



Caribbean Sustainable Agriculture, Ltd

Belize Sustainable Agriculture, Ltd - Cayo One Estates, Ltd - CSA Guatemala, SA



BELIZE OVERVIEW

Belize, the former British Honduras, is a small Central American country located south of Mexico's Yucatan peninsula. It is readily accessible from key CAC markets and has many characteristics which, when combined, make it a highly attractive destination for Foreign Direct Investment, including: Geography/Climate, an English-Speaking Culture, a Diverse Population, Political and Economic stability, and Extensive Development Opportunities. Additional information, including an extensive series of maps and economic data, can be found in the Appendix.

Belize Geography and Climate

Belize is a country of approximately 22,975 km², roughly the size of Massachusetts or Wales, located south of Mexico's Yucatan peninsula and bordered on its entire eastern side by the Caribbean. Its eastern shoreline is protected by the Belize Barrier Reef, a 300km series of reefs that are the second largest in the world after Australia's Great Barrier Reef. The coastline rises from beaches and mangrove swamps to a wide series of coastal plains in the center and north that stretch to the Mexican border in the north and Guatemala in the west. Further south, a much narrower coastal plain rises to the Maya Mountains whose peaks exceed 1,000 meters. Belize has an extensive network of rivers and creeks throughout the country that provide both abundant water sources and easily accessed powerful aquifers.

Belize's Ministry of Agriculture estimates that the country has about 800,000 hectares of land that are potentially suitable for agriculture, of which about 300,000 hectares are estimated to be grade 1 or grade 2 land (i.e. high quality). According to the Agriculture Ministry only 80,000 to 120,000 hectares of the 300,000 available prime hectares are being used for agricultural purposes, and of that amount 40,000 to 60,000 hectares are being used as pasture land. However, most of the land available for potential agricultural use is un-cleared and not served by a paved road network.

The climate of Belize can best be described as "a mild tropical climate" with mean temperatures of 24°C in January and 31°C in July. Annual rainfall ranges from about 1,300 mm in the north to a peak of over 4,000 mm in the southernmost part of the country. The mean annual humidity level is 83%, although this is highest along the coastal districts and in the southern part of the country. Belize's climate has distinct "dry" and "wet" seasons, with the driest part of the year usually from December through early June and the wettest part

usually from mid-June through late-November. There is also a generally reliable “mini-dry” season in the late July to late August period, which can be very helpful for farmers.

Belize is the western extremity of the area known as the Caribbean Hurricane belt. With one cyclone storm hitting Belize about every three years (18 Hurricanes and 18 Tropical Storms in the past 100 years). Given that a cyclone might materially impact a 50-150 km swath, depending on its severity, the probability of material damage to a particular location would be 1 in 9 in any given year. However, when Hurricane Earl struck Belize as a Category 1 Hurricane on August 4th, 2016, and passed directly over CSA’s Cayo One estate, it only affected some 50% of CSA’s corn crop through wind damage. Santander’s neighboring sugarcane fields suffered no wind damage; the main impact was water logged fields, which would not be the case at Cayo One given its superior drainage characteristics.

Belize: English Speaking Culture and Diverse Population

Belize was a British colony from 1862 to 1981, although British settlers appeared as early as the late 17th century and the country was British controlled by the late 18th century. These ties to the British Empire have left Belize with a unique heritage in Central and Latin America. It is the only CAC country (with the exception of certain Caribbean islands) where English is the official language, the British sovereign is the Head of State, and the legal system is derived from British Common Law. Some 75% of the Belizean population is estimated to have either a fluent or good command of English, the school system is conducted in English, government and business affairs are conducted in English, and most of the population, even in the countryside, uses English. The British influence has particularly permeated the judicial and civil administration, which appears to suffer somewhat less than its Spanish speaking neighbors from corruption and where the degree of transparency and efficiency is better than those generally seen in the CAC region.

The population of Belize is an unusual melting pot of Mestizos (Maya and European), Kriols, Spanish, Mayas, Afro-Amerindians (Garifuna) and Mennonites. This makes for a society that is not only generally bilingual or multilingual, but one where there is a relative willingness to accept those who are different, including foreigners. The Mennonite population, which represents about 5% of Belize’s overall population, provides a rare and valuable cadre of educated, skilled, and generally tri-lingual workers able to adapt to many roles in agriculture, construction, engineering, and artisan crafts.

Belize also has a young and fast-growing population, with 35% of the population being under 14 and a median age of 22. Annual population growth is estimated to be 1.9%.

Belize: Political and Economic Stability

Political stability has been an impressive trait of post-independence Belize over the past 38 years. The country has two main political parties, the PUP (“Peoples’ United Party”) and the

UDP (“United Democratic Party”), who have received over 97% of all votes cast in the eight elections since independence in 1981. These two parties have handed power over to each other in five out of the eight elections, creating a remarkable backdrop of stability in a region often known for high-handed or even despotic political behavior. And while the PUP is generally considered to be a “Center-Right” party and the UDP is generally considered to be a “Center-Left” party, both parties have shown themselves to be in favor of private ownership, business, and foreign investment. Although the current UDP administration, early in its mandate, nationalized certain public utilities, it is important to note that these acquisitions were subject to international arbitration, after which the Government of Belize agreed to pay the full arbitration award, including interest, to previous owners. Moreover, the UDP administration, which won a historic third mandate in November 2015 (expiring in November 2020), has clearly stated that it has no interest in any further nationalizations.

Belize has enjoyed consistent economic growth over the past twenty-five years, although this growth was seriously impacted by the Global Financial Crisis. Real GDP grew at approximately 4% annually between 1990 and 2008, falling to 0% in 2009 and 2010. Recent forecasts expected GDP growth to return towards the 3%-4% trend-beginning in 2016, although estimates were lowered to the 2% zone due to the sharp and continuing fall in crude oil prices, which has reduced exports and government revenues, as well as challenges in the agricultural and mariculture sectors. 2018 GDP was estimated at \$1.92 billion with per capita GDP of approximately \$4,860 (Central Bank of Belize / CIA Factbook).

Belize has consistently recorded a merchandise trade deficit, with 2018 imports of \$897 million exceeding 2018 exports of \$452 million. This deficit has been offset by tourism earnings, foreign aid, remittances from expatriate workers, and Foreign Direct Investment. The Belize Dollar has been pegged since 1976 to the US Dollar at \$ 1.00 = BZD 2.00 and the country’s monetary policy has been adeptly managed by the Central Bank of Belize for the past forty years. Belize inflation has averaged about 2.0% over the past twenty-five years and has trended down to <1.0% in the past decade. (CIA World Factbook).

Unemployment remains a challenge in Belize, with the 2018 rate estimated to be 9.4%, with significant underemployment also reported (Central Bank of Belize). This is consistent with neighboring countries but higher than in many developed economies. (CIA World Factbook)

Another area where Belize remains underdeveloped is its transportation infrastructure. The country only has ~ 400 miles of paved roads within a road network of ~ 1900 miles. There is no rail network and there are only two ports that have scheduled freight service. The only international airport is Belize City (BZE), although there is excellent service to the U.S. with nonstop flights to Atlanta, Charlotte, Chicago, Dallas, Houston, Los Angeles, Miami, and Newark. Belize’s telecommunications infrastructure has relatively high tariff levels, as is often the case in Caribbean and Central American countries.

Belize: Extensive Development Opportunities

Belize appears to possess a number of qualities that make it an attractive target for Foreign Direct Investment. First and foremost, it has a 35+ year track-record of political and economic stability. Foreign investors who successfully develop projects in Belize can expect that they will not be subject to arbitrary regulation, taxation, or indeed expropriation. Belize also offers generous fiscal incentives to encourage major Foreign Direct Investment.

Alongside an attractive political, legal, economic and fiscal framework, there are two areas that are remarkably undeveloped given Belize's natural strengths: agriculture and tourism.

Belize's agricultural potential is discussed in Sections 4, 5, and 6 of this Memorandum. But Belize also has some of the most beautiful coastline in the Caribbean, and its Barrier Reef is world-renowned, yet it has a very limited hotel infrastructure and no world class resorts or marinas. For an English-speaking country with the most stable ownership environment in the region, it is surprising that more North American development talent and capital has yet to come to Belize. CSA management considers that it is likely that over the next five to twenty years this situation will change due to a number of factors, such as security issues in neighboring Mexico and other Central American countries, the relatively low cost of land and labor in Belize compared to certain Caribbean island destinations, and by the long term secular trend of US and Canadian Baby Boomers seeking a primary or secondary retirement location in stable destinations with a warm climate, an English speaking heritage, and economic and political stability. This increase in foreign investment in Belize's tourism should in turn help underpin the country's economic and political stability.

BELIZE AGRICULTURE OVERVIEW AND OPPORTUNITY

Belize's agriculture sector provides compelling opportunities to benefit from a highly unusual combination of positive factors that should allow skilled operators to generate attractive cash returns from farming operations as well as long term land value appreciation. These factors include:

- Affordable prime land that is suitable for agricultural development
- Abundant low-cost water supplies
- Low cost labor (skilled and unskilled)
- Good road access to nearby regional markets from two main highways
- Regular seaborne and air freight service to key markets
- A business-friendly government and regulatory environment

The above factors are supported by powerful secular trends, which should ensure strong regional demand and pricing for agronomic crops, as well as solid global demand for plantation crops, within the context of a long-term uptrend in global food demand.

One of the key takeaways of these trends, as well as the above Belize specific factors, is they strongly support the ongoing value of prime Belize agricultural land.

1. Belize Agriculture Opportunity

Belize currently provides an opportunity to generate agricultural sector returns which are significantly higher than those available in more developed markets. The opportunity involves acquiring prime quality land that is suitable for agricultural development at attractive prices, and then making the necessary capital investments to allow large scale, highly mechanized farming using automated irrigation and the latest farming techniques as deployed in the United States and other leading producing nations (e.g., Brazil, Argentina). The Belize agriculture opportunity further benefits from highly skilled labor and relatively low cost semi-skilled and low-skilled labor, ready access to regional markets, and a business-friendly government and regulatory environment.

Accounting for the risks inherent in agriculture, notably severe weather risks to permanent crops, CSA management initially focused its emphasis on agronomic crops, which were expected to provide an attractive opportunity for positive cash-flow generation thanks to the proximity of large pockets of premium price demand in neighboring countries.

Following an extensive period of investment and development work in the corn and bean segment, and with the arrival of a key new regional actor, Santander Sugar, CSA determined that there were lower risk, higher return opportunities in sugarcane and redirected its focus on that sector.

1.1. Belize Agriculture Opportunity: Topographic & Climatic Overview

A first step in analyzing Belize agriculture includes a review of the country's physical and climatic characteristics. Topographical features divide the Belizean landscape into two main physiographic regions.

The first includes the Maya Mountains and the associated basins and plateaus that dominate all but the narrow coastal plain in the southern half of the country. The mountains rise to heights of ~ 1,100 meters and these are covered with rainforests, whose highly erodible soils of low fertility and heavily forested highlands are very sparsely inhabited.

The second region comprises the northern lowlands, along with the southern coastal plain. Eighteen major rivers and many perennial streams drain these low-lying areas. The

coastline is flat and swampy, with many lagoons, especially in the northern and central parts of the country. Westward from the northern coastal areas, the terrain changes from mangrove swamp to tropical pine savanna and hardwood forest.

The interlocking networks of rivers, creeks, and lagoons have played a key role in the historical geography of Belize. The river valleys possess fertile alluvial soils and have supported considerable cultivation and human settlement. It is estimated that at the peak of the Mayan Era (9th Century CE) over 3 million people lived in Belize, supported by local agriculture of which there is visible archeological evidence in the Belize River plain.

Belize has a tropical climate with pronounced wet and dry seasons, although there are variations in regional weather patterns. Temperatures vary according to elevation, coastal proximity, and the moderating effects of the northeast trade winds off the Caribbean. Average temperatures in the coastal regions range from 24°C in January to 31°C in July. Temperatures are slightly higher inland, except for the southern highland plateaus. Overall, the seasons are marked more by differences in humidity and rainfall than in temperature.

Average rainfall varies considerably, ranging from 1300mm to 1500mm in the north and west to 4,000mm to 4,500mm in the extreme south. Seasonal differences in rainfall are greatest in the northern and central regions of the country where, between January and May, fewer than 100mm of average rain falls each month. A shorter, less rainy period, known locally as the "little dry," usually occurs in August.

Belize is at the western end of what is known as the Caribbean Hurricane Belt. Accordingly, the Cayo and Orange Walk districts of Belize are each subject to an annual cyclone event risk of 1 in 9.

The above topographical and climatic characteristics have led Belize to have three main agricultural production zones (below) and two distinct weather seasons:

North / Corozal & Orange Walk: Sugarcane, Papayas, Agronomic Crops

Central / Cayo: Citrus, Agronomic Crops, Sugarcane

Southern / Stann Creek & Toledo: Bananas, Citrus, Cacao

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dry?	Dry Season				Wet Season					Wet?	Dry?
Grow	Plant				Grow						
Grow	Harvest				Grow						
Work?	Land Work				Wet Season					Wet?	Work?

1.2. Belize Agriculture Opportunity: Belize Agriculture Production today

Belize's main agricultural production is currently centered on the following products that are the country's main sources of agricultural exports, listed by order of export value:

- Sugar
- Citrus (almost entirely for juice concentrate)
- Bananas
- Tropical Fruit & Cacao (limited production in the south)

Belize also has significant agricultural production supplying domestic consumption (and limited exports), principally in the following categories:

- Corn (estimates of 2018 exports are significantly less than 1 million bushels)
- Rice (100% for domestic consumption due to a protected domestic market)
- Cattle, Hogs and Poultry (very limited quantities of poultry are currently exported)
- Market Vegetables (none are grown on an export scale)

1.2.1. Belize Agriculture Opportunity: Domestic Market Analysis

Agriculture represented some 10% of 2018 GDP (CIA Fact Book) and was the largest single economic area outside of the very broad "services" area. No detailed data are available regarding the breakdown of the domestic agricultural market.

1.2.2. Belize Agriculture Opportunity: Export Market Analysis

Belize's 2018 identifiable agricultural exports were estimated to be ~ \$133 million and represented ~ 70% of total 2018 visible trade exports of \$193 million. The leading agricultural export categories were:

- Sugar & Molasses: \$ 56 million
- Bananas: \$ 37 million
- Citrus Juices: \$ 28 million

Belize's largest export market is the United Kingdom, followed by the United States.

1.3. Belize Agriculture: Opportunity for large scale farming

The agriculture opportunity in Belize consists of starting with large tracts of un-cleared land (typically 400 to 2,000-hectare parcels) that are then properly developed for modern farming, and where the application of highly mechanized US farming techniques and large scale automated irrigation, combined with improved management practices and economies of scale, generate consistently higher yields with lower unit input costs. When agronomic

crops (corn, beans, etc.) are sold into the existing strong regional markets, or plantation crops (sugar, citrus, and bananas) are sold into global markets, significantly higher returns per acre might then be achieved when compared with returns in other more developed agricultural economies such as North America.

1.3.1. Land availability and cost

The optimum production areas in Belize from a soil and climate viewpoint for agronomic crops are located in the Cayo, Orange Walk, and Corozal districts; the first two would typically allow for good access via the Price and Northern highways to Guatemala, El Salvador, and Honduras, and via seaborne freight to the CARICOM region and other export markets. Prime undeveloped land in the Cayo and Orange Walk districts that has been successfully tested for soil quality and subsurface water availability (or that has river access) can currently be acquired at a cost of approximately \$2,500 to \$3,000/hectare, depending on its proximity to roads.

The budget for bringing land into full production would require, in addition to the original land acquisition cost, a further development budget that would range from \$1,500 to \$2,000 per hectare, and would cover areas such as:

- Land clearing and grading
- Installation of an open and sub-soil drainage network
- Construction of an all-weather road network throughout the property
- Drilling of back-up production water wells and pumping system installation
- Installation of pivot (or linear if better suited to site specific topography) automated irrigation systems
- Security system installation and fencing (latter where applicable)

1.3.2. Water availability and cost

Automated large-scale irrigation can provide significant strategic and financial advantages, which include:

- Improved timing of planting in the “pre-wet season” planting window
- Improved yields through better plant moisture management
- Reduced storm/hurricane risk exposure through earlier harvest (Aug vs. Sep/Oct)
- Improved pricing/reduced storage requirements by being first to deliver harvest

Aquifers in Belize provide an excellent source of water in many districts; in many parts of the country significant water supplies can also be derived from the country’s extensive network of rivers and creeks. Belize aquifers that produce sufficient water for irrigation purposes are often fairly shallow, with water tables found 20-50 meters below ground level. Belize’s rainfall patterns, with some rain falling even during the drier months, also

make it possible to use retention ponds for water storage, subject to topography and cost analysis. These also have strong environmental qualities when engineered to allow for run-off capture and treatment; however, they are relatively expensive to construct.

1.3.3. Belize Agriculture Opportunity: Management and Labor

- Management

Belize has a limited supply of experienced farm management personnel, with very few farmers growing on farms exceeding ~400 hectares. Belize's Large-scale farming operations have traditionally focused on permanent crops such as citrus, sugar cane, and papayas. CSA views this as a core competitive advantage thanks to its ability to utilize the expertise of Abram Dyck and members of the Blue Creek agricultural community.

Belize clearly benefits from its skilled Mennonite labor, with demonstrated skills in the farming, construction, and mechanical engineering sectors. CSA considers that skilled workers from this community have and will continue to provide both the nucleus of a strong local management team and knowledgeable access to skilled labor throughout their network of Mennonite community relationships.

- Farm Labor

Belize has an adequate supply of unskilled and semi-skilled labor, whose fully burdened hourly wage cost is in the range of \$2.50 to \$4.50/hour; semi-skilled labor can operate basic farm equipment. Skilled labor, such as operators capable of managing a \$200,000 Combine Harvester, while scarcer, are available within the Mennonite Community. The latter typically costs between \$6.00 to \$9.00 per hour.

According to the most recent data available from the Belize Central Statistical Office, unemployment in the Cayo and Orange Walk districts has averaged 10%-12%.

1.3.4. Belize Agriculture Opportunity: Storage, Transport and Marketing

- Storage

Belize currently has quite limited storage infrastructure, and silo operators are able to command premium pricing for their facilities. It is an essential part of an agronomic business plan that an allowance be made for the construction and maintenance of local drying and storage facilities. These will be able to ensure that crops are in prime condition before being transferred for sale or longer-term storage in neighboring markets.

Sugarcane, on the other hand, requires no storage as the cane is moved directly from the mechanical harvester to the mill for immediate crushing.

- Transport

Transport between Belize's major production and export centers (e.g., Belize City/Big Creeks ports or Guatemala border) is via the main paved highway system, and typically requires a one to three-hour drive from most agricultural production centers. CSA has the advantage of being located directly on one of these highways (the George Price Highway) which gives it a competitive advantage, as many of Belize's production centers require a 5 to 20-mile drive over gravel roads to reach paved highways.

1.3.5. Belize Agriculture Opportunity: Optimum Crops

The following crops that appear to be best suited for production in Belize and for which there appears to be strong regional demand are:

- Sugar
- Citrus
- Banana
- Corn
- Edible beans (Pulses)
- Soybeans
- Rice

Specific crop selection is a function of detailed land analysis as well as market conditions at the time of annual crop plantings.