From the Ground Up

BLACK GOLD

WYNDHAM'S BAJAN COFFEE ROASTERS

CRAFTING A LEGACY

LIFE SCIENCE

POWER PLANTS
BioIsland is the official publication of Export Barbados (BIDC). Barbados has a legacy of sugar and rum production, a history of strong biotech exports, a work force and strong academic record in biotech and life-science fields, the ingenuity to be leaders in biotech exports and is positioned to be a prime destination for leading biotech businesses from across the globe. Barbados, the Caribbean’s first biotech island, is at the centre of our strategy for inward investment and sustainable industrial development.

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Printed and bound in Barbados.
I extend hearty greetings to the readers of **BioIsland** in this, our first edition of the magazine.

**BioIsland** has its genesis in Barbados’ long and rich history in life sciences for the development of its Biotechnology sector. We at Export Barbados (BIDC) embrace the vision that life sciences and technology will play a key role in Barbados’ emergence from the financial, trade, and health storms that have threatened the very existence of Small Island Developing States (SIDS) over the past two years. Our realignment has allowed us to place greater emphasis on building a sustainable economic climate and a supportive operating environment within which life sciences and biotechnology can thrive.

For too long, Barbadian exports have been fuelled by a limited number of products. Product development has been a secondary consideration for some local exporters and many markets have not been touched. There has been minimal uptake of the provisions of the bilateral treaties and agreements to which Barbados is signatory, leading to weak balances of trade in most markets. Nevertheless, the island provides a supportive environment and workforce for world class export products and services.

Careful analysis of Barbados’ certified exports statistics have confirmed that Barbadian exports are grounded in life sciences and biotechnology. Approximately 75% of this country’s exports are biotrade-related. Almost half of the island’s certified exports are generated by a handful of companies and the majority of these by 5 companies. There is an urgent need for both product diversification and an increase of the number of companies exporting.

**BioIsland** will, inter alia, chronicle the development of Barbadian industry and opportunities as Export Barbados (BIDC) partners with producers and exporters to leverage the rich legacy of life sciences and biotechnology to both expand the range of available, exportable products and services and the number and diversity of producers and providers. The publication will inform, educate, inspire and offer insights with biotech thought-leadership, features, stories, research, reports, trends, market opportunities and more.

Join us on this breath-taking journey into Barbadian industry!
Chairman’s Message | JOHN ROCHEFORD

As a vulnerable small-island state, threatened by climate change, we have the unique opportunity to be inspired by our legacy in biotech, circular economy approaches, renewable energy, cleantech and the life sciences to improve our product offerings, services and exports. Our legacy, paired with innovation and investment could help us compete in international markets and show the world a better way.

Barbados has a rich history of sugar and rum production. In the past, we used canes to prevent soil erosion, the wind to power mills that ground canes, bagasse to fuel our factories, and we embraced a wealth of sustainable and circular economy practices. Many of the people who worked in the sugar industry, before and after slavery, used traditional plant-based medicines, treatments, tinctures and teas to treat wounds, control blood sugar, blood pressure, improve skin conditions and support health and healing. Barbadian clay was used to make cooling, earthen water-vessels and the leaves from the banana tree were and are still used for the biodegradable wrapping of our conkies. We have even used the sun to heat water and to power homes, lights and businesses and continue to do so through solar technology.

These old traditions may not be the glamorous inventions that immediately excite us but they reference traditional, cultural practices, industrial approaches and postures of sustainability that could serve us well in our fight against climate change. The thinking and postures that inspired the climate-friendly and sustainable solutions of the past, could unearth innovative opportunities for development when paired with new scientific research, technology, and processes.

With Barbados’ rich history in biotech exports, strong academic record and potential work force in biotech and life-science fields, we are positioned to be key exporters of biotech and life-science-based products and services and a prime destination for leading biotech businesses from across the globe.

By embracing our legacy, valuing education and tapping into ingenuity, a collaborative spirit and relentless ambition, we can create a new trajectory of growth for our island, one that is built not only by the sweat of our brow but by the knowledge and skills that are replete across our land.

For many generations Barbadians have utilised biological processes and materials to create valuable solutions.
I am honoured to contribute to this inaugural edition of Export Barbados (BIDC)’s BioIsland magazine and to play a part in reshaping Barbados’ International Business sector. We face a formidable foe in the task of recovering from the effects of Covid-19 and rebuilding our economy. Indeed, what we have faced and now face is unprecedented but, as many notable thought leaders have expressed, adversity is the mother of invention and I believe that we are up to the task.

Research and data have indicated a depth of knowledge and a wealth of opportunities for Barbados in biology, technology and life sciences. As we introduce strategies to increase investment opportunities, develop new industries and markedly increase exports, I have no doubt that, in time, we will reap the benefits of these efforts. By these strategies, and also by the daily actions of Barbadians, we are crafting our fate and our future.

As we etch our place in history as a new Republic, we have the opportunity to see our boundaries as wider than the physical construct of a small island. We can see the virtual and physical world as our market, embarking on new ventures within both.

We can view the Caribbean Sea, not as what divides, but as what connects us to our brother and sister islands. Like our fore-parents, we must take vigorous and positive action, break barriers and continue to punch above our weight.

Recovery cannot be the responsibility of just a few Barbadians. “We” are one of our greatest strengths. We have built strong institutions. We have educated ourselves. We have advanced our people, our social systems and our economy. This is the Barbadian legacy. We have done it before and this time is no different. It will take all of us – every Barbadian, at every station in life, choosing to take pride in building an industry that is resilient, one that is built to last.

Together, let us craft the future we want for ourselves and all who call Barbados home.

We are the craftsmen of our fate.

THE HONOURABLE RONALD C. TOPPIN
BEGINNINGS

This inaugural issue of “BioIsland” magazine, themed “From the Ground Up,” offers insight into some of Barbados’ foundational beginnings. We explore the roots of our plant-resource dependent industrial legacy as a former sugar-production colony and discover where we could go as we build an independent republic on the 400+ year-old foundations that have grounded us.

Our origin story is multi-faceted. We are proud of our past accomplishments while recognizing the adversities we have strived to overcome together. We intimately know the pain of our beginnings and the challenges that still affect us today. While our origins are permanent, we are not fettered by them. The worst of the past does not dictate our future.

Beyond origins and agriculture, “From the Ground Up” points to the power of our greatest resource: our people. The “people on the ground” help determine where we can go as a nation. Perhaps, most significantly, “From the Ground Up” alludes to a complete and thorough rethinking and restructuring of a system; the building of something new from its very foundations. We may ask ourselves, “What foundations are we laying to shape the next 400 years?”
In this issue, we journey readers through key themes that we consider vital to envisioning a bio, life-science and technology based future Barbados. Imagine dwelling in breezy, light-filled homes powered by renewable energy; indulging in essential oils extracted from plants grown on formerly barren lands; protecting our skin with a cannabis sativa and aloe barbadensis moisturizing serum; nourishing our bodies with organic, sweet potato pancakes, topped with a spiced muscovado and rum syrup.

We invite you to imagine a redefining of what “Made in Barbados” can mean as we offer our services, products, spaces, intellect, ingenuity and workforce to the world. Reimagine a Barbadian livelihood and future, grown from the ground up.

Unearth opportunities that can grow from and benefit our land.
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GOLD RUSH

UNEARTHING THE LEGACY AND POTENTIAL OF MUSCOVADO SUGAR

By PAMEL AND CONCEPTUAL ILLUSTRATIONS BY ALEX CARRINGTON
BARBADOS may have struck gold and discovered an avenue to economic success in the future. I refer to Muscovado Gold, the name given to Barbados’ distinct type of brown cane sugar. For centuries this distinctive golden sugar has been produced on the island, resulting from the unique combination of year-long sunshine, coral-based rich soils and tropical rainfall. Muscovado is darker than typical dark brown sugar with a moist, sandy texture. Because of its deep color, bold flavor, and solubility, it works well as a sweetener. Also known as Barbados sugar, khandsari, or khand, Muscovado sugar was once made in abundance in Barbados and traded internationally to refineries in Europe. Today, the island nations of Mauritius and the Philippines are among its biggest producers, with India being the top producer.

Muscovado is almost completely non-processed, and is viewed by the market to be of the highest quality. The nutritional values for Muscovado sugar are higher than those for white sugar or refined brown sugar because it preserves minerals such as magnesium, potassium, iron, or calcium from the sugar cane plant. It is also high in antioxidants such as polyphenols, which are known to prevent cellular and free radical damage associated with cancer and NCDs. This is good news for Barbados as global consumer trend reports indicate that “well-being is at the forefront of consumers’ minds.” (Mintel, 2021)

Through the manufacturing process, each Muscovado sugar crystal ends up covered with a thin layer of molasses, which gives it its moisture and dark color. This sugar has strong sugar cane flavor with hints of nut, butter, caramel and licorice.

The English name “Muscovado” is derived from a corruption of Portuguese açúcar. There is no legal definition of Muscovado, and no international standards for it such as Codex Alimentarius or Protected Designation of Origin. This has led to manufacturers calling various sugar products “Muscovado”, and has led to confusion between Muscovado and brown sugar. Total global production is 10 to 11 million tons annually by 20 nations. These facts present the perfect opportunity for Barbados to secure a Geographical Indication (GI) or other designation of origin as the product is known to have originated in Barbados.
This distinct product certification could allow Barbados’ product to be marketed as a prime branded product at several times the bulk price currently earned on global commodity markets. The effort to secure and brand the product could be justified by the returns which include a celebration of the historical significance of Barbados sugar, technology and tradition.

Sugar has been an ideal crop for Barbados. White gold as it was called, produced great wealth, fame and stature for the island and was in many ways suited to the island. It made good sense to grow sugar economically and horticulturally as its root structure helped to preserve the fragile top soil. Barbados’ legacy, knowledge and expertise in sugar is rich as the island has been producing Sugar Cane for over 400 years.

This tradition has also yielded renowned sugar cane research. Barbados was first to discover how to propagate plants from the seeds of the cane arrows in 1858. This led to the establishment of a sugar cane genetic research and breeding laboratory that produced research that helped to make Barbados the foremost producer of sugar in the Caribbean, and the birthplace of rum. Barbados’ rich sugar tradition has resulted in some of the best sugar in the world.

Unfortunately, in 2019, sugar cane production for Barbados was 84,589 tonnes, down from 1.46 million tonnes in 1970. World sugar trade averages about 64 mln tonnes/year. Raw sugar accounts for around 60% of international trade volumes with annual growth averages of 2.01%.

**Global Trends For Muscovado**

The demand for cane sugar is growing around the world, with the Asia and Africa regions emerging as the fastest growing markets, owing to the increasing population and the demand for sugar in the expanding food and beverage, and pharmaceutical industries. Furthermore, with growing health consciousness and attention to well-being among consumers, the demand for organic and clean-label ingredients has gone up, with a high emphasis being placed on the source of the ingredients and their quality.

In the United States, EU, and the Middle Eastern countries, the usage of cane sugar has been constantly growing. Muscovado sugar has also increased as a source of natural sweetener along with
flavour and aroma in candies, chocolates, and bars. Growing applications of refined sugar in bakery and confectionery is further pushing revenue generation in the overall muscovado sugar market.

**The Market Opportunity**
Demand is expected to increase in developing countries, due to population growth and urbanization, rising incomes and shifting dietary patterns. Global sugar production is projected to recover from the current dip and expand by 15%, from 176 megatonnes (Mt) in the base period to 203 Mt by 2029, with 96% of the projected increase originating from developing countries.

Market trends are also driven by priority of health foods and clean labels. Trends indicate that many consumers across the globe claim to have clean label food products. Muscovado sugar, which is natural, is expected to play an important role in a number of food applications, particularly in the bakery and confectionery industry due to its flavor and high solubility.

**Strategic Approaches**
Barbados stands to benefit from a strategic approach to leveraging the global demand for Muscovado Gold sugar which originated in Barbados. Approaches include the use of a GI designation of the branded product, branding and attractive packaging of the sugar and the location of suitable distribution alliances to allow the product to be appropriately positioned in retail markets. The increased export of a packaged, branded product from Barbados could yield several times the current exports to bulk commodity markets and could fully leverage the current capital investment in Barbados’ Sugar Cane Industry. Muscovado Gold Sugar could truly reinvent the Barbados’ sugar industry allowing many more years of profitability.

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**PAUL WAITHE**
A trained professional in Agribusiness and international trade policy and law, Paul manages a team of business advisers in the provision of business consultancy in the field of business development and export marketing.
THE STORY of Walkers Reserve is one of connection, reconnection, transformation and regeneration. For over 50 years, Walkers Sand Quarry has provided silica sand to Barbados as the largest mine on the island, helping to shape the nation’s landscape. As the sand mine was nearing the end of its journey, our founder Ian McNeel had a vision for the future of the quarry, one that could make a global impact on the fight against climate change. He asked the critical question, “How do you increase biodiversity and regenerate a sand quarry?”
In 2011, Ian assembled a team of local and international experts to explore the potential for using regenerative design principles to restore the quarry’s landscape ecology. Today a new story is emerging for Walkers; one of biodiversity, ecological health, and regeneration. This model of regeneration is the largest of its kind in the Caribbean, illustrating the extraordinary potential for reversing climate change through increasing biodiversity, enriching soils, restoring watersheds, and enhancing ecosystem services.

Walkers Institute for Regenerative Research and Design (WIRRED) is a non-profit organisation and charity, born out of the regeneration of Walkers Sand Quarry. 277 acres of mined lands on the East Coast of Barbados are being transformed into a living laboratory for climate resilience. As a part of the Barbados System of Parks and Open Space, Walkers Reserve is one of the most unique sites in the Scotland District. The reserve sits in Belleplaine in the system of national parks. The national vision is for these areas to be protected and improvements made to their condition, in particular to address the impacts of climate change and increase resiliency, ensure the conservation of the Natural Heritage System, meet the active and passive recreation needs of residents of Barbados and enhance amenities and the overall landscape of Barbados for residents and tourists alike.

Progressive approaches for the adaptation to and mitigation of climate change is critical as this is the defining crisis of our time. According to the UN, the last four years were the four hottest on record. As global temperatures continue to increase, Small Island Developing States (SIDS) like Barbados become even more vulnerable to sea-level rise, altered rainfall patterns, and storm surges. These impacts are exacerbated in SIDS because of our small geographical area, isolation and exposure. Over 43 million people live in the Caribbean. If no action is taken, entire cities could find themselves underwater within our lifetimes, displacing millions of people.

Mitigating the effects of climate change and increasing our climate change adaptability should be a focus of all SIDS given our levels of vulnerability. At Walkers Reserve, we are prototyping and testing techniques that build climate resilience through regenerative agriculture. Our Regeneration Team works daily to implement our strategies which require planning, experimentation, implementation and monitoring as we determine the best regenerative agriculture approaches for our context. Regenerative Agriculture is defined as a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services. By capturing carbon in soil and aboveground biomass, Regenerative Agriculture aims to reverse global climate change. At the same time, it offers increased yields, resilience to climate instability, and higher health and vitality for farming communities. The system draws from decades of scientific

Over 43 million people live in the Caribbean. If no action is taken, entire cities could find themselves underwater within our lifetimes...
and applied research by the global communities of organic farming, agroecology, holistic grazing, and agroforestry. As an organisation, WIRRED is committed to research, educating future generations in environmental stewardship, fostering partnerships and connecting/reconnecting communities with their land and seascapes. We are focused on climate adaptation and resilience; regenerative agriculture and food security; land regeneration; water quality and access; oceans, soils and freshwater systems; marine and terrestrial biodiversity; local and international eco-agritourism; community development and livelihood generation through circular economies and regenerative business; human health and well-being; youth and technological innovation; and renewable energy supply and distribution.

To ensure the sustainability and viability of Walkers Reserve and our regenerative projects, WIRRED continues to develop several enterprises as we push to develop the bio and circular economies in the region. We understand that the economy and environment are inextricably linked. As a result, our approach to business is one where all enterprises must have beneficial ecological and social returns on any investment. Our knowledge-based approach, building on the lessons learned over the past decade of regenerating Walkers and
WIRRED is exploring the potential for product development within the Bio-Economy by developing Walkers Reserve into a hub for climate resilience and bio-economy product development.

The expertise of our team, has seen the emergence of several products and services that we have begun to offer to the public. These include tours, apiary products, beekeeping services, plants sold through our nursery, training and skill-building opportunities.

Our ecotourism offerings include various tours and experiences on site which allow visitors to enjoy one of the most unique sites in Barbados while reconnecting with nature and learning about our approach to regenerating Walkers. The reserve comprises several and varied habitats such as our littoral forest, dunes, coastal grasslands, lakes and mangroves. Knowledgeable tour guides take visitors through the site building awareness of our flora, fauna and our ongoing regeneration activities. We have also begun to offer educational tours to schools, building on our earlier initiatives where several university groups have conducted field research at Walkers. Areas of focus include agroforestry, horticulture, ecology, biology and archaeology.

Another enterprise is the Walkers Reserve Apiary Programme, better known as WRAP, which is a beekeeping cooperative that supports regenerative beekeeping practices. The programme aims to prioritise the health of bee populations over their commercialization to build robust environmental and community benefits in light of a changing climate. This includes supporting local endemic species in addition to honeybees to build resilience in our local pollinators and food systems. WRAP produces hundreds of pounds of raw honey annually as it manages apiaries both onsite at Walkers as well as offsite at several locations across the island. Members of the WRAP team contribute to the cooperative through their own residential apiaries and we have also established apiaries for other organisations. Honey is harvested from these apiaries which must adhere to organic beekeeping standards. In addition to honey, we also produce honeycomb, beeswax and associated retail products which can be found at The Local in Speightstown. Beekeeping training and mentorship is also offered by the programme as well as hive removal services and hive management services. WRAP is being developed to meet local needs and is also exploring opportunities for exporting its products and services. As we look to the future, WIRRED is exploring the potential for product development within the Bio-Economy by developing Walkers Reserve into a hub for climate resilience and bio-economy product development.

We also provide opportunities for skill-building, knowledge sharing, cultural exchange and capacity development. The majority of our Regeneration Team are members of the Belleplaine and wider St. Andrew’s parish community. Building a culture of regeneration requires empowering members of the community to apply their traditional knowledge to protecting their natural landscape and conserving their natural resources. Walkers Reserve holds space for the application of this traditional knowledge as we work with the land, not against it, to implement our regenerative work. The arts are also integrated into our initiatives as plant patterning, earth building and visual attractions.
including signage must be carefully designed to function but also add aesthetic value to the experience that is Walkers Reserve.

WIRRED is dedicated to inspiring and teaching other extraction-oriented businesses around the world how to develop regenerative post-extraction models that benefit local communities and the environment by restoring such areas back to ecological health in a similar fashion to the pioneering work of Walkers Quarry. Our vision is planetary regeneration, and we continue to play our part through applying our values of authenticity, innovation, abundance, empowerment, inclusiveness and integrity to our work. However, this work cannot be done alone. It takes a huge amount of resources, financial and otherwise, to develop, manage and move forward a project of this scale. Therefore, working with and being supported by partners from all spheres of the public, private and civil sectors is a key to succeeding in this vision as WIRRED continues to create a model of regenerative practices, connecting and reconnecting people to the environment.

JEHROUM WOOD
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& DIRECTOR OF RESEARCH AND DEVELOPMENT, WIRRED

An Environmental Manager who aims to find solutions that strengthen people, the planet and our pockets. From spatial planning to video production, he applies a natural science lens to assessing problems and creating sustainable solutions for multi-sector organizations.
Leveraging local botanical pharmacopeia for health-based products and services

Power

Plants

By DR. DAMIAN COHALL

PLANTS have been considered the cornerstone of the modern pharmaceutical sciences and have been used for medicinal purposes for approximately 5000 years (Rang and Dale, 2013). The Caribbean, inclusive of Barbados, has a rich base for folklore practices involving the use of botanical medicines. These practices have been historically linked to the enslavement of West Africans during the 17th – 19th centuries, emigrants from Europe and Asia, and to the original
native inhabitants, Amerindians, from some territories in the Caribbean (Feng, 1956). These cultural practices have evolved and have contributed to the rich flora biodiversity of the Caribbean and its health resilience over the past 5 centuries.

Unfortunately, there remains an immense untapped economic potential from the use and commercialisation of Caribbean-based natural health products and related services. The Caribbean has a unique selling point with a number of plant species with reported medicinal effects and its unique land topography. Economic activity emanating from the use of natural health products can benefit from a well-established global health and wellness industry which focuses on the use of products and services to contribute to the well-being of the body, mind, and spirit. This market is forecasted to grow by US$1.39 trillion during 2020-2025, progressing at a compound annual growth rate of 6.29% (Technavio, 2021). Factors driving the growth of the health and wellness market are the rise in chronic and non-communicable diseases, rising health care costs, mistrust in conventional health approaches, the ageing population and convenience.

The Cannabis plant has been the catalyst for the exploration of plants for medicinal and economic purposes in the 21st century. The medicinally relevant compounds within the plant are known as phytocannabinoids. There are approximately 125 phytocannabinoids identified in the plant and the two most popular bioactive compounds are delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). Apart from the cannabinoids, there are terpenes, sterols and flavonoids which are also important in producing the health effects of Cannabis (Mechoulam, 1986). Prior to the plant’s prohibition in 1930s, Cannabis extracts were included in United States Pharmacopeia (USP). In 2018, the CARICOM Regional Commission on Marijuana recommended that the Cannabis should be reclassified from being a dangerous substance only and be recognised for its medicinal benefits. The Commission also supported the development of a Medicinal Cannabis industry as a potential economic engine for the Caribbean (Antoine et al, 2018).

Several Caribbean countries, inclusive of Barbados, have established legislation for the exploration of a Medicinal Cannabis industry subsequently but have taken more conservative approaches towards other uses of the plant.

A Medicinal Cannabis industry includes economic activities rendered by professionals who are involved directly or indirectly in the legal production, transport, sale, and consumption of Medicinal Cannabis.
A key area in the Barbadian Cannabis research agenda is the identification of geographical indications and unique medicinal cultivars of Cannabis. (Griffith and Cohall, 2018). Globally, the legal Cannabis industry is expected to grow towards US $57 billion by 2027; the Medicinal Cannabis industry is projected to occupy 33% of that amount (Forbes, 2018). Niche areas of consolidated strength along the plant’s value chain in the Caribbean include cultivation, research and development on unique cultivars, development of health-based products and identifying new clinical applications of Cannabis and related products. A key area in the Barbadian Cannabis research agenda is the identification of geographical indications and unique medicinal cultivars of Cannabis. Product diversification is also possible within the Medicinal Cannabis industry with a range of products spanning the preventative to medicinal paradigm of wellness. The production and exploration of Hemp varieties of Cannabis are federally legal in the USA under the Hemp Farming Act of 2018 which can potentially ease trade barriers and allow for the financing of a local hemp industry. These varieties can be explored for health-based properties but also for important industrial uses, for example, textiles. Hemp’s residual biomass could be biofermented to make fuel as an alternative source of energy (Abraham, 2016).
The Barbados Medicinal Cannabis Licensing Authority has an ambitious strategic goal of the local Medicinal Cannabis industry contributing directly and indirectly to 20% of the National Gross Domestic Product (BMCLA, 2021). This may be realised by i) the direct and indirect Cannabis employment opportunities across the value chain, ii) enhancing small and medium size enterprise business activity, iv) commercialising locally derived intellectual property (IP), and v) maximising economic benefits from inter-sectorial linkages with Health, Tourism, Agriculture and Education. The scene is set for development of the local Cannabis industry with strong export and commercialisation potential, but it must be guided primarily by patient and public safety. Sensitivities to historic social injustices against marginalised groups must be considered, and an ethos of inclusivity, transparency and fairness must prevail.

**Certification Snippets**

Certification saves. Learn about the role of a Certifying Authority, like Export Barbados (BIDC), for your export venture. Discover what it does and how utilizing its services can benefit your bottom-line.

**What is a Certifying Authority?**

A CERTIFYING AUTHORITY ensures that qualifying criteria are met. Meeting these criteria allows companies to access the benefits of a trade arrangement or agreement. Barbados, as part of the Caribbean Community, is signatory to a number of trade agreements and arrangements. Namely, the Caribbean Basin Initiative (CBI), Caribbean/Canada (CARIBCAN), CARICOM/Dominican Republic, CARICOM/Venezuela, CARICOM/Costa Rica, CARICOM/Cuba, CARICOM/Colombia and Economic Partnership Agreement (EPA). Like with any agreement, there are certain benefits available under the agreement. Most countries assign their respective Customs Departments this responsibility. A few countries however, assign different agencies this responsibility. In the context of trade, Barbados has two (2) Certifying Authorities – the Customs & Excise Department is the Certifying Authority for the EPA while Export Barbados (BIDC) is the Certifying Authority for all the other agreements and arrangements.

**Dr. Damian Cohall**

Deputy Dean - Preclinical Sciences and a Senior Lecturer in Pharmacology in the Faculty of Medical Sciences, The University of the West Indies, Cave Hill. He has published a number of research manuscripts in the area of ethnomedicine inclusive of a book entitled "Medicinal Plants of Barbados for the Treatment of Communicable and Non-communicable Diseases".

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**L I F E S C I E N C E**
DESIGNING Life-Centred Systems

A CARIBBEAN PERSPECTIVE

By GISELLE CARR

AROUND THE WORLD, island nations have designed not only a relentless sense of resilience, but an exquisite nature of "antifragility"; that is to say, in some ways island nations have developed strength from disorder. Countries such as islands in the Caribbean have navigated globalisation for almost two centuries, producing multicultural societies and cross-cultural learnings, which are only mirrored by the deep ecological diversity and adaptability that they possess, as the biodiversity superpowers of the planet. During a time of global unpredictability and climate change, these nations potentially have learnings that can inform the complex navigation of changing economic, social and ecological paradigms: these nations are designing life-centred systems.
Resilience is fundamentally what defines the Caribbean - we bounce back, however much we suffer. Beyond this is antifragility - instead of resisting and staying the same, we have continued to get better.

**Barbados’ resplendent beauty**, tenacity and ability to evolve is breaking boundaries. Its antifragility is mirrored by the clear vision and aligned leadership that is an inspiration to the rest of the Caribbean. It is a living invitation to step into definitions of greatness that Caribbean people are poised to author. When we look to the future, we connect more deeply to the present and what it has to offer, in seeding the vision of a prosperous, resilient Caribbean and model for living in this time. Barbados is shifting the world’s sense of possibility by embracing scale, scope and change. Its unique promise to the world lies in its ability to come back better in the way that only Barbados can - joyfully and steadfastly leading.

Resilience is fundamentally what defines the Caribbean - we bounce back, however much we suffer. We’ve done this in our culture, in our ecosystems and our way of life. Beyond this is antifragility - instead of resisting and staying the same, we have continued to get better.

What if we learned to function like life itself and create legacies that cause future generations to thrive? One of the most antifragile ways of cultivating this is through life-centred design.

In theory it’s one thing, and when applied to individual innovations, deeply inspiring, but what about systems, and the entities that drive them, such as organisations and communities?
Life-centred design addresses challenges through the lens of the broader ecosystems they exist within - helping organisations and communities realise more impactful, systemic change.

Life-centred design takes into account the foundation that is 2.8 billion years old - all of life on Earth - and brings it into the present as we make decisions. Inspired by the best attributes of human-centred and systems-based design methods, life-centred design addresses challenges through the lens of the broader ecosystems they exist within - helping organisations and communities realise more impactful, systemic change.

It is an approach that aims to create products and services environmentally, socially and economically sustainable by focusing on the needs, limitations and preferences of human audiences and non-human strategic stakeholders. It involves knowledge and design techniques developed at the intersection of human-centred design, usability, ecology, and sustainability science.

The bottom line? Considering all stakeholders isn’t just good business, it’s good legacy. It’s being a good (corporate) ancestor.

Embedding life-centred systems into organisations generally consists of three phases or standalone practices - training, implementation, amplification. In the absence of a baseline of knowledge, it starts with a process of stakeholder sensitisation or training first - the process of inspiration that opens doors of opportunity and possibility. Developing an understanding and awareness within the organisation is critical, and approaching this with openness is the hallmark of some of the most successful, game changing market leaders. This can involve training over time combined with immersive experiences, either physically within the organisation or in nature - the
main takeaway from the latter being presence to the ecosystems we are trying to create a symbiotic relationship with.

Leaning into life-centred design means shifting awareness from thinking of nature as something to be dominated, controlled or used as a resource, to recognising it as a mentor, a teacher, and system deeply connected to us. It means connecting with the system and understanding how one change affects many.

This leads then into the practice of life-centred or bio-inspired design, which follows a process of deploying these principles either by starting with the scoping of the problem, leading into a solution inspired by a biological function, or starting with the biological function abstracted and then applied to a particular challenge. Normally this happens somewhat organically if the company doesn’t have a clear challenge it is trying to solve - learnings emerge from the process of training that can’t be predicted.

Outcomes are better when there aren’t strict parameters, as with most design management processes.

Another key process is launching and amplifying the messaging around bio-inspired and life-centred design - in many cases an afterthought which, if considered from the start, has the potential to create conditions that allow bio-inspired design to “leapfrog”, to overcome challenges of market awareness and adoption.

For life-centred and bio-inspired design to become mainstream, this is a huge step.

Brand strategy and communication is one of the key impediments to life-centred design - the reality that many brands who have already embedded this into their organisations are coming to is that traditional methods of communicating their ethos may not always be successful because what they are trying to accomplish has never been done before. It calls for strategies that bring their ground-breaking products and services to the world for the first time, at one of the most unprecedented and potent times in human history. It is a crisis of opportunity.
Over time, products, services and prototypes launched become educational and awareness pieces, feeding into a repetition of the process and building a larger awareness over time. Creating this synthesis reduces the education and awareness gap, while accelerating buy-in. It takes the fragility of market disruption out of the equation, and makes itself and others stronger as it goes along - including our beautiful planet.

This approach addresses one of the key issues that bio-inspired and life-centred practices face, which is adoptability or market-readiness. It designs communication and amplification into the overall process; over time, products, services and prototypes launched become educational and awareness pieces, feeding into a repetition of the process and building a larger awareness. Creating this synthesis reduces the awareness gap, while accelerating buy-in. It lowers the risk involved in market disruption in the equation, and makes itself and others stronger and more resilient as it goes along.

In the Caribbean, we carry the memory of vast continents, and are creating our own space in a diverse geographical and historical region, as part of a rapidly changing world. We do not have to look far to find extraordinary examples of resilience and life-centred design, as we are surrounded by abundance and potentiality.

GISELLE CARR
Giselle the Founder of Stardust Life-Centred Design in Trinidad and Tobago, a practice focused on sustainable training, design strategy and communications. She enjoys working with bright people on massive, complex problems, in service of our collective, thriving future.
At only 166 square-miles, Barbados is smaller than many cities and, as a small island state, is highly vulnerable to external shocks (CCB, 2021). In 2021 alone, Barbados suffered the effects of volcanic ash-fall resulting from the eruption of the La Soufrière volcano and was struck by a Category 1 hurricane, Elsa. The island’s high cost of living, rising unemployment numbers and myriad of challenges resulting from Covid-19 call for urgent new approaches and solutions to growing systemic challenges affecting Barbadians.

President of the Inter-American Development Bank, Mauricio J. Claver-Carone shared sobering data for the Latin America and Caribbean region, indicating that, “In addition to the human tragedy caused by the coronavirus pandemic, the region suffered a historic economic contraction of more than 8% of GDP. An estimated 34 million people lost their jobs, and at least 40 million fell into poverty.” (IDB, 2021)

Critical intervention is needed that can effect systems level change in addressing challenges like poverty, food security, disabilities and inclusion, climate change, renewable energy and more. The urgency is self-evident at a time when public funding for many social needs is severely strained, unavailable or even being reduced.

As a Small Island Developing State (SIDS), Barbados relies heavily on its greatest resource: its people. Different from the Public and Private Sectors, Barbados’ Third Sector (social / civil / non-profit sector) is large, mostly unpaid and financially vulnerable.

Nevertheless, Barbados has

- An active civil society of over 1000 registered organisations;
- A culture of informal, activity-based giving by local companies with growing private sector awareness of corporate social responsibility;
- Many philanthropists with strong Barbados connections, who have made material and impactful donations in the last decade;
- Emerging civil society policy and governance standards and emerging investor awareness of Environmental, Social and Governance (ESG) impact.

DESIGNING A Sustainable Philanthropic Ecosystem

By PETER N. BOOS | Co-Writer DEBBIE ESTWICK
The Barbados Third Sector addresses needs and develops solutions in areas like Climate Sustainability; Food security; Environment and Animals; Public and Societal Benefit; Poverty Alleviation and Economic Empowerment; Health; Human Services; Youth and Family Empowerment; Women and Girls; Arts; Heritage; Culture and Humanities; Education and Research.

Creating an enabling environment (ecosystem) to support the development of the Barbados Third Sector is essential to maximising the potentially huge influence this Sector can have on our communities and society at large. In doing so, we can generate new innovative investments, attract foreign exchange, develop more skills, and create good jobs, whilst improving the quality of life for many, especially those at the lower end of the wealth table. Perhaps the biggest benefit of all would be to further enhance an existing caring society by establishing a national infrastructure that enables all of us, as individuals, businesses and a nation, to deliver an all-inclusive level of Social Justice.

A model that could contribute to achieving this has been designed, prototyped and is being used, with continuous adaptations, at the Substance Abuse Foundation.

Case Study

The Substance Abuse Foundation Inc. (SAF) is the leading, internationally-accredited public mental health institution located in Barbados. SAF (Registered Charity #206) has dedicated its work to the fight against the harmful impact of drugs and alcohol on the lives of individuals and their families. Verdun House and Marina House are residential treatment centres of the Substance Abuse Foundation that help people heal and lead productive lives. SAF was established in 1996 and is recognised as a centre of excellence in the region.

The Foundation is accredited by EATA (European Association for the Treatment of Addictions) as of 21 August, 2009.

The changing dynamics in the global drug situation demand a strategic approach to confronting the issue of drug abuse in Barbados. An increase in the number of drug users in Barbados is of significant concern as the country lacks sufficient financial resources to execute all the necessary activities to overcome the social and economic challenges caused by drug abuse.
The SAF relies on an integrated approach to sustainability that utilizes the ‘Triple Bottom Line’ and shifts the organization to a more financially sustainable and resilient path.

1 The triple bottom line is a framework which measures an organization’s performance in 3 dimensions: people, profit and planet.

1.1 STRATEGIC INITIATIVES & ACTIONS

The Foundation’s model simultaneously aligns with Barbados’ national anti-drug policy, and the objectives and goals underpinning Barbados’ national energy policy for economic and environmental sustainability. It also contributes to the objectives of 6 UN Sustainable Development Goals (SDG) through its efforts (see Sustainable Development Goals).

SAF contributes to the achievement of 6 UN Sustainable Development Goals.

SAF contributes to safe and nutritious food through its animal and vegetable farms.

SAF strengthens the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

SAF’s RE project and financial model contribute to increasing the share of renewable energy in the global energy mix.

SAF connects clients/relatives with training and obtaining Caribbean Vocational Qualifications (CVQs) in solar installation.

SAF’s facilities implement plans and solutions towards resource efficiency and mitigation and adaptation to climate change.

SAF’s transitioning dependence on clean energy; investments in sustainable economic solutions and training for green jobs help to facilitate quantitative and qualitative growth.
The theme of sustainability underscores the framework that the foundation has designed and evolved over the years (see SAF’s Diversified Financial Support Model).

**Every Little Bit Helps**

The Foundation’s micro-business programme contributes to “Other commercial revenue” that supports the charity. The micro-business programme is a therapeutic tool that allows clients to enter into a work arrangement in a “safe” environment, providing training, teaching sound work ethics and promoting team-work.

**SAF’s Diversified Financial Support Model**

Evolved in 2017 with the introduction of its Renewable Energy (RE) Project. The model involves the third, private and public sectors.

**Vegetable Farm**

The foundation grows an array of vegetables and ground provisions. No harsh chemicals or fertilizers are used in the production of their agricultural produce. This produce is sold or used to support the needs of the residential facilities.

**Verdun Patisserie**

A modern bakery produces a range of potpies, breads, cakes and pastries. A range of healthy alternatives that include gluten free, low sodium and no sugar goods are also produced. These items are sold and also meet the needs of the residential facilities.

**Educational Services**

Training, seminars and mental health services help promote and sustain wellness, hope and healing.

Continued on page 34
Solar Sustainability

One of the more unusual features of the SAF’s model is its renewable energy revenue. Green finance is key to building resilient organisations and societies and plays an important and progressive role in the financial sustainability model of the SAF. In 2017 the foundation introduced its Renewable Energy (RE) Project. The RE Project pursued organizational sustainability for SAF and, by direct extension, a renewed and sustainable lifestyle for all individuals suffering from the disease of addiction.

The SAF hosts the first generator of solar electricity by a charitable organization in Barbados and the Caribbean region. Phase one of its RE project, comprises 502 solar panels and associated equipment installed on the roofs of six of its buildings. The system commenced operation in January 2018 and currently supplies 165 Kilowatts (kW) to the Barbados Light & Power’s electricity grid. The SAF has now proposed a solar photovoltaic (PV) farm to expand its RE project. This will be a ground mounted system of 1,000 Kilowatts (kW) of energy which they hope to install in 2022 on lands owned by the SAF at the Verdun House facility located in rural St. John, Barbados. This new system was designed to provide a long-term solution to the charity’s operational needs as a major sustainable revenue earner through the sale of clean, renewable solar energy to the local energy grid. The next phase will cost about BDS$4 million (US $2 million) and, when combined with its existing PV plant, will generate approximately 25% of their current annual operating budget. Combined with Philanthropy (50%), Government (20%) and other micro business revenues (5-10%) they will be in a financially sustainable position for at least the next 10-20 years.

Growing Skills

The RE Project also implements training and certification of SAF’s clients in solar panel installation and maintenance. SAF partnered with the Technical and Vocational Education and Training (TVET) Council in Barbados to finance and provide training in
solar panel installation. Participants are awarded with a Caribbean Vocational Qualification (CVQ) (occupational standards) upon completion.

1.2 IMPACT & BENEFITS

Renewable energy investments are affording enterprises in the Barbados Third Sector, like SAF, the opportunity to transform their financial sustainability models with less dependence on philanthropy and greater reliance on long term commercial revenue sources.

Prioritizing institutional strengthening through renewable energy acts as the framework for SAF to generate increased revenue, and maintain and expand treatment programs for clients.

The SAF model demonstrates a multifaceted approach to achieving the SDGs and sustainable development through the universal ‘Triple Bottom Line’ that can lead to the environmental, economic and social well-being of all.

SAF’s approach contributes to

**Social Protection**

*Securing the long-term sustainability of SAF’s drug rehabilitation services for future generations*

SAF has helped, directly and indirectly, up to 20,000 individuals (including impacted families, colleagues and social networks) across Barbados and the Caribbean recover a healthy, productive life.

**Green Economy Development**

*Assisting Barbados in the development of the green economy through the estimated generation of 1.6 million kilowatt hours (kWh) annually and the eventual achievement of zero emissions institutional capacity*

The approach also supports climate resilience, climate change adaptation and clean energy supplies, all towards Barbados’ goal of achieving carbon neutrality by 2030.

**Sustainability**

*Generating long-term sustainable income annually*

The total revenue currently earned per year from phase one is approximately BDS $85,000 (US $42,500). The proposed 1,000 kW system is 500% larger than the current phase one system and could generate an anticipated annual revenue of BDS $600,000 (USD $300,000). Beyond commercial revenue generation towards financial sustainability for the charity, the approach fosters environmental sustainability.

**Education Job Creation**

*Increase in a skilled workforce in the renewable energy sector through training*

SAF provides solar industry career training and professional development opportunities for over 24 clients (2019) in the installation and fitting of solar panels, enabling them to be gainfully employed men and women (value approximately BBD $30,000 / USD $15,000).

**Foreign Direct Investment (FDI) and Corporate Social Responsibility (CSR)**

*Generating long-term sustainable income annually*

The total revenue currently earned per year from phase one is approximately BDS $85,000 (US $42,500). The proposed 1,000 kW system is 500% larger than the current phase one system and could generate an anticipated annual revenue of BDS $600,000 (USD $300,000). Beyond commercial revenue generation towards financial sustainability for the charity, the approach fosters environmental sustainability.
The successful design and implementation of the SAF’s philanthropic model can serve as a prototype for the development of a sustainable philanthropic ecosystem framework in Barbados. Barbados’ Third Sector is fortunate to have had the support of many generous philanthropists with strong Barbados connections. However, as shown in the SAF model, philanthropy alone is not enough to help every valuable charity achieve the sustainability it needs to thrive and make a long-term difference. Donor-led capacity building efforts of development agencies and foundations are much needed and have helped, but are often limited by their project-based mandate. What is required is more consistent, developmental systems-change resource support (Ashoka, McKinsey & Company, et al, 2020). The realization of a philanthropic ecosystem framework for Barbados requires public, private and third sector partnership and can harness capabilities and resources that ensure long-term sustainability and viability while contributing to realizing the national vision of a fossil free Barbados by 2030. With strategic purpose, inclusion at a policy level and intentional effort, the design and implementation of an effective and sustainable Barbados philanthropic eco-system is within reach.

The SAF’s Renewable Energy Project model provides a blueprint for powering a sustainable philanthropic ecosystem framework. This can be done through the establishment of a Barbados Third Sector Renewable Energy Investment and Development Fund or “Social Solar Fund”, along with conditions, incentives and policy measures that support the fund and sector. Similar to the SAF’s renewable energy revenue approach, such a fund, on a larger scale, can generate long-term stable and predictable revenue streams that could be used solely to fund Barbados Third Sector Organisations and Enterprises and by extension, address urgent social needs and contribute to the achievement of a range of National Energy Policy visionary goals – namely “Environment”, “Entrepreneurship” and “Economic Enfranchisement”.
The current social and economic landscape suggests that this is a unique and timely opportunity for the establishment of such a fund and the strategic development of a philanthropic ecosystem framework for Barbados (see Proposed Ecosystem Vision).

Recent anecdotal evidence suggests that philanthropists and International Development Agencies would find such a fund attractive and facilitative of their desire to support Barbados’ social development. What they need most is a credible ecosystem and professionally managed financial vehicle, such as the proposed “Social Solar Fund”, with the right level of Government policy backing.

Barbados should set its sights on becoming the leading Centre of Excellence for Community Philanthropy and Social Entrepreneurship in the Caribbean. The Third Sector is a new opportunity for national development. With a coordinated approach that supports existing policy goals, we can catalyse the change needed to create a more sustainable, adaptive, equitable and caring society. Social infrastructure investments addressing pressing social needs, new skills, sustainable jobs and foreign exchange earnings are just a few of the benefits. The most important benefit will be the

The proposed vision for a strong and compelling Philanthropic Ecosystem includes:

- **Fostering a CSR Culture** (Corporate Social Responsibility)
- **Global Crowdfunding Platform**
- **Third Sector Network**
- **Social Solar Fund**
- **Government Policies & Regulations**
- **Strategic Vision & Plan**
- **Legacy Giving Programme**
- **Public Education & Communications**
- **Chair of Philanthropy**
- **Developmental Facilities**
- **About the Value and Role of the Third Sector in Social Development**
- **The Establishment of The Aspire Foundation**
- **Primary education & research on CSR philanthropy**
- **Chair of Philanthropy**
- **At the Cave Hill School of Business & Management at the University of the West Indies**

A comprehensive suite including enabling laws, policies and regulations, governance and leadership, professional development, research and educational programs, and a broad, inclusive network of stakeholders will be developed to support the success of this initiative.
improvement in the lives of many and the creation of a society that cares for all of its people. Barbados Cares can become our culture.

As we consider the design and development of a wider Barbadian philanthropic ecosystem from the ground up, we unearth opportunities to better our world with creative, empathetic, sustainable and cost effective frameworks and approaches that are good for our triple bottom line – our people, planet and profit.

PETER N. BOOS
Chairman Emeritus, EY Caribbean; Founder and former chairman of The Aspire Foundation (Barbados) Inc.; Co-Founder and former Chairman of the Barbados Entrepreneurship Foundation; Honorary President SpecialKidz International; Founder/Chairman of the Peter & Jan Boos Family Foundation.

DEBBIE ESTWICK
Designer/strategist and internationally published author with multi-cultural professional experience in design and business that spans continents. Her service within the private, public and social sectors provide a rare plurality, needed for solving complex problems where worlds collide.

What is certification and how does it work?

THE EXPORT BARBADOS (BIDC) CERTIFICATION UNIT analyzes and verifies manufacturing processes to ensure conformity with the prescribed criteria of each trade scheme. Officers actually have to visit a company’s operations to view its processes. This is currently a free service.

Once the criteria has been met, the exporter will receive written notification of their approval and associated tariff numbers. Each time the company ships to any of our trade agreement partner countries, they should complete and submit a document called a Certificate of origin along with a Commercial Invoice to the Export Barbados (BIDC) Certification Unit. Once the documents have been completed correctly, the Certifying Officer will sign and apply an official stamp to the documents and return them to the company. This service currently incurs a fee of BB$17.65 per shipment. These documents must accompany the related shipment so that companies can enjoy preferential treatment (for example, duty free access) upon entering the receiving country.
Nurturing a Budding Cleantech Cluster

By JARI AALTONEN

Bloom is a sustainable energy and climate technology (cleantech) cluster hosted by Export Barbados (BIDC). It is being established in partnership with the Ministry of International Business and Industry (MIBI) and with technical assistance by the United Nations Industrial Development Organization (UNIDO).

2020 was a year of unprecedented challenges. Nevertheless, Bloom Cleantech Cluster was determined to not only survive, but to thrive. In September 2020, the Bloom Cleantech Cluster launched an extensive online capacity building training program, which was focused on skills development for project staff and start-up owners. The training covered topics such as fostering green business growth, validating business ideas, business modelling, how to finance your start-up, with and without venture capital (VC), and circular economy and circular business models. Online training courses were delivered by the University of New South Wales; University of Maryland; London Business School and The International Training Centre of the International Labour Organization (ILOITC). Most of the courses were delivered through the Coursera platform. The inclusive and innovative approach of the Bloom Cluster has increased the commitment of local start-ups to scale up, validate and commercialize their business ideas. Working with young start-ups and new business development projects has great economic and job creation potential. At the moment, the Bloom Cleantech Incubator is established with 10 incubatees, whose business models and business plans are under development, in cooperation with the Cleantech Cluster members.

Judges at Climate Launchpad Barbados (left to right): Ayanna Young-Marshall, attorney-at-law, lecturer in International Business at the University of the West Indies, Cave Hill Campus and Coordinator of The UWI’s Student Entrepreneurial Empowerment Development (SEED) programme; Jari Aaltonen and Carlton Cummins, Barbadian clean-tech entrepreneur and co-founder of UK-based Aceleron, an award-winning company that designs and builds advanced lithium battery packs, with a presence in the UK, the Caribbean and East Africa.
Three of our start-ups have shown remarkable progress during the incubation programme and gained international recognition.

Bloom Cleantech incubatee Kerri-Ann Bovell has raised remarkable international visibility in global start-up competitions, calls and global pitching events and has already won many international awards including the Bloom Cleantech Incubation award 2021 and the CIBC First Caribbean SEED Business plan award (winner) in 2020. She was successfully accepted into the UNDP’s Blue Lab and went on to win a UNDP Blue Lab Accelerator Award in 2020. Prior to that, in 2019, Bovell participated in the ClimateLaunchpad Barbados boot-camp and was the national runner-up at the ClimateLaunchpad (CLP) Barbados finals. She was among 2 teams selected to represent Barbados at the CLP Global Grand Finals in the Netherlands in 2019.

Bloom Cleantech incubatee Kerri-Ann Bovell has supported incubatees by providing them with certified training and individual coaching services where business modelling and validation have been the focus. 30% of the Bloom Cleantech incubatees including CEMBI, EcoMycö and Red Diamond have demonstrated excellent resilience and determination in their pitching and commercialization efforts in highly competitive global forums in the Caribbean region and Europe.

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Bloom Cleantech incubatee, Caribbean Environmental Management Bureau (CEMBI) CEO, Simera Crawford and her BiteGreen Market web platform app won a $50,000 USD grant from the GEF small grants program in 2020. The BiteGreen Market web platform and app is aimed at enhancing the Circular Economy for overall operational efficiency of businesses and integrating environmental preservation, and other sustainable actions, into mainstream society through everyday activities.
Other Bloom Cleantech incubatees, like *Green Collective 246* and *OnSolar Solutions*, have demonstrated excellence and determination in completing their first product development pilot projects and have demonstrated their product and market know-how to their customers. According to international incubation standards, Bloom incubatees have managed very well in global competitions in raising visibility and international grant financing.

**Joshua Forte**
Red Diamond Compost

Joshua Forte, Founder of Red Diamond Compost, has achieved remarkable international recognition with his start-up that is developing green agrochemicals for organic farmers and growers. His latest awards include a British Commonwealth Innovation award winner in 2021 and a 2020 TIC Americas Caribbean Innovation Competition (CIC) win. Out of 2085 registered teams, Red Diamond Compost emerged the number one champion with their Climate Adaptation Ecosystem Initiative. In 2019, Red Diamond Compost also participated in the CLP Barbados boot-camp and final pitching competition. Red Diamond Compost was awarded a 1st place victory that qualified them to represent Barbados at the CLP Global Grand Finals in the Netherlands.

In less than 2 years, 3 of our start-ups have won 5 international awards from the British Commonwealth, GEF SGP, UNDP Blue lab accelerator, First Caribbean bank and Caribbean Innovation Competition executed by the Young Americas Business Trust. This is an important success indicator for the Bloom Cleantech Incubation Program.

Barbadian entrepreneurs, especially start-ups, have been limited in their ability to develop, plan, install and maintain new, green technologies. With a focus on sustainable energy technology innovation, industrial development and entrepreneurship, Bloom is building partnerships between the Barbados government, local businesses, citizens and the academic community. Through these partnerships, Bloom is positioned to help Barbadian cleantech projects and entrepreneurs flourish.

**Jari Aaltonen**

A globally experienced Finnish environmental engineer, sustainable industrial development expert and climate technology entrepreneur, now based in Barbados. He is currently the Manager of the United Nations Industrial Development Organisation (UNIDO) funded Bloom Cleantech Cluster (Barbados).
Amanda & Dominic Wyndham-Gittens, founders of Wyndham's Bajan Coffee Roasters.
Wyndhams Bajan Coffee Roasters is a Barbadian owned and managed, award-winning, specialty-grade focused coffee roaster, based in Barbados. Following their recent win of 8 international Great Taste awards, we met with Dominic and Amanda Wyndham-Gittens to learn more about this local brand perking up palates around the world with their delightful coffees.

**BIOISLAND** Congratulations on your recent awards! These are a great form of validation for the quality product that you make. What significance do these hold for you?

**WYNDHAMS** Thank you. We’re excited about these wins and see the awards as objective validation of the quality of our product and of Barbados being able to make great products. We can compete with any independent roasters around the world. These awards give us a real “step-up” when going to distributors, specialty food suppliers, and specialty coffee shops. They don’t have to take our word alone on the quality of our coffees, our awards are the evidence.

**BIOISLAND** Aside from the recent and previous Great Taste awards, what are you most proud of and what has contributed to your success?
“This coffee almost dances on the palate and gives a remarkable long finish”

Great Taste Awards

### Wyndhams
We’ve come such a long way, having started as a two-person team of wife and husband in our living room 20 years ago to become a company where we have earned the respect for our products by following our core ethos of being a quality oriented Barbadian company. As for what has contributed to our success, we would say:

1. **Strong Female Leadership**
   It’s a core belief of ours that the more power we give to women in society the better. While it’s evolved naturally that Wyndhams is female led, it’s under Amanda’s leadership that we are the company we are proud to be.

2. **Good Staff**
   Everyone on our team plays a part in the success of Wyndhams. Whether they work in deliveries, packaging or administrative support, our staff all contribute. When it comes to our recent, Great Taste Awards, we really want to celebrate and highlight our Head Roaster, Jalisa Als. Jalisa joined us in packaging but showed so much interest in coffee. She embraced learning wholeheartedly, developed her palate, worked hard and shares the belief in the vision we have for the company. It can sometimes be difficult for Caribbean women to advance, even if they have the potential and the ability. Will women be confident enough to ask for the opportunity and will people be progressive enough to offer the opportunity? Jalisa showed her passion and commitment at the beginning and we gave her the opportunity. She’s a big part of why Wyndhams Bajan Coffee Roasters can boast about so many Great Taste awards.

### Continuous learning and growth
If we were satisfied with where we were 20 years ago, we wouldn’t be here today. We didn’t just have wishes, we worked so hard and put in the effort to better our last best. We’ve learned, we’ve grown and we keep doing that every day.

### Teamwork
We both rely on and respect each other’s strengths. We work very well together.

**Dominic** I always say that Mandy’s leadership allows me to do my best work. I’ve learned to trust her guidance.

**Amanda** I bring my influence, he brings his. When we have decisions to make, we’re not always on the same page at the beginning. We discuss, sometimes we argue but we come out of it with a better decision.
5. Luck  
6. Preparation

Luck and preparation come together when you are in the right place at the right time and your abilities (natural or learned) catch on fire. We were fortunate in the network and support we cultivated (and we work to cultivate and maintain good relationships). We are grateful for every opportunity afforded us.

7. Openness & Supportiveness

We want to share the benefits and we try to take people along with us who are showing an interest. We’re passionate and are inspiring passion in a niche area. Being specialists is one way to differentiate and carve out a competitive spot. When you have knowledge and the means to get knowledge, we think you have the...
responsibility to share. We don't want to hold back everything for ourselves and be greedy about what we know. We don't have that negativity. Positivity attracts more and we benefit from sharing what we know. We all broaden our perspectives and this benefits the country. How else will people learn about what's out there in the world? Barbados is so small. The more we can relate to and connect with people who are from other places, the better.

8. Our story
A coffee roaster from Barbados is a good story. We're proud of who we are and have learned to embrace it. We no longer feel the need to try to be something foreign. At the same time, we don't want to tell a cliché story. People want to connect with unique, authentic stories. It would've been silly for us not to want to bring that into everything we do.

BIOISLAND We can see the pride in your Barbadian identity reflected in so many of your products – from the naming of your “Soup Bowl”, “Duppies” and “Dawn Patrol” coffees to the creation of your quintessentially Barbadian “Rum Barrel Coffee”. It’s a beautiful story. However, we know it couldn’t all have been easy. What might you say are the top challenges you’ve faced or are facing now?
The constant need to remove doubt from our thought process can be a challenge. We are good. We knew that long before the awards. We have to believe in ourselves and the quality of our product for all our other goals.

While we do everything within our power and continually push to grow, we face so many basic challenges. These issues are connected to the fact that we are reliant on a small economy and the status quo. We’re a country that’s smaller than the average city. It feels like a hand-brake at times, where growth in all ways is limited and progress of any kind moves too slowly.

It’s hard for a small company to get through and there are systemic problems that are very difficult to overcome. Whether its access to basic ecommerce technologies to provide a seamless modern customer experience, to tariffs for exports to CARICOM. Sometimes it can feel like everything is fighting against you and not for you. Lastly, there’s never enough time or money.
Where are you now on your journey to success and what does success look like for you?

WYNDHAMS 20 years of hard work combined with the experience of losses and successes has brought us to the point where we had to decide to either play it safe or grow. We decided to grow and Export Barbados (BIDC)’s support made it easier for us to leap forward a step or two in pursuing our goals of exporting our proudly Bajan coffee products into the world.

For us, success looks like:

1. We have a great product and we want it on shelves and in cups around the world. A relentless desire and belief in our abilities, our products and our people keeps us going.

2. We want to see progression and positive growth for our country and our people. We will continue to push, introducing coffee experiences and other activities that align with this vision.

3. A healthy balance sheet.

4. We would want to look back and know that it’s all been done on our terms.

BIOISLAND Anything else?

WYNDHAMS It really takes a village.

Thanks to Export Barbados (BIDC) and the Barbados Government for playing their part.

GREAT TASTE is the largest and most trusted accreditation scheme for fine food and drink. Great Taste offers a unique benchmarking and product evaluation service leading to an independent accreditation that encourages confidence and commercial success for small business, generating greater awareness for products locally (UK), regionally, nationally and internationally. Since 1994, more than 130,000 products have been put through this robust judging process. Each one is fastidiously blind-tasted by selected chefs, buyers, fine food retailers, restaurateurs, food critics and writers over 70 judging days.

Who is certification for and how does it benefit me?

ANY MANUFACTURER who makes products locally for export to any of our trade agreement partner countries can apply for certification. However, successful qualification of the products depends on which rule from the particular trade agreement governs the company’s particular product. Certifying Officers serve to assist companies with this.

The benefits of having a certificate of origin accompany a shipment could be the difference between a lower or greater price or profit between a company and its competition. Duty free access or reduced duty access to a market means that a company may benefit from a competitive price advantage. Duty free access or reduced duty access, as a benefit of a trade agreement, simply means that when your goods land in the buying country, the buyer will pay zero duty or less duty on the goods (excluding any national taxes). We call this preferential access.
WE OFTEN THINK of crude oil and the oil industry when we hear of “Black Gold”. However, it may be time to shift our perspectives on what we value.

Innovator, world changer, scientist and next-generation “Guardian of the Earth”, Joshua Forte is on a mission to ensure that “Every living person on this planet can easily access the most nutrient-dense foods available to improve their health and lives overall.” That’s no easy feat for a pioneering 27-year-old trying in one of the world’s oldest industries - Agriculture.
Global food production is a 5 trillion dollar industry, and agriculture involved in this process covers 50% of all habitable land worldwide (51 Mil km²). Of that, only 23% (11 Mil km²) is used for crop production. Still, these figures, reported by the UN Food and Agricultural Organisation (FAO), truly become astounding when it is noted that the world’s urban footprint (settlements and infrastructure) only covers 1% of habitable land.

With such an extraordinary landmass devoted to agriculture, it should be no surprise that farmers have made a substantial investment in developing tools that assist with the heavy weight of fulfilling the world’s food demands. However, the resulting impacts have yielded mixed levels of success.

For example, 21st Century farmers now require only 30% of the land needed 50 years ago to produce the same yield. This feat is partly possible due to the prolific use of synthetic fertilizers and pesticides (which we’ll call “Chemical X”), with a hefty global price tag of $300 billion annually.

Of course, the cumulative effect of the widespread use of Chemical X has brought its challenges: among these are reduced soil quality, impacted water supplies, a massive reduction in beneficial soil micro-organisms and chemical traces sometimes left in the food we consume.

At home in Barbados, similar challenges exist as our agrochemical market is heavily dependent on synthetic imports. However, the tide is changing as the detrimental effects of these products on the environment and on our health continue to be documented. This is fueling the desire for healthier alternatives produced by organic farming and, more recently, by regenerative farming. It was a similar driver that initially propelled then-teenage Joshua Forte into the market some years ago.

At 19 years old, Joshua found himself in a fight with an unknown illness that severely sapped his energy and fogged his brain. His search for possible solutions led him to a lifestyle change that focused on expensive nutrient-dense foods from nutrient rich soils. The new diet worked, but the inability to easily access these foods on the local market, along with his passion for all things natural, set Joshua on a journey of discovery; this was the catalyst that birthed the innovative and award-winning company, Red Diamond Compost Inc.

Today, Joshua operates at the helm of Red Diamond Compost as a Sustainable Environmental Management practitioner, certified in Agricultural Policy, Food Security and Climate Change. There, he sees his role as a simple one: replace the existing synthetic imports with natural liquid fertilizers, bio-stimulants, and soil conditioners, producing them to scale using organic waste materials and composting - a first for the region.

75% of all waste dumped in Caribbean landfills are organic materials ... Some of this can be diverted from landfills and used in the production of premium, high-quality soil treatment and crop protection products.
Red Diamond Compost is a biotech social enterprise working to infuse new life and vitality into the soils and foods across the globe. They do this through the research, development, and commercialization of high quality clean and green agrochemical solutions for Environmental Management that are safe and sustainable for use in commercial and residential applications. Composting is an integral part of the process.

According to Red Diamond, “75% of all waste dumped in Caribbean landfills are organic materials (derived from plant or animal sources). Some of this can be diverted from landfills and used in the production of premium, high-quality soil treatment and crop protection products.” Their resulting portfolio includes natural, nutrient-rich products like Super Seaweed Premium Plant Bio-stimulant and Liquid Sunshine Organic Fertilizer. They are made primarily from organic waste materials and invasive plant species, namely - Sargassum Seaweed, Fish Offal and Thithonia Sunflower (an invasive plant species).

These natural solutions support fragile organisms responsible for building soil structure, storing organic soil carbon, cycling nutrients to plants, and protecting pollinating insects. The process involves a close look at the Soil Food Web to understand the local relationships between large and small organisms living on and below the soil surface.

We’re building a reputation of integrity in product and service quality by crafting toxin-free solutions that enhance the quality of our food supply, are safe for the environment and protect our future.
This helps Red Diamond Compost to determine how the microorganisms assist in providing plant nutrients, protecting plants and building soil structure by aerating soil, increasing its nutrient retention, water-holding capacity and more.

This insight translates into solutions designed to support soil life and its diversity; rebuild soil structure; increase nutrient and water retention; improve overall soil health and significantly increase soil organic carbon. The net result is improvement in our environment overall and reduction of the required annual soil maintenance.

“We’re building a reputation of integrity in product and service quality by crafting toxin-free solutions that enhance the quality of our food supply, are safe for the environment and protect our future.”

At its base, many of the core elements of Red Diamond Compost fall under the umbrella of ‘Regenerative Agriculture’. Regenerative Agriculture is focused on agriculture holistically, not just on individual consumer health but on the health of the planet, emphasising the conservation of water, building the soil, sequestering carbon, and improving air quality, while minimising synthetic chemical use.

Regenerative Agriculture is 2021’s hottest food trend, expected to dwarf the “Organic” market, currently worth $165 billion (ReportLinker), in years to come. As a result, the international community is already responding to consumer desires: Nestle, the world’s largest food company, recently announced (September 2021) its intention to invest approximately $1.3 billion into regenerative agricultural practices on its farms over the next five years. There has also been a trickle of big names joining the movement over the past few years: Walmart, PepsiCo, Cargill and General Mills have committed 50 million, 7 million, 10 million and 1 million acres of their farmland, respectively, into pursuing regenerative agriculture along with, Unilever, Target and countless others who are also jumping onto the regenerative farming bandwagon with an eye towards implementation by 2030. Additionally, according to PwC’s June 2021 Global Consumer Insights Pulse Survey, 50% of all global consumers surveyed indicated that they’ve become even more eco-friendly in their choice of products.
In just a few years, Red Diamond Compost has advanced in strides, advocating for ecosystem restoration and regenerative agriculture while working to increase the number of growers willing to adopt a new approach to working with nature. They also ensure that preventative measures are put in place to deal with the cause of diseases, pests, and poor soil fertility.

To this end, their rewards have been note-worthy, taking home a 2021 Commonwealth Secretary-General’s Innovation Award for Sustainable Development. Red Diamond Compost was “Awarded for their soil treatment solutions that improve organic solid waste management, food and nutrition security, and support climate adaptation and mitigation.”

As the company grows, their influence continues to expand. They now have plans to invest in education, embarking on a program to design and share educational content on the best organic and biologic practices using, e-books, online courses, workshops and regional campaigns such as “For The People”, an edutainment program currently in development.
Joshua’s vision is clear. “...for our future generations to have the best chance at creating a better, safer, cleaner future, we believe the state of the world’s food and nutrition security must be strong.” His efforts to create products that contribute to healthy soils, nutritious foods and thriving plant-life are highly valuable and worth pursuing, just as one might pursue gold.

On the other hand, referring to products as “Black Gold” when their exploring and drilling processes can disturb and damage land and marine ecosystems, shows what humanity has valued. We now pay the price for what we thought would make us prosper. Perhaps we need a paradigm shift; what could be more valuable than preserving the only planet we have to live on and the health of the people who live there? Creating sustainable and climate-change conscious products and services is not just valuable, it is urgent. Perhaps nutrient rich soil is the new “Black Gold”? Maybe people, like Joshua and Red Diamond Compost, who extract value from organic waste materials and invasive flora are the future “miners” we need. If so, a “Golden opportunity” lies in creating products that support health and prosperity for all.

Nicole Forde (MSc) is an award-winning entrepreneur and the founder of Caribbean Dreams Publishing. A dynamic, publishing & communications company, operating since 2013. She is a passionate content creator and has collaborated with the BYBT, BTMI, BTIC & BHTA on several content projects.

What is a Certificate of Origin?

ONE OF THE documents required for an export venture may be a Certificate of Origin. This document attests that the goods in a particular export shipment meet certain criteria to be considered as originating in a particular country, e.g. Barbados. It is an important document used in international trade transactions that can save you money on duties, help protect you in case of customs audits and help reduce the risk of being subject to duty reassessments.

Each trade agreement has its own certificate of origin document. This document is signed and stamped by Certifying Officers and can provide preferential access when exporting to some countries. The certificates of origin, available free of cost on the Export Barbados website (www.exportbarbados.org), are CARICOM, Costa Rica and the Dominican Republic. You can also find a Commercial Invoice format there as well. Alternatively, all forms can be purchased from the cashier at the Export Barbados head office on Harbour Road, St. Michael, Barbados.
from Sugar Cane to Blockchain

By KAYE-ANNE BRATHWAITE

WHEN 191 COUNTRIES gather at Expo 2020 Dubai (October 2021 to March 2022), their representatives and the expected 17 to 25 million visitors to the Expo, would be invited to embark on Barbados’ socio-economic journey, through the theme ‘Innovation and Transformation: From Sugar Cane to Blockchain’. It is a theme that speaks to our history, our reality and our future; it is a theme that proudly declares ‘this is who we are’.
Barbados’ Ambassador to the United Arab Emirates, H.E. Gabriel Abed, is particularly proud of the story that Barbados plans to share with the world. “I am moved and proud that we would be sharing our narrative ‘From Sugar Cane to Blockchain.’ Barbados would always hold the title of having launched the very first Central Bank digital dollar and the tech start-ups on the island have much more in store,” the Ambassador stated during the media launch of Barbados’ presence at the Expo.

Ambassador Abed, in his capacity as Co-Founder of Bitt Inc (Bitt), a financial technology business, is well placed to appreciate the island’s inclusion of blockchain technology within its international outreach. In 2016, Bitt broke new ground by launching a digitized dollar; the first ever world-wide example of a digitized fiat currency being approved and embraced by a Central Bank. In 2018, Bitt was the impetus for the launch of Government’s digital sandbox – a Caribbean first – that facilitated Bitt’s vision and that of other start-ups, to explore and expand within a regulated environment, thereby providing a framework by which innovation can be assessed. Bitt has since partnered with the Eastern Caribbean Central Bank to create DCash – which has a fixed dollar value tied to the Eastern Caribbean dollar, that is used across much of the region. The Central Bank of Nigeria has also secured the services of Bitt as its technical partner for its e-Naira project – a digital currency to be used to increase cross-border trade and accelerated financial inclusion.

“One of the things that drew us to Barbados was the University of the West Indies, particularly the computer science programme available. We have been blown away frankly by the quality of the candidates that we have interviewed and subsequently hired,”

Stephen Ferrell, CompliancePath
…from innovation in developing new cane varieties and designing appropriate harvesting equipment, our skill sets have shifted, and as a result, new industries and sectors are poised to bloom and blossom...

A Government of Nigeria statement that sought to explain the selection of Bitt after a highly competitive bidding process, noted that Bitt was selected for “its technological competence, efficiency, platform security, interoperability and implementation experience.”

Bitt is an example of Barbados’ locally developed and now exportable skill sets – and home grown, tech-based innovation. A service-oriented, loyal, trainable workforce and high levels of worker productivity, as well as competitive business costs are adding to the appeal of the island as a cost-efficient location for information and communications technology, FinTech, software development, blockchain based solutions and investments. These advantages are backed by state-of-the art telecommunication services and a cultural affinity and geographic proximity to North America.

“One of the things that drew us to Barbados was the University of the West Indies, particularly the computer science programme available. We have been blown away frankly by the quality of the candidates that we have interviewed and subsequently hired,” said Stephen Ferrell, Managing Director (Americas and Asia), CompliancePath – an IT and software assurance company.

Simone Hilderbrand, CEO of GeekSeet (a global technology service and staffing company) provided similar feedback.

“What surprised me is the work ethic and the attitude. I didn’t expect it. I was surprised by the work ethic; I was surprised by the very educated people,” Hilderbrand stated. Both CompliancePatch and GeekSeet are actively employing local talent, with plans for training. So from innovation in developing new cane varieties and designing appropriate harvesting equipment – our skill sets have shifted – and as a result, new industries and sectors are poised to bloom and blossom, utilizing the fertile environment provided for innovation – feeding into the diversification we seek. The agro-investments of today are also embracing the tech – and we are warmly welcoming investments to bolster food security – but in the most innovative and sustainable ways.

More on this in a future edition of BIOISLAND.

Kaye-Anne Brathwaite has been at the helm of Invest Barbados for the past two years. As the investment promotion agency of the government of Barbados, Invest Barbados, through Kaye and her team, is responsible for attracting, winning and sustaining international investments.
We often hear that “The future is digital”. Our world today is vastly different from the world that existed 20 years ago and is constantly advancing. You’re a Barbadian, living and working in Barbados, at the cutting-edge of blockchain-based digital innovation with Tokenise. Help us better understand blockchain and the value that Tokenise brings.

Perhaps the easiest way to understand the value of blockchain is to understand the opportunities we offer to the world at Tokenise.

Tokenise provides a complete solution to digitise and trade assets, from traditional assets, such as stocks, bonds and funds, to alternative assets such as real estate, artwork and royalties.

Our mission is to democratisate ownership through investment. We are redefining global ownership and investment possibilities by making alternative asset classes available to the masses, opening the door to investment opportunities that most never considered possible. For example, our market has been designed to be fully inclusive – to open up the market, even to micro investors, that may only have a few dollars to invest.

This sounds like such a progressive and inclusive world for investors. How does blockchain factor into Tokenise’s business model?

A Blockchain is a list of validated blocks containing data, each linking to its predecessor all the way back to the original (genesis) block. Blockchain technology is used to operate a digital ledger that provides a complete record of a business’ economic activity, usually to track the transfer of money and asset ownership. For digital assets, a blockchain operated ledger offers the opportunity to have a single and
immutable record of ownership that eliminates a lot of the friction and challenges when transferring these assets between individuals. An example would be, in the current capital market structure, a transfer of the ownership of a stock would traditionally take 2-3 days to settle, as the process involves several different intermediaries that all operate their own databases (ledgers). While this mostly happens in the background and is not visible to the investor it creates a lot of friction, costs and is prone to error. With the use of a blockchain, the same process is not only possible, but can be executed almost instantly on a shared ledger while eliminating several intermediaries from the process. With our fully regulated exchange, the Tokenise Stock Exchange (TKSE), we will be offering a marketplace where investors can buy and trade these assets in tokenised form. Built on robust trading infrastructure, our technology solution was developed by one of the world’s leading suppliers of electronic trading systems.

**BIOISLAND** Beyond operating the Tokenise Stock Exchange (TKSE), what does Tokenise do and why is it important?

**ALLAN LANGE** As suggested by the name, Tokenise utilises tokenisation to make assets accessible to investors. Tokenisation is the creation and issuance of tokens that represent a fractionalised ownership of a specified asset or income stream. Some examples could be companies, real estate, pieces of art or royalty payments. Each token is a digital security that provides the token holder with this fractional ownership in an instrument tradable on the Tokenise Stock Exchange.

Tokenisation offers a more efficient, dynamic and democratic market, reducing the friction involved in the creating, issuing, offering and trading of securities.

A good analogy would be that we are upgrading the current capital market infrastructure from cart roads to a 21st century highway with flyovers. As the industry is still very young, the Tokenise Stock Exchange is amongst the pioneers and first exchanges dedicated to tokenised securities.

**BIOISLAND** Cart roads to highways sounds like a tall order! What has been the most memorable experience in the Tokenise Barbados journey?

**ALLAN LANGE** Working with the Financial Services Commission (FSC) Barbados, Invest Barbados and friendly local corporate partners to establish our local operations and to create a cutting-edge Fintech business, serving the international community from Barbados has been memorable. With valuable relationships and support, we’ve achieved some major goals:

**In August 2019 – We received a Stock Exchange license granted by FSC Barbados**, making us one of the first stock exchanges dedicated to tokenised securities worldwide. We now have the ability to create a market where tokenised securities can be traded between investors.

**With our brokerage license, also granted by FSC Barbados**, we can offer investors immediate access to our exchange, within the Tokenise environment. This means that we are not dependent on 3rd party brokers to provide this service.

**We were approved to enter the regulatory Fintech sandbox in Mexico**, giving us the ability to test our solution in a controlled regulatory environment as a precursor to setting up a trading venue in Mexico with access to potentially 120 million citizens.

**We were successful in a $3M capital raise to grow our operations.** This is providing the capital needed to further grow the team and build out key functions such as Marketing, Compliance, Tech, etc.
It sounds like Tokenise has been building valuable high-level relationships in Barbados. What has been the experience with the local work force at Tokenise?

Tokenise currently employs 2 local hires and works together with local partners to service international clients. The local workforce is highly skilled in traditional financial services, which is transferable to the Fintech industry. Tokenise aims to support the local workforce to introduce more education on future-focused fintech technologies in order to establish Barbados as a hub for digital assets in the region.

What advice would you give to other local professionals interested in working in blockchain or digital assets?

Research and study as much as you can. As the industry and technology for digital assets is still at an early stage, there are numerous innovations being created that will build the foundations of the 21st century digital economy. This is a great time for Barbadians to get involved, build, innovate, and offer products and solutions. Barbados has attracted several high-profile blockchain based businesses and is able to boast its own success story with BITT, a global pioneer and leader with Central Bank Digital Currencies (CBDCs). As a result, there is a lively community of professionals to connect with.

Is there anything else you would like to add?

As we are close to completion of building out our global infrastructure which includes our stock exchange, brokerage and central security depository licenses, we are looking forward to 2022 to launch our ownership exchange with exciting listings from all over the world. We would like to encourage local and regional businesses that are curious and interested in learning about how they can potentially raise capital on our exchange to reach out to us so we can start to have a conversation about their individual requirements.

With in-depth capital markets experience from leading global financial data providers and rating agencies, Allan is passionate about bridging the gap between traditional capital markets and blockchain-powered digital securities. He is a Business Development Manager for commercial relationships at Tokenise (Barbados).
Imagine a world without barriers between digital content and the physical world. Imagine beyond digital assistants like Siri and Alexa or the smart homes that we already know of. Go further than watching a three-dimensional (3D) experience on a screen or having your watch tell you that your blood pressure has been high lately. Travel 3 metaverse miles beyond where we already are and imagine how healthcare, education, entertainment, tourism and more could transform our daily lives if key technologies like augmented and virtual reality, 5G networking, the internet of things (IoT), artificial intelligence (AI) and blockchain converged. If you can imagine that world, you’ve glimpsed the potential of Web 3.0.

If you can picture how the information about your rising blood-pressure could be helpful if you gave information access to
your doctor and fitness trainer, then you understand some of the value of decentralised information. You’re also beginning to understand the value that blockchain technology brings as it makes it possible for your doctor and trainer to access that information.

Sharing medical information is far from the only benefit or use of blockchain technology. More common references to the technology are related to finance and investments. Whether referring to medical data, cryptocurrencies or non-fungible tokens (NFTs), blockchain technology solutions are an integral part to the realisation of Web 3.0.

Contributing to the evolution of Web 3.0 is Barbadian entrepreneur, Kimberly Adams, founder of Bridge Network. Founded in Barbados by Kimberly, Bridge Network is the first decentralized finance (DeFi) protocol that is coming out of the Caribbean. It empowers users to trade cross-chain (between different blockchains), create their own bridges, move tokens and non-fungible tokens (NFTs) across networks and earn rewards.

The blockchain and distributed ledger technology space is growing fast. However, the ability to seamlessly move assets across any network remains convoluted and slow. As we enter a multi-chain world, bridge network aims to solve this by introducing a decentralized protocol that enables the seamless movement of assets between blockchains.

The project came to life from Kimberly’s own struggle in navigating the DeFi world and moving assets cross-chain. Soon after the idea was born, it placed 3rd in a global blockchain hackathon and was accepted into a global blockchain incubator in Dubai known as TDeFi.

Since then, Bridge Network has seen tremendous growth on its partnerships and strategic investors line up. The project was one of five to be selected to present at the first ever crypto event at the Dubai Expo 2020. Despite the global presence, the project remains domiciled in Barbados where Kimberly aims to inspire up and coming developers and innovators to build and contribute to the Web 3.0 and decentralized world.

Bridge Network has received over USD $1,000,000 in commits to its private fundraising round.  

Bridge Network has seen tremendous growth on its partnerships and strategic investors line up. The project was one of five to be selected to present at the first ever crypto event at the Dubai Expo 2020.
Quality Solutions for a Bio Economy

By HADYN RHYND

The solution to the economic problems of Barbados lies in part in enhancing the industrial and export activity. This is only possible if the quality of Barbados’ goods and services is improved to meet international standards and remain cost competitive in the national and export markets. Increasingly, global purchasers demand products and services that meet rigorous and advanced standards (acceptable quality), not only to ensure that such products and services integrate seamlessly (flawlessly) with others in the supply chain, but also to satisfy customer expectation and to comply with an array of technical regulations of the importing countries for health, safety and environmental protection.

Barbados has started the development of a National Quality Policy for
Barbados, which is expected to facilitate Barbados’ access to the global market and enhance the competitiveness of its goods and services. The Policy is expected to be based on the development of the current international trends, the local situation and the benefits from re-engineering the National Quality Infrastructure (NQI) and the technical regulations regime.

In Barbados the use of bio-based resources is growing. Globally, innovative technologies are being embraced, where the use of new bio-based materials and products are being utilized. How do local companies seek to commercialize new technologies? How does a Barbadian entrepreneur or small business position itself to do the necessary research, planning, innovation and development to bring a product or service to the market, where it can be competitive and have export potential?

In order to compete successfully in developed markets, Barbados’ industry, especially the small and medium sized enterprises (SMEs), faces a formidable array of challenges. Apart from the logistics, management and financial issues, one of the major difficulties is the attainment of demonstrable product and service quality demanded by regulatory authorities as well as by the major players in the market. In order to exploit foreign markets, it is required that Barbados’ industry has access to an internationally recognized but supportive National Quality Infrastructure that can provide the required evidence of product compliance.

Standards, being voluntary agreements between stakeholders, present a powerful tool to support the up-take of the bio-based economy. The Barbados National Standards Institution (BNSI) is instrumental in providing information to guide the development in bio-fuel, bio-lubricants, bio-polymers, bio-surfactants and bio-solvents.

With respect to sustainable energy, a ‘Technical Assistance Programme for Sustainable Energy in the Caribbean’ (TAPSEC), being implemented by our CARICOM Regional Organisation for Standards and Quality (CROSQ), is making provision for Barbados, through BNSI, to benefit from the implementation of the energy labelling component of the Programme. The deliverables will be in alignment and support the Barbados National Energy Policy BNEP 2019 - 2030.

BNSI continues collaboration with the Ministry of Energy, Small Business and Entrepreneurship towards the establishment of a Monitoring, Verification and Enforcement framework for energy labelling in Barbados. BNSI invites all enterprises, whether micro, small or medium sized, or simply any member of the general public who is concerned with National development, to join the Institution as a member. Members of BNSI receive preferential access, guidance and discounts on standards, testing, calibration, ‘Safe Business Certification’ and training on quality-related matters in order to make businesses competitive.

HADYN RHYND BSc, MBA
Husband, father and Director (Ag.) of the Barbados National Standards Institution (BNSI); 24 years experience; Developing Barbados’ National Quality Infrastructure (NQI); Member of the International Organization for Standardization’s (ISO) Commercial Policy Advisory Group (CPAG); Council Member of the CARICOM Regional Organization for Standards and Quality (CROSQ).
What Melinda’s Taught Marie

A CAUTIONARY TALE | By TAMAR GRANT

DURING THE 1980S, Melinda’s became the most popular brand of hot sauces in Belize. The line of products, which featured habaneros blended with various fruits and vegetables, was created by Mrs. Marie Sharp. Of particular note was Mrs. Sharp’s carrot-habanero recipe which would become the flagship for the brand. Melinda’s hot sauces became one of the first commercially successful products manufactured in and exported from Belize. Melinda’s would then go on to be the first habanero hot sauce to be nationally distributed in the United States of America (USA). Melinda’s was, in short, a major financial success for its creator, Mrs. Sharp.
However, the success of Melinda’s was fleeting. Once Melinda’s became a well-established brand in the USA, Mrs. Sharp moved to protect the brand as a Trademark. Sadly, she would discover that the company that distributed Melinda’s in the USA had acted before her and registered Melinda’s for themselves. Sadly, Mrs. Sharpe also had a contract with the distributors making them the exclusive importer of Melinda’s into the USA. Mrs. Sharpe had lost ownership of the name “Melinda’s”. The legal fracas that ensued over Melinda’s would last five years. In the end, Mrs. Sharp was forced to give up the name “Melinda’s” to get out of the distribution deal. Her saving grace was that she had never divulged the secret of her recipes. The distributors kept the name “Melinda’s” but Mrs. Sharp kept her product and rebranded under the name “Marie’s”. What Melinda’s taught Marie was the importance of registering her intellectual property (IP).

Entrepreneurs and exporters can learn from Marie Sharp’s experience. While recognizing the value of trusted relationships and hoping that values such as honesty, kindness and integrity will prevail, precautions should still be taken. Applying the lessons from this cautionary tale and protecting IP can help entrepreneurs in pursuit of their commercial “Happily every after”. ☺

TAMAR GRANT

Lawyer and Deputy Registrar of Intellectual Property at Barbados’ Corporate Affairs and Intellectual Property Office (CAIPO). CAIPO keeps and maintains a variety of business and commercial records that are vital to the orderly conduct of business in and from Barbados.
Analysis of Certified Exports

The following data outlines Certified Exports from Barbados over the period **January 1 to November 19, 2021**. Exported products are divided into **three categories** or tiers.

01 **BIO ECONOMY**

The Bio Economy includes sectors using or processing biological resources, such as the food, beverage, pulp and paper industries and parts of the chemical, biotechnological and energy industries.

02 **DESIGN ECONOMY**

The Design Economy includes sectors creating Building Materials/Supplies; Furniture; Metal Products; and Resistors.

03 **BLUE ECONOMY**

The sum of the economic activities of ocean-based industries, together with the assets, goods and services provided by marine ecosystems. (OECD)

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**Summary**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value (US$m)</th>
<th>Growth 2023 Forecast</th>
<th>Growth 2023 Forecast Details</th>
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<tr>
<td><strong>BIO ECONOMY</strong></td>
<td><strong>$144.9 m</strong></td>
<td>0.9%</td>
<td>Exports from the Bio Economy generated the largest share of foreign exchange, an increase of 2.9% compared to 2020.</td>
</tr>
<tr>
<td><strong>DESIGN ECONOMY</strong></td>
<td><strong>$110.5 m</strong></td>
<td>1.6%</td>
<td>Exports from the Design Economy decreased by 5.3% compared to 2020.</td>
</tr>
<tr>
<td><strong>BLUE ECONOMY</strong></td>
<td><strong>$33.4 m</strong></td>
<td>4.3%</td>
<td>Exports from the Blue Economy increased by 7.7% compared to 2020.</td>
</tr>
</tbody>
</table>

Exports are forecast to grow by 13% reaching US$37.8 million between Jan 1 - Nov 19.

Exports are forecast to grow by 10.2% reaching US$1.1 million between Jan 1 - Nov 19.

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**Value of CERTIFIED EXPORTS from Barbados**

This is an increase compared to 2020.

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**2023 Forecast**

Exports are forecast to grow by 4.3% reaching US$151.1 million between Jan 1 - Nov 19.
Shipments were made to 42 markets by 81 companies.

The Alcoholic Beverages sector was the principal export category.

The West Indies Rum Distillery Ltd. was the largest exporter.

Jamaica 20.4% and the United States of America 15.7% were the largest markets.

CARICOM was the largest region, accounting for 66.9%.

The Alcoholic Beverages sector was the principal export category in the Bio-Economy over the review period. Local producers sent shipments valued at US$35 million to 26 markets during 2021, an increase of 19.7% compared to the previous year. The United States of America 42.5%, France 17.2%, Canada 13.2% and Spain 8% were the principal destinations.

While exports to Canada declined by 15%, the United States of America, France and Spain registered increases of 43.6%, 64.6% and 9.1% respectively.

Projections based on current trends suggest that this segment will earn US$32.5 million for the review period in 2023, falling by 7.2%.

### SECTORS WITH POSITIVE PERFORMANCE
- Baked Goods - 1.9%
- Clothing - 1975.7%
- Fats/ Oils - 92%
- Juices & Juice Drinks - 3.3%
- Lenses - 3.3%
- Non Alcoholic Beverages - 80.9%
- Pharmaceuticals 16.6%

### SECTORS WITH NEGATIVE PERFORMANCE
- Meats/ Meat Production - 5.6%
- Milk Products - 40.1%
- Other Chemicals - 44.9%
- Paints/ Varnishes 4.9%
- Seasonings/ Sauces - 2.4%
- Snacks 13%

### INSIGHTS
- US$22.6m
- US$174m
- US$73.9m
Printed Materials/ Stationery

Certified exports of Printed Materials/ Stationery were valued at **US$11.2 MILLION** during 2021, falling by 1.8% compared with exports for the same period of the previous year. **Jamaica** was the principal destination among the 21 markets receiving shipments during 2021. Exports to that market were valued at **US$2.4 MILLION**, an increase of 1.3% from the previous year. The **Dominican Republic** (**US$1.9 MILLION**) registered a decrease of 5.8% while **Guyana** (**US$1.9 MILLION**) fell by 7.6%. However, projections based on current trends suggest that this segment will earn **US$11.4 MILLION** for the review period in 2023, an increase of 1.8%.

Aerosols/ Insecticides

Exports of Aerosols/Insecticides fell by 21.6% to **US$5.5 MILLION**, due to declining performances in **Belize** (39.1%), **Dominica** (60.2%), **Grenada** (75.9%), **Guyana** (20.6%) **St. Kitts and Nevis** (21.2%), **St. Lucia** (32.6%), **St. Vincent and the Grenadines** (67.5%) **Suriname** (16.3%) and **Trinidad and Tobago** (21.2%). Reports are that distributors are choosing to draw down on existing stocks. Projections for the next two years suggest that if current trends continue, this segment will earn **US$5.4 MILLION** only for the corresponding period in 2023, a fall of 1%. Expectations are that distributors will continue to deplete their existing stocks before re-ordering.

Primary Products

Over the review period in 2021, the certification service of **Export Barbados** service was used by three exporters of live animals and two exporters of agricultural produce only.

Certified exports of live animals were valued at **US$0.8 MILLION**, decreasing by 8.1% due to declines in shipments to **Antigua and Barbuda**, **Dominica**, **Grenada**, **Montserrat** and **St. Kitts and Nevis**, which fell by 51.2%, 23%, 3.4%, 7.2% and 38.6% respectively.

Agricultural produce was exported to **St. Vincent and the Grenadines** alone in 2021, recording shipments valued at **US$13,509.38** an increase of 13.1% compared to the previous year.

Reports are that distributors are choosing to draw down on existing stocks.
EXPORT BARBADOS

Creating Value