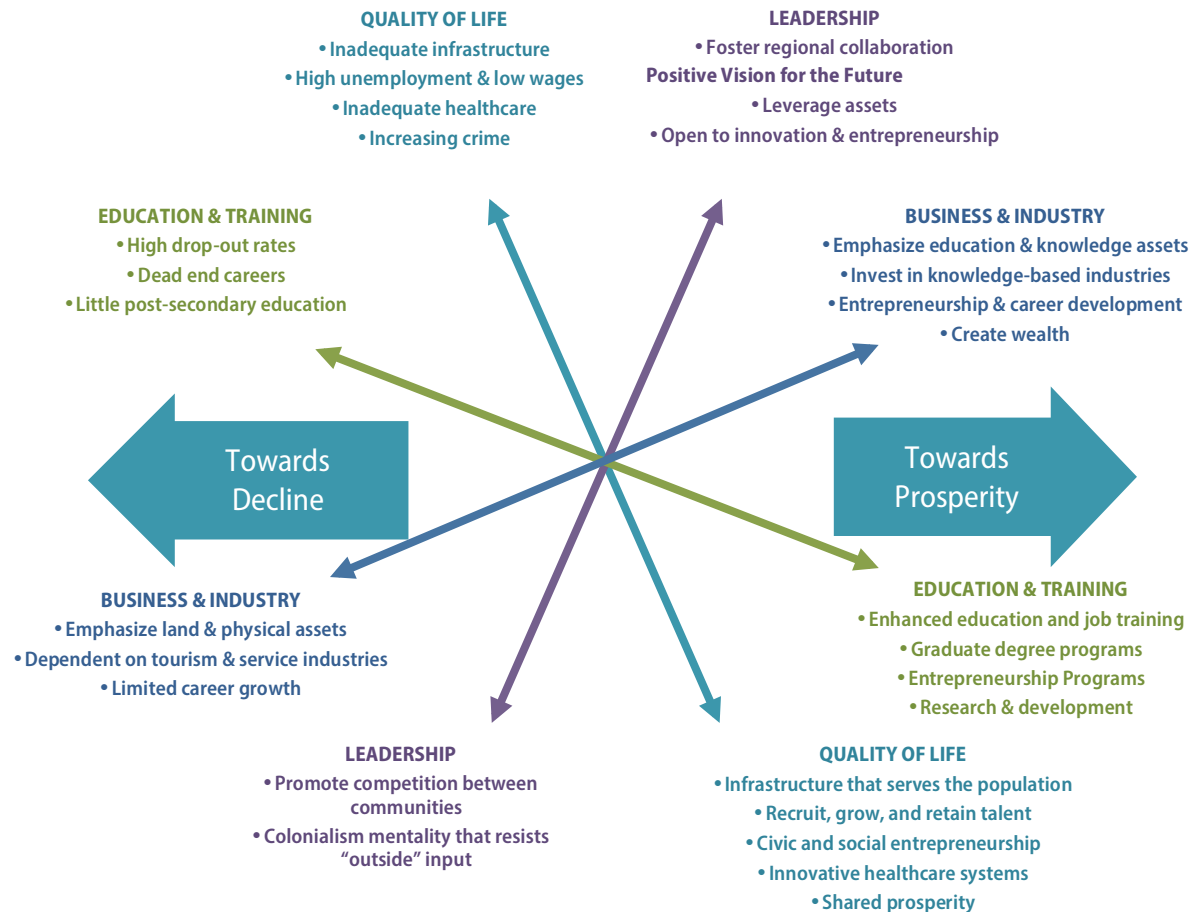


Belize: At the Crossroads

Assets and Challenges for Sustainable Development



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Belize, for its small size, is remarkably diverse ecologically and culturally. However, its forests and marine resources are under significant threat, mainly from high deforestation rates, improper solid waste management, rapid coastal development, increasing poverty, weak institutional and legal frameworks, and the recent discovery of sweet crude oil. Sustainable solutions to these challenges will require innovative, practical, and cost-effective strategies that involve all stakeholders and that seek to improve the socio-economic conditions of these stakeholders. Belize's network of protected areas must be managed transparently, utilizing best management practices and informed by applied scientific research if the biodiversity they contain is to be maintained.

PROFESSOR COLIN A. YOUNG,
DEPARTMENT OF ENVIRONMENTAL SCIENCE. GALEN UNIVERSITY,
BELIZE (2008)
CURRENTLY CEO, MINISTRY OF ENERGY, SCIENCE, TECHNOLOGY,
AND PUBLIC UTILITIES, GOVERNMENT OF BELIZE

Introduction

Sustainable development is a challenge of knowing when and how to balance economic growth with conservation. Belize provides a unique case to examine this issue in a dramatic and important way due to the amazing breadth of natural assets and economic development challenges facing this rather small country of 356,000 inhabitants. Professor Young (2008) identified six key risks to Belize's sustainable development: High deforestation rates, improper solid waste management, rapid coastal development, increasing poverty, the recent discovery of oil, and weak institutional and legal frameworks. According to the World Economic Forum's Centre for Global Competitiveness and Performance, Belize is one of the least competitive economies in the world ranking 123 out of 142 countries.

The following report elaborates select case studies of opportunities and challenges currently impacting Belize in the sectors of energy, tourism, and agriculture. This discussion will highlight current events while emphasizing that this central American country is now at important crossroads in achieving increased economic and social opportunities and sustainable growth or progression toward increased environmental degradation and decreased opportunity for all Belizeans. In the end, the direction taken will have lasting and irreversible consequences for Belize as well as Central America and the Caribbean and in some important ways the world.

Belize at The Crossroads²

Belize faces a broad range of complicated and interconnected challenges that, not surprisingly, are similar to other developing nations in Central America and the Caribbean: Limits in access to capital, inadequate infrastructure, high levels of poverty, a challenged government and a lack of educational resources as well as insufficient job and career development opportunities. In addition Belize faces a problem of scale in that the country has the lowest population density and highest poverty rates in Central America with 10 individuals/km² and poverty rates at 40%.³ To these challenges add limited numbers of post-secondary education (only 1.3% of the population as compared to 5.6% in the United States⁴) and difficulty in finding sufficient capital and talent to manage and grow new industry sectors and to be creative and innovative in managing existing business sectors. These challenges have resulted in Belize's high dependence on tourism and the extraction of natural resources as the dominant means of economic development. Without economic diversification, an important conflict of interests is occurring across the need to conserve and protect Belize's natural assets, the country's dependence on the growth of tourism, and the exploration for oil. With \$150 million per year dependent on resource-based activities (around 10% of Belize's full GDP in 2011), conservation of the environment is critical. The crossroad of development is a matter of achieving a sustainable and profitable balance across the dominant economic sectors of tourism, agriculture, and energy.

In 2009 the UNDP Development Studies concluded that the susceptibility of natural assets to threats of economic development and climate change threaten Belize's agriculture, fisheries, energy, and tourism industries. A report by the Intergovernmental Panel on Climate Change (IPCC) compared the rate of increases in average temperature within 25 and 50 years in different countries and the conclusion was that Belize will face considerable challenges due to global warming. The World Bank ranks Belize a score of 8th out of 167 countries for climate risk.

Belize has responded to such challenges with plans and strategies at local and regional levels with mixed success as this report documents. One such strategy is the Caribbean Community Climate Change Centre's (CCCCC) which published "A Regional Framework for Achieving Development Resilient to Climate Change" that provides a regional response while proposing a long-term strategy on shared climate issues between different countries. The situation is seemingly a classic example of Catch-22. In order to continue development, protection of the environment becomes a priority until a strategy of economic diversification can be successfully executed. However, with the constraints of population size, low education levels, and lack of infrastructure as well as financial capital and needed human resources inhibit the pursuit of important and timely conservation efforts. Catch-22 emerges when the developmental projects cater to immediate economic strengths while threatening the natural assets that shape the foundation of Belize's economy. Compromises are made in the short term for a variety of reasons.

In short, at Belize's current developmental stage, there is no significant economic growth without developing the county's natural assets and there is no long-term sustainability without protecting and

² Belize gained independence from the United Kingdom in 1981. English is the national language for Belizeans who are made up of seven ethnic groups who live together without significant racial or religious conflict. Belize is bordered by Mexico to the north, Guatemala to the west and south, and the Caribbean coast to the east. In addition to Maya heritage and extensive archaeological remains, this small Central American country has an abundance cultural and environmental diversity. Within the nation's 8,867 sq. miles of land (approximately the size of New Jersey) one can find jungles, rainforests, savannas, mangrove swamps, and mountains. Belize is home to the second largest barrier reef in the world: the Barrier Reef Complex. Approximately 93% of the country is classified as forest - the remaining land consists of farmland, scrub, and swamp.² The climate in Belize is subtropical and averages with an annual temperature of 80 degrees Fahrenheit. Rainfall ranges from less than 50 inches per year to over 180 inches per year. Rainy seasons last from June to November, followed by a dry season until May.

³ Belize's Ecosystems: Threats And Challenges to Conservation in Belize

⁴ Abstract Of Statistics - Statistical Institute of Belize

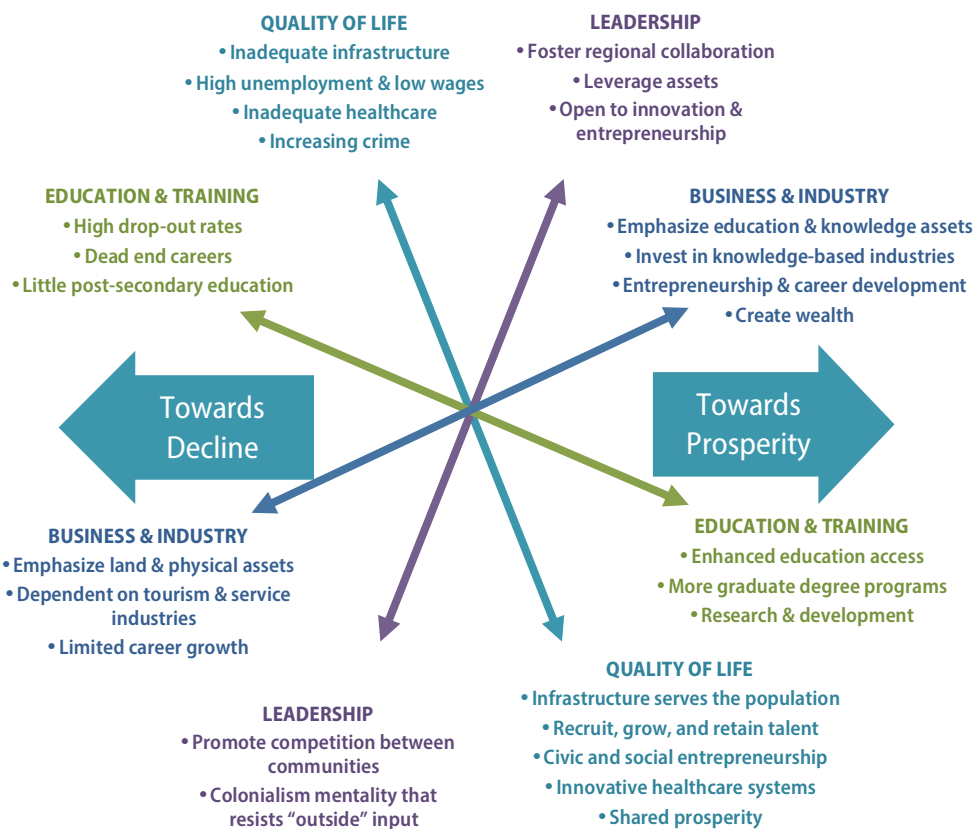
conserving the nation’s environmental assets including an investment in educating and training a talented and capable public and private workforce.

The challenges that Belize faces in establishing sustainable human and economic development are common among many developing nations and regions in Central America and the Caribbean:

- Widespread poverty
- Limited education and career opportunities
- Inadequate infrastructure to support technology growth
- The need to preserve threatened and irreplaceable natural resources
- The need to diversify from tourist-based economies

The crossroads at hand has two directions. One leads towards sustainable social and economic prosperity, while the other leads to decline. Events can be analyzed in terms of their underlying philosophy, strategies, actions and consequences in Business and Industry, Education and Workforce Training, Leadership, and Quality of Life, Figure 1.

Figure 1: Belize at the Crossroads



Source: IC² Institute, The University of Texas at

Business & Industry: Launching and growing profitable businesses is crucial to creating job and career prospects and to providing the tax revenue needed to foster successful education and training programs as well as a sustainable quality of life for Belizeans. To strengthen Belize's business development and environmental conservation it is important to leverage targeted clusters of opportunities to diversify the nation's economy. Over-reliance on one industry, such as tourism, while providing much needed employment will result in limited opportunities for career development and economic diversification. The emerging oil industry is clearly an important asset for Belize. However, while the oil industry can provide jobs and important financial support a lack of internationally advanced drilling and pollution containment technologies and management practices for drilling in environmentally sensitive areas is a significant threat to the survivability of Belize's tourist industry. At the crossroads, the emerging Belizean oil industry can either invest in training and competence building to meet stringent environmental regulations or be driven by quick profits while minimizing environmental protection considerations.

Education: One direction sees increased investments in Belize's education institutions leading to continued improvements in primary and secondary school enrollments as well as extended efforts to increase the variety of post-secondary studies. The other direction leads to an underfunding of education assets and results in a stagnation of educational efforts as demand overruns capacity and where education and training are not adequate to support Belize's economic and social development. A key question is whether Belize's education institutions will receive the investments necessary to promote programs that encourage students to become educated citizens and employees and to provide the needed talent for established and emerging industries and public sector.

Leadership: One direction centers on having visionary leaders who cooperate while representing Belize's academic, business, and government sectors. The objective is to build win-win-win scenarios for all three groups. With Belize's significant challenges and limited financial resources, such visionary leadership is crucial to find creative ways through entrepreneurship and innovation to identify and work toward shared goals. One direction fosters regional collaboration, the leveraging of assets, and being open to entrepreneurship and innovation. The other direction leads to increased competition across public and private sectors, mismanagement of Belize's human and natural assets, and a resistance to outside advice and assistance.

Quality of life: One direction works to increase the social and cultural wellbeing of all Belizeans. Civic, social, and environmental entrepreneurs from the public and private sectors need to work together to enhance shared prosperity and to establish programs and activities to protect Belize's environment and cultural and historical heritage. The other direction leads to environmental degradation, inadequate healthcare, high unemployment, and increased crime.

Case Studies

Energy

In 2005, Belize Natural Energy (BNE) discovered oil in the Spanish Lookout Field. After this initial success, 18 additional companies have worked to attain oil exploration licenses from Belize's

government.⁵ Public concern regarding oil exploration, especially offshore drilling, has led to intense criticism of oil companies risking Belize's world heritage natural assets. In a case brought by Oceana (COLA) and the Belize coalition to Save Our Natural Heritage, it was determined that Belize's government failed to properly assess the environmental impact on Belize's coast as mandated by law. It was also stated that the oil companies did not have the proven ability as well as the necessary funds, assets, machinery, equipment, tools and technical expertise to drill safely. As a result, in April 2013, Belize's Supreme Court declared null and void offshore drilling contracts issued by the government. However, despite this obstacle, after some relatively minor operational restructuring, several oil companies started drilling operations in May 2013.

Tension between the public and "development" interests and policies and actions toward oil exploration highlight the problem encountered of managing both growth and conservation. Dr. Colin Young observed in 2008 that the majority of potential oil reserves are located within Belize's protected areas.⁶ The issue of changing the law on environmentally sensitive areas to accommodate oil exploration is an understandably complex and important issue.

In short, Belize is at a crossroads regarding exploration for oil. On one hand, energy businesses can work together to develop the necessary skills and technology to make oil drilling as safe as possible and leaders can revisit relevant policies and inform the public on key issues. Education institutions can train the technical, business, and environmental talent needed to protect Belize's important natural resources as well as grow successful businesses. On the other hand, industry's quest for profit may undervalue important and costly safety issues leading to a lack of transparency, understanding, and accountability and ultimate environmental disaster for Belize. Protecting the natural environment and enhancing socio-economic conditions for communities affected by the oil industry is paramount. Without Belize's prized natural and historical environments, tourism will decline to insignificant levels.

A Positive Response

An important example of how Belizean energy companies can catalyze positive change is Belize Natural Energy (BNE) and the BNE Trust and the support it provides Belizean students through education loans and training opportunities for university students, see <http://www.bnetrust.org/>. Such capacity building is an important step in helping to develop the skilled labor and research infrastructure needed for sound environmental and business practice in Belize.

In addition, renewable energy technologies have the potential to become increasingly viable in Belize providing new entrepreneurial opportunities. Hydroelectricity and biomass and other technology advancements are increasingly being used to harness bio-diesel and fuel-ethanol. International partners can provide needed expertise in the development of business, leadership, and quality of life issues. One such example is the Oil for Development (OfD) Programme launched by the Norwegian government, <http://www.norad.no/en/thematic-areas/energy/oil-for-development/who-we-are>. The program provides resource, revenue, and environmental management including principles of good governance. As stated by OfD: "Assistance within environmental management includes assistance to develop basic legislation, regulations and guidelines covering environmental dimensions of petroleum sector management, and systems for monitoring the domestic and international oil industry. Environmental and social impact assessments, risk reduction measures and action plans to reduce accidental pollution are particularly important tools for environmental management."

⁵ BCH International Inc, BelGeo Ltd., Belize Natural Energy, Blue Creek Exploration Ltd., Island Oil Belize Ltd., Miles Tropical Energy Ltd., Northern Spirit Resources Inc., OPIC Resource Corporation (now abandoned), Perenco Limited, PetroBelize Ltd., Princess Petroleum Ltd., Providence Energy Belize Limited, RSM Production Corporation, SOL Oil Belize Ltd., Spartan Petroleum Corporation, US Capital Energy Belize Ltd., West Bay Belize Ltd., and ZMT International Inc.

⁶ Young, Colin, "Belize's Ecosystems: Threats and Challenges to Conservation in Belize," pg. 23

Tourism

The effort to conserve Belize's natural assets in a sustainable way is crucial as tourism is such an important economic engine in Belize. In 2013 the World Travel & Tourism Council calculated that tourism provided 40,000 jobs in Belize, close to 30% of national employment. However, with sensitive sites such as the Barrier Reef the Barrier Reef (<http://www.ambergriscaje.com/pages/town/barrier.htm>) and the Blue Hole (<http://soundwaves.usgs.gov/2001/06/>) being the main destination for tourists, conservation is crucial to preserving these natural assets.⁷ Coral bleaching, hurricanes, global warming, and natural diseases have already resulted in a reduction in live coral of the Caribbean. Between 1985 and 2012, coral cover in Belize dropped from 28% to 14%.

A government effort to combat the threat of "death by tourism" came in 2011 with the National Sustainable Tourism Master Plan (NSTMP) that defined seven tourism zones: Southern Belize would focus on eco-tourists; Western Belize would focus on Caracol and a national archaeological museum; Central Coast Belize would focus on urban tourism; the South Eastern Coast would focus on beach resorts and nautical tourism; and the Northern Islands would develop around the caye resorts.

However, the challenge of "death by tourism" persists. For example, a recent case involved a proposed port on Crawl Caye by Norway's North Cruise Line. Strong local resistance opposed any development efforts near Crawl Caye, so the cruise line relocated the project to Harvest Caye which is outside Belize's World Heritage Site protected zone. However, it is still feared that the Harvest Caye tourism port will disrupt the environment and local commerce on the Placencia peninsula since there is not adequate infrastructure to absorb a high volume of tourists coming ashore. The Placencia Tour Guide Association objected to this development because of concerns of increased damage to marine and inland environments. Despite these objections and fears, in August of 2013, it was announced that the Norway Cruise Line had acquired 75 acres in Harvest Caye with plans to invest up to \$50 million to develop a cruise line port destination⁸.

In short, tourism at an important crossroads where economic development efforts threaten the sustainability Belize's unique natural assets. Once the environment is sufficiently degraded the mega tour ships will find new ports of call and Belize will be left with markedly fewer positive development possibilities.

A Positive Response

An excellent example of collaboration between government, businesses, and universities for ecotourism is a project managed by [Cornell's Center for Sustainable Global Enterprise](#) with researchers at the University of Belize, the Belize Tourism Board, Gap Adventures, and Planeterra. The objective of the project is to assess the costs and benefits of maintaining sustainable destinations as tourist attractions, as well as to ensure the local public benefits from the industry.⁹ Conservation efforts can protect the coast and aquatic species as defined in [The National Protected Areas Policy](#)

⁷ As an example of a perhaps unrecognized threat to the natural reef ecosystem, during a recent visit by one of the authors to Belize's Great Barrier Reef it was noted by a Belizean guide that the thousands of snorkeling and scuba diving tourists were unknowingly transmitting quantities of suntan lotion from their bodies into the water around the reef causing considerable damage to the reef and surrounding marine life. As a result, an effort is being made to have the snorkeling tourists wear sun-protective clothing rather than lotions that can pollute the sensitive reef area.

⁸ <http://www.caribjournal.com/2013/08/15/norwegian-cruise-line-to-develop-cruise-destination-in-belize/>

⁹ http://www.planeterra.org/cornell-s-center-for-sustainable-global-enterprise--gap-adventures--and-planeterra-foundation-partner-to-assess-real-costs-of-managing-tourism-destinations-press_release-7.php

[and Systems Plan](#) which was developed to build a network of marine protected areas and other important habitats. The marine protected areas cluster within the Barrier Reef as a World Heritage site, has influenced policy towards development, monitoring, and evaluation of these highly sensitive environmental areas.¹⁰

Another example of positive public-private cooperation is Corazon y Vida Maya and its partnership with Sandos Caracol to provide tourist with packages that help promote and thus preserve cultural Maya practices and all profits go to the financially challenged communities that make up [Corazon Y Vida Maya](#).

Agriculture

From the 1960s, large-scale agriculture has become a central pillar of the Belizean economy with a focus on citrus, bananas, and sugar cane. The growth in these agriculture industries, plus increasing coastal development, illegal logging, and slash and burn agriculture, all contribute to Belize's increasing deforestation which is two times higher than other countries of Central America. Dr. Young (2008) estimates that without effective measures to decelerate current rates of deforestation, a great percentage of Belize's forests will be gone in 40 years.¹¹

Environmental degradation and poverty can be conceptualized as a reinforcing loop; the more poverty exists, the more environmental concerns are overlooked and practices such as illegal logging and slash and burn agriculture increase. Lack of employment opportunities and inequality has a tendency to force the poor to be dependent on harvesting natural resources. Without access to needed education, reliable healthcare, and adequate salaries, concerns centralize on short-term needs. Because of this mutually reinforcing and downward spiral, alternatives need to be developed that encourage a development agenda that works to integrate poverty reduction and environmental sustainability with economic development.¹²

A Positive Response

Organizations such as [Blue Ventures](#) focus on marine conservation efforts and offer volunteer opportunities to help conduct research on the Barrier Reef. As a self-described "science-led social enterprise," the primary goal is aiding communities who depend on the coast for their livelihood. Blue Ventures conservation makes economic sense by designing a model that takes advantage of Belize's strongest assets and forming a niche around them. For example, volunteers gather data for external parties such as the Belize Fisheries Department and the National Coral Reef Monitoring Network. With growth and success, Blue Ventures has expanded into different initiatives that promote conservation with land animals as well.

The Blue Ventures model has pioneered social entrepreneurial conservation efforts adding to the research priorities of the country and fostering a higher quality of life. While volunteers give presentations in classrooms, a need remains for bigger efforts in community education. Dr. Young (2008) suggests that co-management of Belize's natural resources is a viable strategy, but efforts must be made to ensure the active participation of local agents in the decision-making process, impacting levels in management and financial sustainability.¹³

¹⁰ Belize National Sustainable Development Report, pg. 13

¹¹ Belize's Ecosystems: Threats and Challenges to Conservation in Belize, 1. High Deforestation Rate

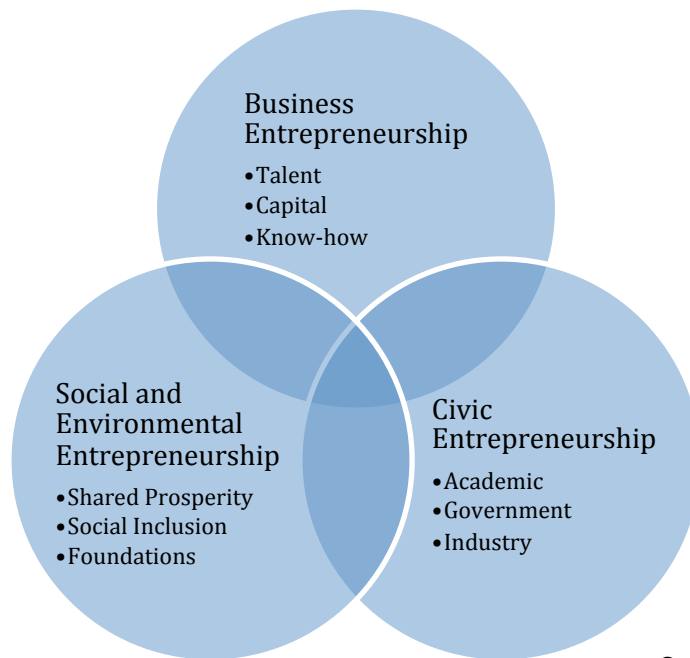
¹² Future Foreign Policy

¹³ Young, Colin, "Belize's Ecosystems: Threats and Challenges to Conservation in Belize," pg. 27

Thinking Entrepreneurially

This report promotes business, civic, social, and environmental entrepreneurship as an important component in Belize’s strategies for economic, environmental, and social development, Figure 2.¹⁴

Figure 2 Three types of Entrepreneurship needed for Belize



Source: IC² Institute, The University of Texas at Austin

Business Entrepreneurship centers on linking talent, technology, capital, and business know-how at the regional-level for the creation of opportunities through new business processes and products. Talent refers to individuals or champions who make things happen and who facilitate the development of new business opportunities. Capital, whether venture, angel, or government grants, provides the fuel for development of the business idea. Business know-how includes management, legal, marketing, and sales and distribution and is crucial to the initial success and growth of new ventures.

Civic Entrepreneurship utilizes innovative approaches and partnerships in the pursuit of leveraging regional, national, and international resources to solve challenges and to create new infrastructures for accelerated and sustainable development. Civic Entrepreneurship is built upon the networking key regional academic, government, and business leaders. Civic entrepreneurship helps build regionally based "smart infrastructure" for commercialization of science and technology and new businesses processes for new industries as well as for enhanced competitiveness of established industries.

¹⁴ CAMERON COUNTY / MATAMOROS AT THE CROSSROADS: ASSETS AND CHALLENGES FOR ACCELERATED REGIONAL AND BINATIONAL DEVELOPMENT, David V. Gibson and Pablo Rhi-Perez, a CBIRD Report (2003), pg. 3, 4

Social and Environmental Entrepreneurship focuses on finding creative and innovative ways to improve society through social and economic inclusion. Social entrepreneurs network and link public and private sectors including non-profit and non-government organizations (NGOs) and foundations to solve challenges and to provide new opportunities for an accessible and improved quality of life for all.¹⁵ Social entrepreneurship can add a different dimension to policies through the design and implementation of solutions that form the foundation for social innovations that are sustainable.¹⁶ In addition, it is the position of this paper that Environmental Entrepreneurship can be used to develop practical, cost-effective solutions linking Belize's energy needs and developmental opportunities.

HORIZON 2030

[Horizon 2030](#) was conceived by Barnett & Company after interviews and study of multiple stakeholders throughout Belize. The goal was the establishment of a framework to achieve national vision for development. The framework identifies different sectors with challenges and suggests three strategies that could be implemented across Belize's different levels of government.

- **Public planning:** Development policies should be inclusive, planning should be integrative and programs should include clear monitoring and evaluation processes. The end goal is to create community value so that all citizens have a stake to contribute to sustainable development. Open dialogue with diverse communities is seen as crucial to paving the way towards long term and mutually beneficial goals.
- **Economic resilience:** The objective is to increase sustainable agricultural production, creating environmental and economically sustainable tourism and diversification of the small business sector. Also called for is an educated and skilled work force including entrepreneurs and a strategic outline of investments in infrastructure that maximize overall economic capabilities.
- **Implementation:** The collaboration of district committees is seen as important for an inclusive implementation strategy. Such broad representation will allow better program monitoring including reports to the National Assembly and the Ministry of Economic Development.

In her landmark book, Thinking in Systems, Donella Meadows and Diana Wright (2008) introduce the concept of "system traps" which we suggest have implications for Belize. Horizon 2030's three strategies are seen as key to mitigate "policy resistance" and "success to the successful" system traps.

- The "Policy Resistance Trap" results from a waste of energy and time from uncoordinated actors in policy making resulting in separate and conflicting goals being pursued by different actors.¹⁷
- The "Tragedy of the Commons Trap," is when shared resource are misused and/or overused due to weak feedback and unrealistic considerations of the condition of the resource for sustainability.¹⁸

¹⁵ Wildlife Conservation Society, World Wildlife Fund, Protected Areas Conservation Trust

¹⁶ <http://studentsforliberty.org/blog/2012/12/28/social-entrepreneurship-a-key-to-poverty-reduction-and-agorism/>

¹⁷ Meadows, Donella, "Thinking in Systems: A Primer," pgs. 113-115

¹⁸ Meadows, Donella, "Thinking in Systems: A Primer," pg. 116

- The “Success to the Successful Trap” is where successful actors are systematically and continuously rewarded and advantages for a select few become institutionally embedded.

While an understandably challenging task, the implementation of the Horizon 2030 framework will encourage input and communication to coordinate, evaluate, and if needed adjust priorities along multiple scales of interest. If less energy is spent on resistance to action, more effort can focus on using the resources at hand to address key issues of diverse communities. For example, the Horizon 2030 economic resilience strategy outlines promoting investment in agriculture and agro-processing along with supporting reforestation and sustainable local logging to create jobs and reduce poverty.

A Positive Response

One example of such win-win collaboration is the [University of Belize’s Environmental Research Institute \(ERI\)](#) and the [Belize Environment Outlook](#) written as a partnership with Ministry of Natural Resources and the Environment and the United Nations Environment Program. The ERI’s mission is to offer pragmatic solutions to sustainable management initiatives and to provide information fundamental to multiple stakeholders. For example, the [“Socioeconomic Assessment of the Sea Cucumber Fishery in Belize”](#) benefits the interests of entrepreneurs, government policy decision makers, and the fishing industry. Investment in research also focuses on developing opportunities that local entrepreneurs can take advantage of with the support of the ERI.

MESTPU STRATEGIC PLAN 2012-2017

The Ministry of Energy, Science & Technology and Public Utilities ([MESTPU](#)) report states the objectives of a five year period from 2012 to 2017. The report is divided into two parts: One focuses on a national sustainable energy strategy while the other explores possible science, technology, and innovation options for implementation. The framework’s design was intended to align economic and energy interests to promote sustainable development, and to support long-term investments in technology and innovation. The overall goals of the plan can be summarized by four objectives:

1. Increasing energy efficiency and conservation by thirty percent,
2. Reducing dependence on fuel consumption by fifty percent,
3. Tripling the amount of modern energy carriers, and
4. Building MESTPU institutional capacity with increases in staff and training

MESTPU’s Science, Technology and Innovation (STI) Strategic Options for Implementation plan focus on (1) capacity building, (2) STI development for growth and competitiveness, (3) microenterprise development for rural and vulnerable populations, and (4) expanding information and communication technologies. Highlighted challenges include:

1. High domestic interest rates for commercial loans
2. Difficult access to affordable long-term capital investments for the private sector
3. Dependence on traditional agriculture production
4. Decreasing primary education enrollment

In addition, MESTPU highlights problematic levels of crime and theft, high tax rates, high corruption, and government bureaucracy being perceived as impediments to attaining these desired objectives.

Measures recommended by MESTPU to address these challenges include the establishment of a Belize Centre for Excellence that provides incubation support and entrepreneurial programs, the development of a National Diversification Strategy, allocating a budget for a National Private Sector

Research and Development Fund, and the support of technology and financing programs for microenterprise development.

A Positive Response

The University of Belize has taken initial steps that could pave the way for the establishment of a Belize Centre for Excellence in Science Technology and Innovation (STI). In cooperation with the Belize Trade and Investment Development Service (BELTRAIDE), the Small Business Development Centre ([SBDC](#)) has been in operation since October of 2012.¹⁹ The lessons learned and accomplishments achieved by the SBDC provide crucial information to identify opportunities and unmet needs of innovation and business, social, environmental, and civic entrepreneurs. This collaboration is a further example of mitigating the Policy Resistance System Trap as a result of sharing resources and goals among government, university research, and private businesses to maximize success.

Belize: A Model for Sustainable Human, Environmental, and Economic Development

The overview of Belize's current economic challenges and constraints provides a sense of the scale of the challenges and possible creative and innovative solutions that sustainable development requires. Throughout this report different suggestions for business, civic, environmental, and social entrepreneurship have been discussed and examples provided in:

- Energy: BNE Trust's student scholarships and stipends for educating and training and capacity building for enhanced capability in oil exploration while protecting Belize's valued environmental assets.
- Tourism: Cornell's Center for Sustainable Global Enterprise collaboration with Belizean agencies, businesses, and universities for.
- Agriculture: Blue Ventures and the model that allowed for conservation as well as business development.

A major challenge to implement these and other such programs is in showing the value in applying new, and in some ways pioneering, types of public/private cooperative activities. However, through the creativity of entrepreneurs, the support of the government, and the dedication of universities to these issues, sustainability can become a cornerstone of the twenty-first century Belizean economic, environmental, and social development. The vision is to leverage Belizean assets and know-how With national and international networks and strategic alliances to:

- Promote high quality education and research on Belize's social and environmental assets and challenges
- Facilitate entrepreneurial activity and business development well suited to the benefit of Belize and Belizeans and sustainable economic opportunities for job and wealth creation
- Make Belize an exceptional regional and international model for sustainable development
- Leverage Belize's ecological and human diversity to provide useful lessons and knowledge for
 - Environmental and cultural conservation and improved quality of life for Belize in a changing global environment
 - Fostering sustainable economic development by and for Belizeans

Belize could well serve as a model for other Central America and Caribbean regions in how to most effectively use indigenous knowledge and know-how leveraged with global expertise to facilitate accelerated human and economic development while at the same time protecting and enhancing the region's natural environment of fragile botanical and biological resources. The goal is to foster the development of self-sustaining educational and research organizations that promote development and sustainable ecological systems,

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