors (NSAs) and institutions, which in return were to reach out to the local communities and manage micro and small grant funding.

The Social Investment Fund (SIF) was one of the eight NSAs that received a grant to implement a project for "Emergency Reconstruction after Hurricane Dean", aimed at developing twelve (12) agricultural enterprises, rehabilitating ten (10) hurricane shelters, constructing forty-four (44) new houses and renovating twenty (20) others. The project SMEs selection process was participatory, bottom-up and supported the communities (or villages) and districts in defining their development priorities and identifying specific projects and enterprises for support. Proposals were identified and evaluated by the District Development Committees (DDCs) and service providers before submission to the Programme Steering Committee (PSC) for final approval.

The "Xich Pan Hannaa" women's group, established in June 2007, was one of the twelve agricultural enterprises assisted by SIF. This women's group is from the flat inland Spanish speaking village of Cristo Rey in the Corozal District. Cristo Rey village is home to approximately 170 Latin/Mestizos families. Corn tortilla is a staple food of the Latin/Mestizos communities in northern Belize. The Xich Pan Hannaa women's group executive body is comprised of a President, Secretary and Treasurer. The president, Flora Che is a very dynamic, active, vocal and hard working mother of four.

There is a high demand for corn tortillas and villagers travel as far as Corozal town to obtain their supplies. Through this project, the "Xich Pan Hannaa" women's group would establish a corn tortilla factory to fill the local demand of corn tortilla and masa in the community itself. The ultimate goal was to operate a profitable business venture that supplies these basic food staples to the community and creates employment for its 10 members.

In late 2009, the Xich Pan Hannaa" corn tortilla factory, equipped with tortilla oven, corn grinder and butane tank was set up in the village. A street bike was also procured to assist with the distribution of the tortilla to the other two villages of San Pedro and Yo Chen, serving an estimated six hundred families from the three communities. The group was responsible for providing the building to house the equipment. The corn is supplied on a weekly credit basis by a Mennonite farmer from a nearby community who delivers every Tuesday and collects for the previous week's delivery. This arrangement provides an additional sale for the Mennonite farmer. Tortilla and masa are being produced twice daily, first at twelve o'clock and later for the evening meal at 6 p.m. A total of 300 pounds of tortilla and 100 pounds of masa are sold on daily basis leaving the group with a total income of BZ$350 (or US$150). Members of the group are divided into teams and each team is totally responsible for the efficient management of the day-to-day operations of the factory based on an agreed schedule.

At 3 o'clock every morning the oldest member of the group, Mrs. Isabela Botes along with her husband Mr. Pedro Botes arrive at the factory to wash the cooked corn thoroughly, to ensure a tasty end-product. Mrs. Botes says that "people like our product because we start off with a well washed corn every day". To reduce waste and extract maximum value from their operations, the group developed an idea for a new by-product made from cutting unsold corn tortillas into quarters and deep-frying them. Although this new product is not yet named, these fried chips and garnaches tortiallas are becoming a favourite among their customers.

Rising to the challenge!

The "Xich Pan Hannaa" relies on donor/external funding for all aspects of the business, primarily for the initial fixed asset acquisition. But the women are desirous of improving their business and the group continues to operate on its own. They need to obtain their own building, including, a shed to cook the corn with fire wood, an activity currently done in open air. They have planned and organised weekend fund raising activities planned to support construction of the shed and as well, to eventually obtain a delivery vehicle. This would greatly enhance their business sustainability.

On rainy days, the group laments its limitation to adequately distribute its products to the surrounding villages. Not having a vehicle is the main reason for inadequacies in marketing and transport, which limits sales. The executive representatives of the group were advised to approach the Credit Union for a loan to invest in transportation means (motor bikes) to broaden their consumer base and improve product distribution. This is an opportunity; the President says that they will follow up as they already are a member of the Saint Francis Xavier Credit Union in Corozal.

The group is hardworking and eager for any assistance available, especially training in strengthening governance structures, organizational development and group dynamics. They know that managing a cooperative-based small business venture is not easy. They sought and received assistance from the Peace Corp through Ms. Gayla Misset, who has assisted the group in creating and printing promotional items, such as a 2012 calendar with all necessary information on the business, a professionally well-done business card and the organizing of the business records. Evidence of a good management structure is found in the understanding by each member of the group of their roles and responsibilities.

All living founding members are still active in the project and are very committed. The chairlady is a strong leader, she works very hard, is dedicated and passionate about their project. She speaks of "her Secretary" and "her Treasurer" and they in turn feel the importance of their position.

The women do not see themselves leaving the operation to seek employment elsewhere. All members are gainfully employed although earning minimal wages, an average of BZ $35 (US$17.50) each week in addition to 2 lbs of tortilla daily for their family. Currently, income is used to first meet all operating expenses, with savings accounting for at least 3% and the balance shared to cover labour costs provided by members. Basic book-keeping is undertaken to enhance management. The opportunity each has to operate the tortilla factory on an agreed daily shift schedule and not having to leave the village is a fundamental reason why they continue with the project.

Members of this women's group are active in the community. They shared their excitement about their participation and contribution in the provision of free tortilla during the 2011 Mothers' day programme. Giving back to the community is one of the ways the women show their appreciation to their clients. As mentioned above, the Mother's Day activity spearheaded by the Chairman of the Cristo Rey village in 2011 received donations and full support from the women's group. This is an event still remembered by all mothers in the community.

Story and photos: Nerie Sanz

The Marketing Department of the Division of Agriculture, Marine Affairs, Marketing and the Environment, Tobago House of Assembly (THA) manages the Agroprocessing Unit at Louis D'or. The unit comprises a sales unit and an agroprocessing facility.

Fresh vegetable and meat produce is purchased from local farmers and processed at the unit to produce high quality food items.

Louis D'or processes a special array of 'hams', including: chicken ham, pork leg ham, pork shoulder ham, beef ham, turkey ham, lamb ham and fish ham, all of which are popular items.

Other products processed at Louis D'or include pigeon peas, long mango, sorrel, cassava flour, guava pulp and Julie/Graham mango pulp. These products are sold on locally in Tobago and some are sold in supermarkets in neighbouring Trinidad.

Information and photos: Marketing Department, THA. Louis D'or Processing Centre brochure.

Innovating the agri-business

Demand for quality processed food products from local staples is increasing in the Caribbean. This demand is driving the search for higher yielding production at the farm level. **The Trinidad and Tobago AgriBusiness Association** (TTABA) an innovative "for development company" business model established in June 2006 is developing and producing a range of value added products from farmers crops, "paving the way" for increased production and consumption of 'wholesome' local foods.

Integrating the value chain

Value chain integration has been a long sought after objective of government policy for agriculture in the Caribbean. On May 3rd 2007, with its official launch of the National Agri-business Development Programme, (NADP), the Government of the Republic of Trinidad and Tobago (GoRTT) moved from policy objective to practical action! Aimed at transforming agribusiness in Trinidad and Tobago, the NADP is being jointly implemented by the Ministry of Food Production (then referred to as the Ministry of Agriculture, Land and Marine Resources) and the Trinidad and Tobago Agribusiness Association (TTABA).

TTABA is a unique "for development company" model established by private sector agribusiness stakeholders. TTABA is not owned by private shareholders, but by its current 33 member associations drawn from every level of the agribusiness sector in the country. Its main function, under the NADP, is to facilitate selection and development of priority commodities into sustainable and profitable agri-business industries. It has organised the company to achieve its mandate by:

- organizing and providing a range of support to farmers' organizations to undertake contract production for defined markets;
- undertaking joint venture contract processing of semi-processed raw material for the food manufacturing and food service industries;
- undertaking pilot commercial processing and marketing of new high value-added consumer packaged products from the selected commodities and divestment of these to the private sector when deemed to be commercially viable;
- undertaking research and development activities to support appropriate policy formulation, increase farm productivity and new value-added products with respect to the priority commodities; and
- facilitating and participating in investments in new agri-business ventures, particularly in agro-tourism.

Through TTABA, the GoRTT committed close to TT$200 million (US$32M) over a six (6) year period. In each fiscal year the government allocated a budget transfer, to be spent on development programmes. Between 2007 and 2012, TTABA invested over US$20 Million of initial investment capital in pilot commercial processing, marketing, research and development projects and institutional support to farmers and commodity associations. This included the development of a range of highly acceptable consumer bakery products using local varieties of cassava and sweet potato. These local flours replaced up to 70% of wheat in final products, such as bread, biscuits, cakes, buns, muffins, pizza and so on. These "healthy carbs" have been recognized as the key element in the drive towards food and nutritional security as well as reductions in food import bills. This substitution displaces heavily imported value-added products, such as, the Irish Potato, and is poised to lower the food import bill and contribute to agricultural sustainability and food security.

As demand for these value added products increased, so too did the need for higher yielding raw materials at the farm level. The local farming community is benefitting as TTABA consistently engages local farmers in identifying with creative solutions to farming problems, facilitate training to improve capacity and provides further assistance as required and within its current capacity and institutional mandate.

TTABA also seeks and engages strategic partners the Americas, including the Latin American & Caribbean Consortium to Support Cassava Research and Development (CLAYUCA). This strategic partnership is aimed at introducing thirteen (13) new cassava varieties and evaluating their suitability to our local environment and for more competitive processing operations.

As a producing entity itself, TTABA has also invested in equipment, purchasing a mechanical harvester and a cassava planter to facilitate production activities of its stakeholders. The harvester is capable of uprooting 2,200 pounds of cassava in one hour and the planter can fertilise and skilfully push 10,000 cassava stakes into the soil in one hour. In six to eight hours, the machine can plant six acres of stakes. Previously, a farmer with a gang of labourers took one to two days to manually plant an acre of the root crop. It cost as much as TT$1,500 (roughly US$240.00) manually to plant an acre of cassava and farmers have paid as much as TT$3,750 (roughly US$600.00) to harvest 150 bags of cassava. With both machines available, the farmer saves half the costs, lowering overall cost of production, making for a more competitively priced raw material for processing.

The company is also an important agricultural employer. TTABA directly employs 189 persons, provides direct permanent employment of an estimated 1,150 persons at the farm level and some 1,500 temporary employees during harvesting and 350 other individuals along the value-chain. TTABA has assisted with the establishment of a cassava peeling centre in Freeport, which currently employs an average of 25-30 persons depending on processing volumes. TTABA is also in the process of assisting the farming communities of Rio Claro and Hindustan communities in setting up of their own peeling facilities in the area.

TTABA has grown to become a highly respected company to supply various international food companies with products and services valued at over US$2 Million per year. Government agencies such as the School Nutrition Programme, the North West Regional Health Authority (NWRHA), South West Regional Health Authority (SWRHA), large multinational companies such as KFC, McDonalds, Pollo Tropicale, Pricesmart and other smaller local agro-processing firms are some important partners that purchase TTABA products.

Building relations and securing acceptance of its products among consumers was an important feat for the young and proactive agri-development company.

TTABA is undoubtedly the first of its kind in Trinidad and Tobago, and the Caribbean. At the time of its establishment, no other entity in the country was engaged in this level of development activity and value-added production. The TTABA-Government-private sector-consumer relationship has and continues to foster agricultural and industrial development that is contributing to calls for diversifying the Trinidad and Tobago economy and reducing the country's food import bill.

All innovation, especially institutional innovation, however, also face challenge. One such challenge that TTABA will have to overcome, quickly, is its financial sustainability, i.e., eventually reducing its dependence on Government budgets while still being in a position to spearhead its development initiatives.

In the future, TTABA intends to support further developmental work already being done, including continuing its work with farming associations across the country and assisting fledgling groups in becoming fully recognized and sustainable.

TTABA has also gained strong regional support for its proposal to undertake a regional programme to strengthen CARICOM food security. This programme aims to produce a range of value-added products from regional commodities, which will significantly reduce the region's very high dependency of imported staples, whilst creating a strong export platform for our own regional staples.

Story and photos: Torin Gilalta

TTABA's investment in equipment and in forging alliances with private sector is supporting farmers from farm to table!

AgriCulture goes 4G

To produce more food with less, we will need all technologies, once they are environmentally friendly.

CaRAPN Caribbean Regional Agriculture Policy Network
www.pn4ad.org

CTA
www.cta.int

IICA
www.iica.int

‘Cheap food’ can only be delivered through the most cost-effective and efficient food production systems

Go Forward!

Ian Ivey

There has been a great deal of talk about Food and Nutrition Security (FNS) within the Caribbean region in recent years. However, progress towards actually improving FNS has been slow.

Global food supplies remain tight and prices continue to remain high internationally, due to a combination of factors, including increasing demand, increasing urbanisation, land degradation, climate change impacts, competition for water, and rising input costs. For this reason a new thinking framework is required to encourage more practical and beneficial Caribbean national and regional FNS solutions that need to embrace fresh, new and ‘go-forward’ integrated approach. In fact, these solutions can lead to a whole new ‘agriculture alphabet’ starting with **A** long term vision and **A**ccountability.

NB

. . . . There are so many issues than can all be accommodated in the other letters of the alphabet all the way down to ‘Z’ ending with ‘zero tolerance’ for persons who think that farming is a dying business and a dead zone; for those producers who create health risks by not following safety guidelines; for policy makers who create disincentives to private initiative in farming and other elements of the vast agriculture and food industry (DF)

Ian Ivey. Photo: Tyrone Chang

To start:

A long term Vision of 10+ years to frame all the conversations relating to the development/delivery of FNS solutions. The ability to visualise and 'see the 'end-game' is an essential part of making anything happen, including government FNS policies for agriculture. This Vision must embrace the 'big picture' context, i.e., global <> regional <> national <> local. What happens locally is directly and indirectly influenced by what happens globally. Unless policies and initiatives are developed within a long-term overarching goal (e.g. achieving 50% self-sufficiency in food in a country/region and complementing that with a secure outsourced long-term contracted network of supply for 50% of the balance i.e. the least risk and most secure option at the best possible cost) then there is no context within which the policy/initiative is being framed and implemented. Accountability - monitoring and evaluation – is also an integral part of the process and must gauge stakeholder satisfaction on a regular basis as well as progress towards the overall end-game.

Betting on winners: Finding the opportunities or 'best bets' that are able to deliver the best possible return on investments in agriculture and FNS initiatives is a must. There needs to be a strong focus on priorities defined through broad-based consultation and collaboration which have the potential to deliver the greatest economic and social benefits. Some BBs include developing specialist high value niche industries to generate much needed income to import essential foods that cannot be grown or processed in the region. One example might be for the OECS countries to enter into 10-year fixed price contracts with Guyana and Suriname to supply all their rice and sugar needs. Belize might become a major supplier of onions on a long-term contract basis. Such Best Bets focus areas also need to be agreed amongst all the key leading edge and lead thinker stakeholders.

Connecting the players: To include whole government institutional integration (a most challenging prospect), business, consumers and all key stakeholders that play direct roles in developing and delivering practical agriculture and FNS solutions and best-bet initiatives. This should also ensure definition of roles and a new thinking about the 'Commercial' and 'Public Good' components of FNS to reduce confusion about who is responsible for what. This then needs to be dove-tailed together in the most effective way through smart and productive partnerships to deliver the best overall national and regional outcomes.

However, through the concept of the Growth & Innovation Engine, which brings together those stakeholder groups, practical FNS solutions that lead to the generation of economic and social benefits can be developed and delivered. The types of stakeholders in this group include R&D institutions and agencies, business development agencies and groups (both public and private), and educational and training institutes. They conceive and formulate ways in which the Best Bet initiatives can be practically implemented.

Delivering effective engagement: Engagement processes, systems and networks must be driven by 'Promoters' or Champions of Change, who have progressive ideas, drive implementation and lead innovation, entrepreneurship and meaningful change. The quality of facilitation needs to be of the highest standard to find the right balance of 'Promoters' and 'Resistors' through the right processes and channels to facilitate engagement in the most time efficient and effective way.

In other words, success will only be achieved by adopting a fresh new 'go-forward' comprehensive systems-based approach.

Many developing countries are taking greater risks than the majority of the Caribbean countries and some are focusing on trying to attract greater technical and commercial expertise, rather than aid, to advance their national interests. They are also building integrated systems which are essential if measurable beneficial results are going to be achieved. FNS is just one component of overall national and regional economic and social development and needs to be viewed in that context.

The thinking associated with developing any potential FNS solution, policy approach, and intervention needs to be within a big picture context. The reason for saying this is that if a national policy or solution is developed in an introverted way without having regard to regional and global influences, it may simply never work because the trends and forces acting at the wider geographic levels may have unforeseen impacts which lead to failure.

For example, promoting 'small scale, low-tech, high labour, high-cost home-based production of commodity foods, such as dasheen and cassava, is a misguided priority for use of research and development funds in the Caribbean, compared to the amount allocated towards exploring opportunities in high value opportunity areas. High value creation in a number of unique natural resources found in the region, such as, Sea Island cotton, cocoa and bois bandé, could be used as a tool to buy large-scale produced lowest cost commodity food internationally in a market where price increases are inevitable but still likely to be competitive.

In other words, a local policy initiative or activity needs to be conceived in a context that extends way beyond the national boundaries. For example, if a country decided to source 100% of its food and nutritional needs from offshore, the trends that are shaping the future global supply and demand scenarios need to be well understood as there are a number of risks as well as opportunities that could have a positive or negative future impact upon local citizens.

At the other extreme, if a country decides to encourage the supply of 100% of its food and nutritional needs from local sources, it also faces a number of risks including being a high cost producer and thus contributing towards an escalation of poverty levels within the country or being hit by a severe hurricane which destroys the bulk of the local food sources.

Thus any FNS policy and associated implementation strategy needs to provide a way of minimizing the risks for citizens at the least cost and, in most situations, the best option is likely to be a combination of global, regional, and local options. National Food Security must be the least risk model for supplying a nation's food and nutritional needs and should be a combination of:

- achieving the least risk and most cost advantageous balance between food grown within a country and sourced externally.
- achieving the greatest level of long-term supply and price stability.
- paying a small premium to ensure security is achieved.

Achieving food and nutrition security, therefore, will be based on the ability of a nation to feed itself with the least risk – at least in the basic food area - including contracting the growing of food to Guyana if they can produce it more competitively. Food security doesn't mean we need to grow all our own food ourselves!

Choices

Caribbean AgriCulture

Our Way

Last Words

Described as an innovative, fiery, mover and shaker, this trained and highly accomplished Barbadian agriculturalist and multi-talented youth in agriculture, was an active participant in one of CaRAPN's Agriculture Round Tables (ART Saint Lucia, 2011) on the theme "Breaking Agriculture out of Tradition and Dependency".

She represents all that we have covered in this publication – a youth and woman in agriculture, who is 'walking the talk', proactive, driven to succeed and innovating as she goes along, and as well, choosing to volunteer and share her time, knowledge and energies to help further the mission of the Caribbean Farmers Network (CAFAN).

We chose to give her the 'last words' on a number of burning issues that relate to the stories covered in this publication. We think her opinions are a perfect way to end this chapter and start a whole new conversation, in the hope that it will stimulate, and even 'aggravate' us all out of a mode of complacency and vague interest in the inter-connected issues of nutrition, food production and ultimately our sustainability as a people.

Candid Keeley

I'm a farmer! I chose to be a farmer! I'm farming in the open field! My idea of farming as a business is as a scientist. So I'm trying to find out all the scientific information that is going to give me the highest yields at the lowest cost, is going to be sustainable, and something that the workforce can do or that I can do. I'm looking for that information to come up with a proper business model. That is what I'm trying to do in my business.

I have determined that I am not interested in being a middle-woman, but I determined that I am interested in having a product that is going to stand on its own; that is going to be quality; that is going to represent what I am about; that is going to have a social conscience and so many other things that I determine because that's what I am about. But each farmer must choose for him/herself which aspects s/he wants to work on. Farming as a business means that the farmer will determine what his business model is. We can't dictate or 'policy' that. A business is a reusable process! Anything else is a hobby.

- **Making healthy food choices**

There are 40,000 people in Barbados with diabetes, that's 30% of our population! Barbadians are now interested in what we are promoting- the orange flesh sweet potato because it has more beta carotene in it. Our consumers are now wanting so much more! They are wanting local; they wanting sustainable; they wanting low calorie; they want to know who the farmers are; they want fresh; they want natural. They are not as interested in canned, convenience! They just want healthy foods.

The US is actively promoting the "half the plate" principle. It is a simple logo, simpler than the food pyramid, so that it 'sticks in people's minds' and hence will help them to remember to make the healthy choice. Do you know what half the plate is? It's half a plate of fruits and veggies. It is a circle split in four, and half of it is of fruits and veggies. The rest is carbohydrates, dairy, meats etc.

Caribbean people were eating nutritiously in the past. Now our changed eating habits, 'the Westernization of diets' as the CFNI called it, has changed our culture from food production to food purchasing from overseas. We are heavily influenced by the US; we are watching all their cooking shows. We now have to educate our farmers and our consumers about the foods we produce. Unless we work through the issues, we are just going to come around in circles.

I have an article by a regional agency promoting organic food as healthy food based on the premise that it has no pesticides, none of this, that and the next. If you put the message out there that other farming techniques are not good, then you are sending the message not to eat fruits or veggies; that the packaged (usually imported) stuff is better, because of food safety, etc. We are conflicted in the messages that we are sending, and creating a division in the food industry that is hurting the farmers.

- **Eating Local!**

TIME magazine in 2007 had (again) conflicting messages; forget organic, eat local! That was the front page on TIME magazine! You have 'local' being pushed as a marketing tool; 'organic' being pushed as a marketing tool; 'low cal', etc. Everywhere in the world is pushing the 'eat local campaign'.

After Hurricane Tomas (2010), there was no local lettuce. So we imported Iceberg lettuce and sales went up by 150%! When local lettuce came back on the market, the consumer was not budging. It is said that it normally takes the consumer about a month or so before they'll start back buying local produce; the same thing with the local carrots etc.

In Barbados we import about $40 million in fruits vegetables, nuts and root crops and about $20 million of that could be grown locally. We have to make sure that our products are available, continually. 70% of Barbadians buy their fruits and vegetables from the supermarket. If you buy a watermelon, you eat half and then you throw it away. In the supermarkets now they have a slice of watermelon, cantaloupe and honeydew packaged together and you can just take and eat. It is based on convenience and we have to improve packaging as a viable option for holding the 'freshness' longer. The quality factor has to be there first. You cannot 'post harvest' quality. Post harvest only maintains the intrinsic quality of the fruit or vegetable. In the US now you can actually get fruits and vegetables in snack machines in ranch dressing or in honey or whatever and the expiry date is on the containers. That is the kind of innovation and engineering that is going on out there that we can learn from.

- **Innovating Agriculture**

We have to understand how much we can do with the money and the resources that we have and target what will give us the greatest benefit, maintain our environment the most and at the same time improve the livelihood of our farmers and our people. Individualism is good. But if it is going to keep us four steps behind, then I believe in adopting/adapting something that already works, even though I did not create it.

Hydroponics is a good example of adopting a technology that works. I worked at Hydro Grow Farms for 2 years. It is the largest hydroponic system production company in Barbados with 4.2 acres under production and studied hydroponics intensively. The reality is that you need something that is cost effective; sweet peppers, tomatoes, herbs, lettuce are most suited in terms of cost effectiveness for a shared greenhouse setting because seedless cucumber comes in four weeks so the turnout is quick. Tomatoes and peppers can stay for as long as two years. Greenhouses are more effective at altitudes at 1,500 ft above sea level because humidity in the tropics is lower up there. At lower levels, pests and diseases will be a problem. So there is a lot of potential for hydroponics for those particular crops but not for every crop.

- **Adapting farmers to climate change**

Open field farming is influenced by climate, by weather patterns, etc. But that does not mean that we cannot control many other aspects of it. We can control about two-thirds of the production environment. The other one-third- weather- we can predict. Yes we can predict! Prediction models are much better than what they used to be. There are so many things that we can do to understand what is happening in our environment that could help us produce consistently, it is not magic!

There is a lot more science and technology that we can use for better planning and decision making. If I have knowledge of above-average rainfall, I know that I need my beds to be higher; I know that I'm going to move away from crops that cause problems when they are water-logged; I know that I can tell my buyers that I am expecting above normal rainfall so that they can expect a lowering of yields; I know how to plan my business; I know that I have to apply preventative fungicide like mildew, every week because I'm expecting the crop. That is why I was able to produce crops when nobody else was getting to grow any when there was heavy rainfall. I knew what was happening. This information is readily accessible! We need to help our farmers to understand these things.

There is a sustainable way to produce food, absolutely! But many of our traditional practices aren't sustainable. The sustainability comes from understanding our environment and maximizing your output and from the environment without causing severe harm on the environment. Going green is actually something we should encourage our farmers to do because it meets the idea of becoming more efficient, particularly in crop production. I completely support that. I think that we have to use it as a marketing strategy because those are the tools that we, as small island states, have and should exploit. Labels, like carbon footprints, organic and fair trade, are all part of the marketing game for food.

- **Culturing a Professional Farmer**

The reality is that in agriculture, food crop production is a market-led activity; Not a market-led profession; And that is an issue! They don't understand the vegetable industry in transition. They see the imports coming in and they automatically are fighting against it. We still have farmers fighting with the middle-men thinking the middle-men have no use. But they do - they need to consolidate produce. We have not explained to farmers the significance of the of the supply chain. We have input suppliers who don't know that their job is to bring information to the farming community.

I sit with many farmers and many of them do not understand a lot of the policy issues. We have farmers who don't understand what the role of government. They feel that the government should bring all of the information to them. There are all these linkages which we have not explained to anybody what they are supposed to be doing or how they are supposed to be doing it. And that is where the intervention really needs to come in.

My challenge is not with the government. Really and truly the government just needs to provide the enabling environment. What we need to do is empower our farmers so that they can sit at the table and have sufficient scientific knowledge, sufficient business knowledge and support from the kind of people who can give them the advice to allow them to do their business. This is where we are falling short!

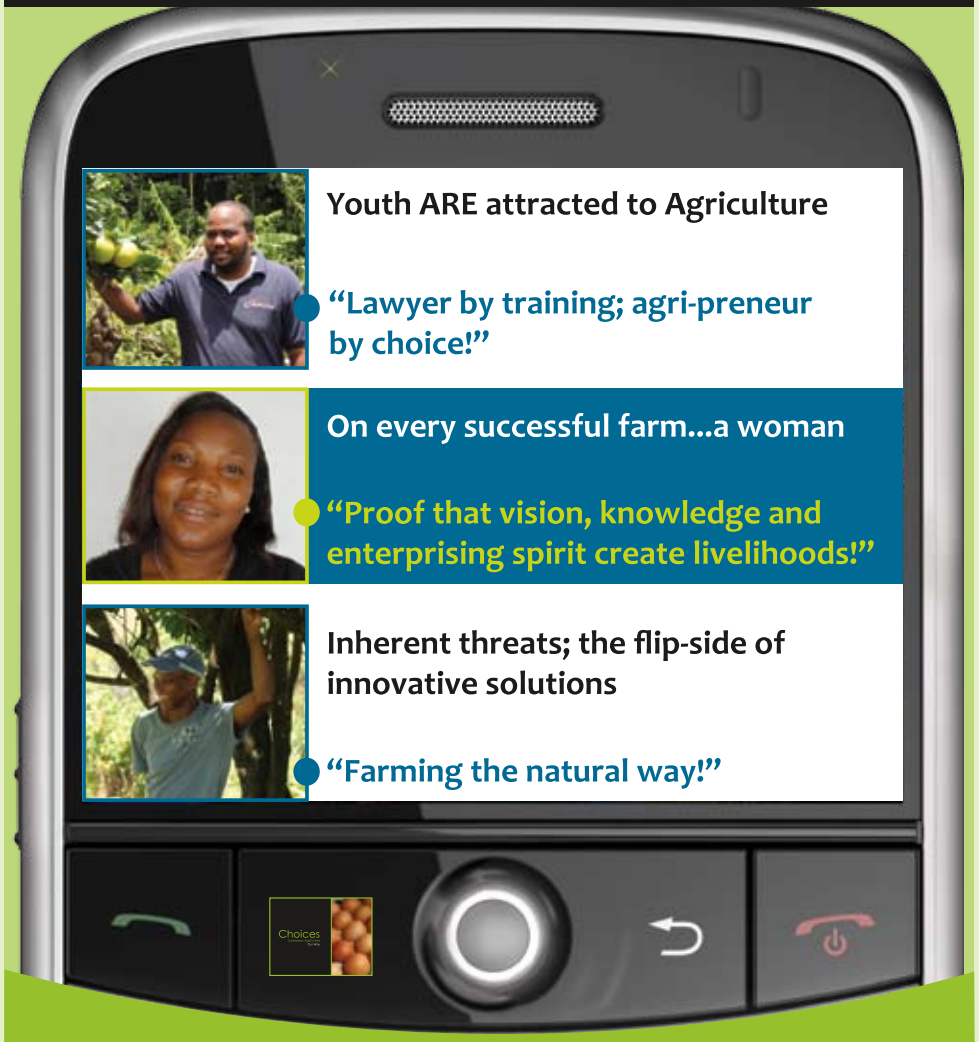
- **Development Policy for Agriculture**

We have a serious leadership problem; a serious lack of skills; of negotiation skills; of strategic thinking skills, within the farming communities itself. There is a serious lack of appreciation or understanding for why we need to sit down at the table and talk. I keep talking about America and not the Caribbean, because I cannot find the statistics or information that will allow me to say this is how I want to do a medium term strategy for the next 5 years. I have to dig through the archives and the people that are supposed to know, don't know! I have gone to the Caribbean Food Crop Society conference proceedings from 1972 to dig up information that I can't find anywhere else and thank goodness it's online. This is a problem! I can't tell you lots of things about Barbados or in the Caribbean because I don't have it. So how can I plan for my sector now and say here are the steps. I can't tell you how many producers in Barbados are growing X, Y or Z, and how we are going to tackle this.

We need to re-design the careers and the opportunities in agriculture, like certified crop advisors, integrated pest management specialists, pesticide applicators, etc. We need more of them to support the farmer because anytime you have a sector with a knowledge worker and unskilled labour you won't get very far. You need more technical support in the system and not just agronomists and entymologists which are pure sciences but we need people in there.

All of us have a role to play; the farmer, the government and all of the agencies have a role to play, it is not one or the other. New farming says that we need to have things to go to the next level, we need to spend more time planning, that's where it is; in the planning. As long as you plan and you know how you are going to execute, then you can, but we are not doing that.

CariBBean AgriCulture
Best Bets Messaging



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They made their Choices. What are yours?

'home kitchen fuelled by farm waste converted to farm wealth - 'bio-gas'
Photo: IICA Saint Lucia

Feedback

This publication - focussing on people taking the initiative - is a nice idea because we have been cultured to depend on governments to do everything. We are seeing more and more small, simple, ordinary citizens, making extra-ordinary sacrifices, taking serious and unsecured risks to start and persevere in small businesses in agriculture that are making a difference for their families and their communities. They could make better impacts at the national and regional levels, if these small, yet individual efforts, through collaboration and clustering, become organised into a critical mass to build sustainable industries. The governments and the development agencies have the responsibility to facilitate and enable this to occur.

This is even more critical since these types of small farm-based operations are predicted to be the third industrial revolution, premised on sustainability, where each farm, each building, each household would become mini-factories producing alternative energy from biogas, the sun and wind - which are virtually free in the Caribbean. Think of the possibilities for cooling, storage and processing at the farm and community levels, for household energy, etc. Can you imagine how this would level the playing field for small agripreneurs in remote parts of Caribbean countries, like Vilma (Guyana) and the womens' group in Aranaputa (Guyana) and Xich Pan Hannaa (Belize)? Add to this the opportunities for strategic marketing through e-commerce and even, the widening world of social networking media. Other countries in the world have already started; some are just beginning this revolution! What are we waiting for?

Naitram Ramnanan,
Regional Representative and IAS Coordinator
CAB International, Caribbean and Central America

Choices showcases a few of the several individuals, farm families and community groups in the Caribbean that have made the choice to enter, stay and focus on achieving success in agriculture.

"Refreshing reading. Great insights into what is happening around the region to drive food and nutrition security. It provides fascinating accounts of innovations in aqua-culture, hydroponics, permaculture, shade house technology and organic farming, which are just some of the stories that will capture your attention of an agri revolution happening right in your own backyard! The authors give readers rare insights into the way Caribbean peoples are mobilising locally to meet the urgent demands for food security in the face of climate change, over-dependence on imported food and a general lack of inter-regional cohesion by governments on Best Bet solutions. With young Agri-Culture entrepreneurs spearheading new methodologies and approaches to farming and production in the region, self-sufficiency in Caribbean food supply appears both achievable and profitable."

Linda Hutchinson-Jafar,
Caribbean Journalist
Caribbean PR Agency

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