

Towards a Sustainable and Efficient State

The Development Agenda of Belize

Dougal Martin | Osmel Manzano
Editors



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Contents

Acknowledgments	v
Foreword	vii
Part I. BINDING CONSTRAINTS ON GROWTH.....	1
1. Diagnosing the Binding Constraints on Economic Growth	3
2. Anchoring Fiscal Policy for Growth	27
3. Challenges in the Financial Sector	47
Part II. CHALLENGES AND OPPORTUNITIES IN THE PRODUCTIVE SECTORS ..	59
4. Trade Sector: Exporting for Growth	61
5. Infrastructure: Current Situation and Challenges.....	79
6. Tourism: Achieving Balance for Sustainable Growth	95
7. Agricultural Sector: Assessment and Priorities for Public Investment and Policy	107
8. The Challenges of Managing the Oil Sector	133
Part III. ENVIRONMENTAL SUSTAINABILITY	149
9. Integrated Disaster Risk Management—Challenges and Opportunities	151
10. Towards Environmentally Sustainable Development	169

Part IV. SOCIAL DEVELOPMENT	189
11. Protecting the Poor and Vulnerable in a Tight Fiscal Environment	191
12. A Health Sector in Transition	201
13. Education Sector: Analysis and Options for a Policy Agenda	221
14. Indigenous Peoples: Cross-Cutting Concerns and Needs	235
15. The Growing Threat to Citizen Security	255

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Foreword

Towards a Sustainable and Efficient State: The Development Agenda of Belize represents a tangible expression of the Inter-American Development Bank's commitment to generating knowledge as part of its assistance to its borrowing member countries and illustrates the Bank's willingness to accompany Belize in its efforts to overcome its development challenges. This intellectual contribution to some of the most important issues regarding Belize's economic and social development is directed primarily at two audiences. First, it is directed at Belizean policymakers, offering a technical and internationally comparative perspective. Second, it is aimed at the wider public who are interested in Belize's economic and social development but who find little material available on the subject.

Based on its record over the last half-century, Belize could be considered a relative development success. In 1960, it was the second-poorest country in Central America; now it is among the "top-tier" countries, with a gross domestic product per capita behind only that of Costa Rica and Panama. However, economic growth and social progress have slowed over the last 10 years. Regaining earlier dynamism, improving social conditions, and reducing poverty, and at the same time preserving its rich but fragile environmental endowment, therefore constitute important development challenges for Belize.

The job of policymakers in grappling simultaneously with an array of complex challenges is never easy. And it is not made any easier when policy advisors proffer long, unprioritized laundry lists of policy reforms that a government should undertake. This book strives to err in the opposite direction and offer policymakers an intellectual framework, called the "Growth Diagnostics Methodology,"¹ for thinking about how to prioritize development challenges.

While necessarily selective, this book therefore covers a number of development topics of interest and relevance to Belize. Although many of the topics are seemingly disparate, the book strives for consistency and coherence in order to enhance its value to policymakers. Above all, it seeks to contribute to and stimulate a dialogue on Belize's development challenges, in the hope that *Towards a Sustainable and Efficient State: The Development Agenda of Belize* will become a cornerstone in increased interest and research on policy options for Belize.

—Gina Montiel
General Manager
Country Department of Central America, Mexico, Panama and the Dominican Republic

¹ R. Hausmann, D. Rodrik, and A. Velasco, "Growth Diagnostics" (Center for International Development, Harvard University, Cambridge, Massachusetts, 2004, unpublished).

Part I

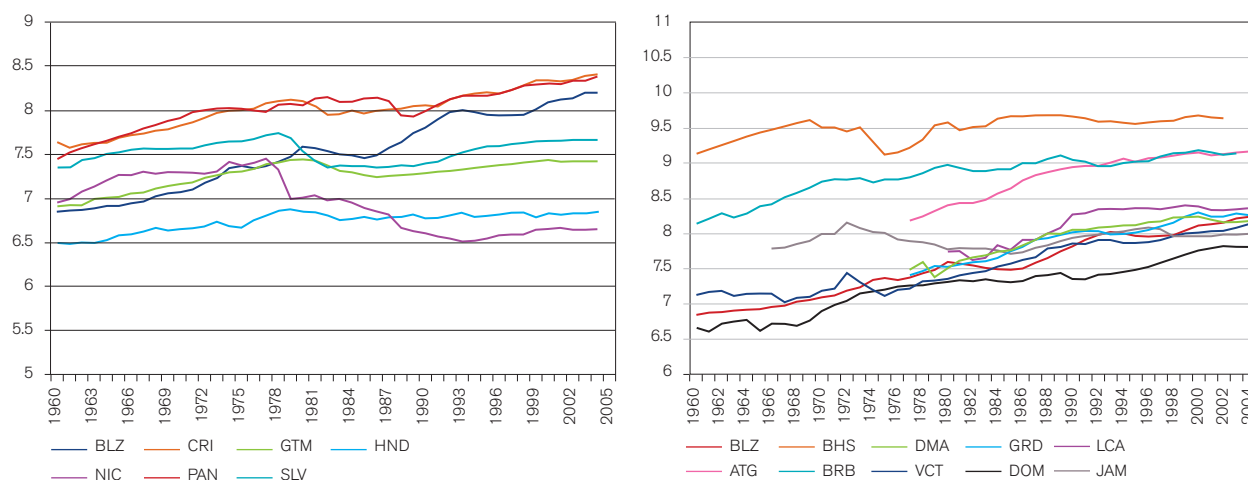
Binding Constraints on Growth

Diagnosing the Binding Constraints on Economic Growth

1.1 Introduction

Belize's long-term growth performance has been comparatively good.¹ It is not clear what comparator group is relevant, given Belize's status as both a Caribbean and a Central American country. Compared with its Central American counterparts, Belize has been a growth star. In 1960, it was the second-poorest country in the region; now it is among the "top tier" countries, with gross domestic product (GDP) per capita (Figure 1.1) near that of Costa Rica and Panama. Moreover, much of this growth was achieved after independence. Among its Caribbean peers, however, Belize's performance has been average, and it has not been able to close the gap with the better-performing economies in the region. And since 2004, economic growth has been sluggish, barely above the rate of population growth, implying that reactivating economic growth is a central development challenge for the country.

FIGURE 1.1. GDP PER CAPITA
(logs, 2000 US\$)



Source: World Bank, *World Development Indicators*.

Note: ATG = Antigua and Barbuda, BEL = Belize, BHS = The Bahamas, BRB = Barbados, CRI = Costa Rica, DMA = Dominica, DOM = Dominican Republic, GRD = Grenada, GTM = Guatemala, HND = Honduras, JAM = Jamaica, LCA = St. Lucia, NIC = Nicaragua, PAN = Panama, SLV = El Salvador, VCT = St. Vincent and the Grenadines.

¹ The authors would like to thank the staff of the Belize Country Office for their assistance in the fact-finding mission to Belize on September 24–26, 2007, as well as all the government and private sector officials who were kind enough to share their time and offer their insights during that mission. They also thank Dougal Martin and Matthew Shearer for their participation in the mission, and Rodrigo Wagner for assistance in data collection and analysis.

1.2 The Growth Diagnostics Methodology

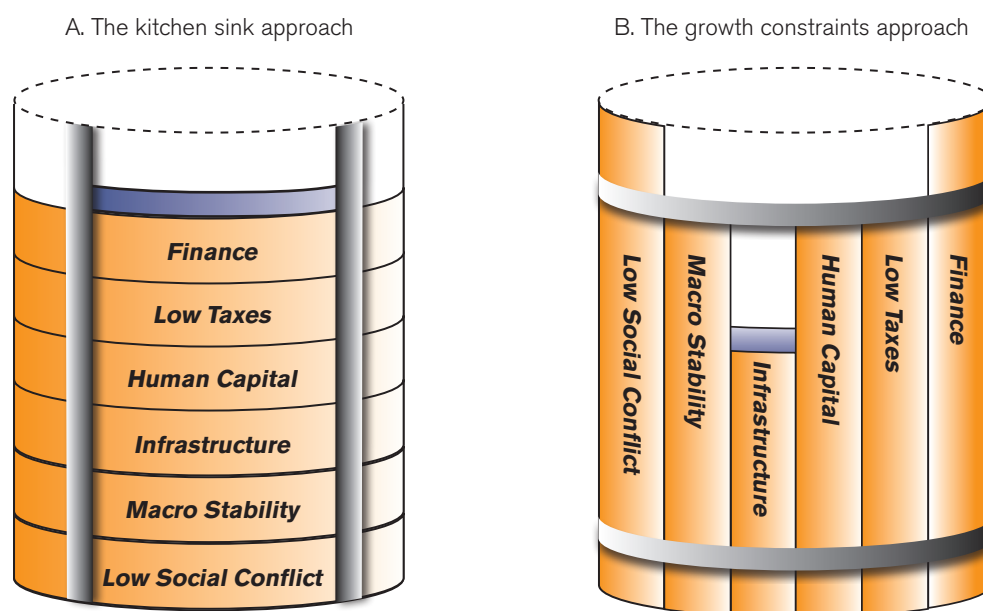
The Growth Diagnostics Methodology (GDM) offers policymakers a guide to policymaking that differs from traditional approaches to economic growth. Traditional approaches, characterized as “kitchen sink” or “laundry list” approaches, suggest an indiscriminate, across-the-board effort to reform policy. However, given that governments have limited political capital and administrative capacity, long lists of reforms and needed actions are not helpful. Moreover, attempting to solve all problems simultaneously may cause governments to dissipate their efforts resolving problems that actually turn out to have little impact on growth. The GDM argues that it makes sense to first identify the factor or factors that are most restrictive to economic growth and then concentrate public policy efforts on resolving that restriction, providing policymakers with the “biggest bang for the buck.”

A second characteristic of the GDM is that it provides country-specific diagnoses. In contrast to the traditional approach of basing recommendations on policies that have been found to be conducive to growth in “the average country,” the GDM posits that the binding constraint on growth varies from country to country and over time.

Figure 1.2 illustrates in a very intuitive way one of the fundamental ideas behind the GDM: factors that may contribute to the growth of an economy are not necessarily perfect substitutes. Panel A of the figure presents a world in which growth-supporting factors (represented by the horizontal planks in the barrel) are perfect substitutes. Which of all these factors that contribute to growth should be the focus of public policies? If the world is like the barrel in panel A, the question is irrelevant. The capacity of the barrel (or economic growth) is simply the sum of the height of all the horizontal planks and will increase no matter which of the planks of public policy are improved. Policy improvements in any of the areas—or all of them at the same time—will bring similar results in terms of economic growth. However, in the real world, the different elements that contribute to growth are not perfect substitutes. If the growth of a plant is constrained by a lack of nutrients, adding more sun or more water will not compensate for the lack of nutrients and boost its growth. Consequently, it is important to be able to identify which constraints on growth are most binding.

The barrel in panel B of the figure presents a different world. In this case, how much the barrel will hold is determined by the shortest plank (in the example of this figure, the shortest plank is

FIGURE 1.2. A COMPARISON OF CONCEPTUAL APPROACHES TO ECONOMIC GROWTH



Source: Hausmann, Klinger, and Wagner (2008). © Rodrigo Wagner, 2006.

infrastructure). Although there is no doubt that the level of human capital could improve, in this example improving the level of human capital is useless, unless infrastructure is developed first. The true constraint that is holding back growth (or the capacity of the barrel) is infrastructure, and that should be the focus of public policy in the short term. The real world may lie between the two extremes represented by the barrels in panels A and B, and there may be more than one constraint that restricts growth at the same time.

In order to assist the analytical process and identification of the binding constraints on growth, Hausmann, Rodrik, and Velasco (2004) use a decision tree (Figure 1.3) that explores all the factors that could potentially cause low levels of investment and, hence, weak economic growth. It is possible that weak growth is caused by inefficient investment rather than low levels of investment (Agosin, Fernández-Arias, and Jaramillo 2009; Felipe and Usui 2008). However, in the case of Belize weak growth is clearly associated with a low investment rate.

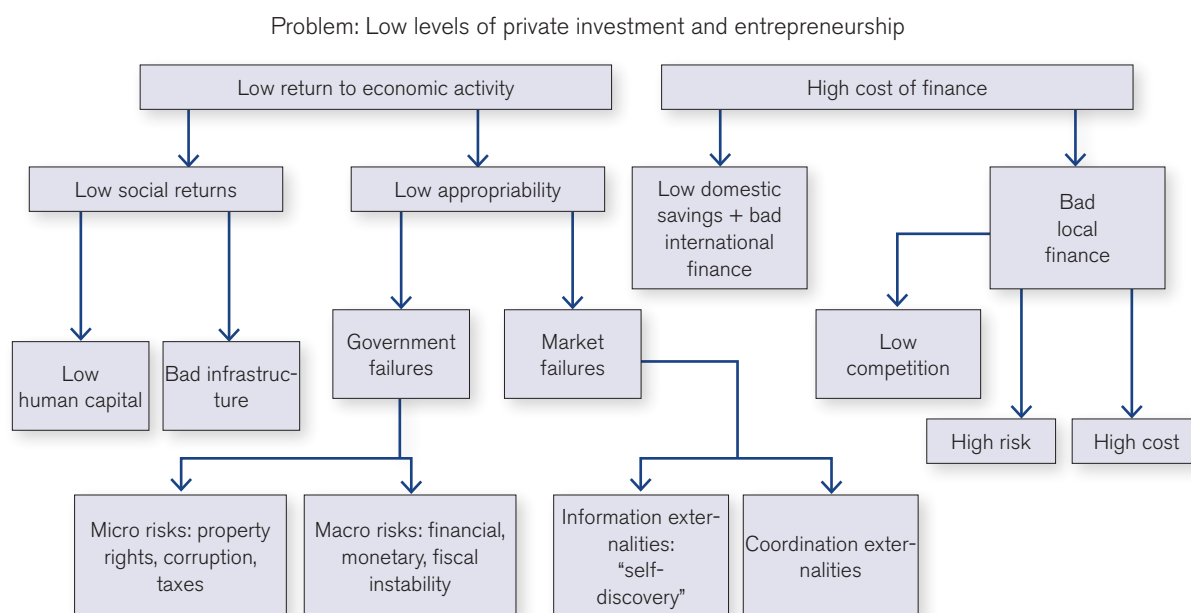
The decision tree first divides into two general categories: does the country face low returns to domestic private investment (the left-hand side), or does it suffer from a high cost of finance (right-hand side)? This division is based on the condi-

tion that for an investment to take place, the rate of return must be higher than the rate of interest. If investment is low, this could be due either to low returns on private investment or to a high cost of finance.

If it is determined that the constraint is low returns to private investment, the left-hand branch of the tree explores various possible causes of low returns. The next decision point asks whether private returns are low because social returns are low, or whether social returns are high but private investors, for various reasons, are unable to appropriate them. If social returns are low, this could be due to an insufficiently trained labor force or to poor-quality infrastructure. If social returns are respectable, but private investors are unable to appropriate them, the problem may be due to government failures such as macroeconomic instability, insecure property rights, excessive taxation, or corruption, or the problem could stem from market failures related to different types of externalities or coordination failures.

On the other hand, if it is determined that the primary constraint is high-cost domestic finance or a lack of financing, the right-hand branch of the tree then explores whether the financing problem originates from inadequate external finance or problems related to domestic financing.

FIGURE 1.3. GROWTH DIAGNOSTIC DECISION TREE



Analysis of the different branches of the decision tree leads to several questions: How to identify the relevant branch? How to identify if a factor is one of the most binding constraints on growth? To make an accurate diagnosis, all available information should be considered so that nonbinding factors can be systematically discarded. A good starting point to determine whether a factor is a binding constraint is to investigate the “quantities” of certain factors, such as education coverage or credit to the private sector as a share of GDP. If the country compares favorably with other countries in a particular area, that area is probably not a binding constraint. By contrast, if the country compares unfavorably in an area, that is a signal that the area requires deeper examination.

If a factor is a binding constraint, the scarcity of that factor should also be reflected in “prices.” For example, if access to finance is a problem, that should be reflected in high interest rates. Similarly, if low education coverage is a binding constraint, the returns to investment in education (the value that the labor market places on an additional year of education) should be high, suggesting that the market is demanding a factor that is scarce.

If a constraint is binding, changes in the supply or availability of that factor should be reflected in significant changes in the rate of economic growth. If this is not the case, then the factor is not binding.

The behavior of agents in the economy can be another indication of whether a factor is binding. If a factor is scarce and a binding constraint, the private sector should be attempting to overcome or bypass that constraint. For example, in countries with an unreliable supply of electricity, companies and households often invest heavily in self-generation, even though this is more expensive than reliable electricity sector provision. Similarly, one would expect that industries that use a particular factor intensively would be absent or only poorly developed where that factor is scarce. To illustrate this point, Hausmann, Klinger, and Wagner (2008) use the metaphor of animals thriving in the Sahara Desert. In the Sahara, one can observe many camels but very few hippopotamuses. This observation about the relative balance between camels and hippopotamuses, combined with the fact that camels can thrive with little water while

hippopotamuses are intensive in water, suggests that the binding constraint on the presence and survival of animals in the Sahara is the availability of water.

In sum, the GDM involves testing and rejecting hypotheses rather than a search for rigorous “proof.” In this sense, a growth diagnostic is more like a civil suit than a criminal case, because it relies on “the preponderance of the evidence” rather than the criterion of “beyond all reasonable doubt.”

To apply the GDM to the specific case of Belize, it is important to start with a good description of the country’s growth process that not only provides a long-term view, but also highlights the fluctuations, since the fluctuations may be indicative of movements in the binding constraint.

1.3 Long-Term Growth Dynamics in Belize

The dynamics of output per capita in Belize since independence show marked periods of growth acceleration and recession (Figure 1.4). During the recession that lasted from independence until 1985, the growth rate averaged -2.2 percent per year. The country entered relatively sustained growth acceleration. From 1986 to 1993, output per capita increased by 7 percent per year on average. This acceleration was followed by a four-year economic contraction, from 1994 to 1998, with an average annual growth rate of -1.1 percent. The country entered a second growth acceleration in 1999, but it was weaker (average annual growth of 5 percent) and shorter than the first. By the end of 2003, output per capita had begun to fall, and during 2004–2008 the economy stagnated, with output growth barely keeping up with population growth. Output per capita declined by more than 4 percent in 2009 as a result of the global recession, and in the short term, returning to the average growth experienced in 2004–2008 would likely be considered a success.

The timing of these periods of boom and decline are very important for the country’s growth diagnostic. By definition, if a constraint is binding, then changes in the constraint should have some growth consequences. Conversely, it is difficult to

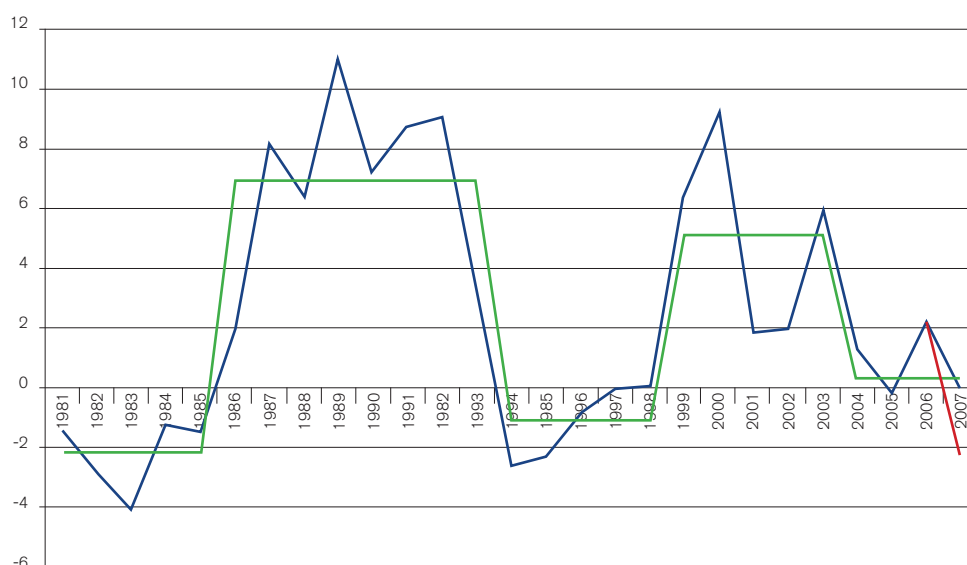
argue that a constraint is binding if it has changed markedly in the recent past with no growth effect. We therefore use the periods outlined in the previous paragraph to identify the binding constraints on Belize's growth.

What were the general events surrounding these periods of accelerated growth and decline? The recession at the time of independence was pre-

ceded by an unprecedented export boom that collapsed at the same time that independence was achieved. Figure 1.5 shows that in 1975 and 1980, merchandise exports per capita peaked at almost triple their current levels. Today, exports per capita are at a level similar to that in 1960.

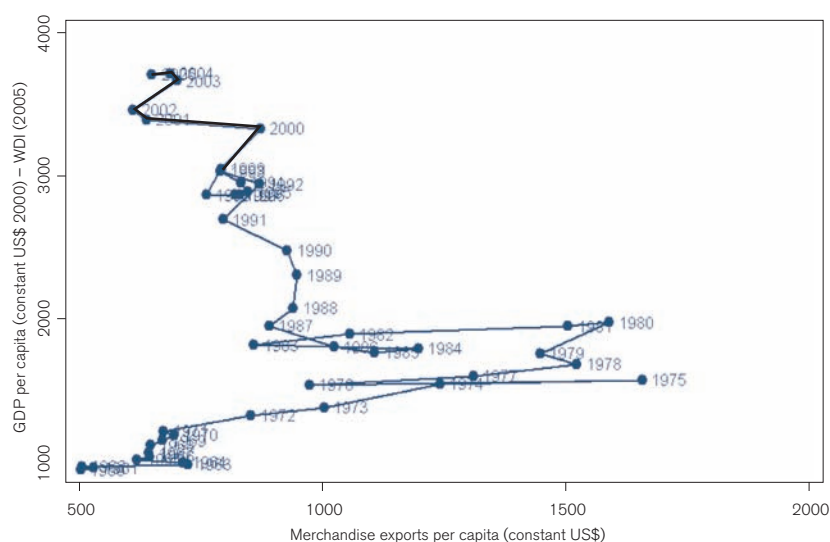
The booms and collapses in Belize's exports during the 1970s and early 1980s were concentrated

FIGURE 1.4. GROWTH RATE OF GDP PER CAPITA
(Including Post-Hurricane Dean Projection and Period Averages)



Sources: For 1981–2005, World Bank, *World Development Indicators*; for 2006, data from the government of Belize; for 2007, estimate from the government of Belize; and for 2007 incorporating the effects of Hurricane Dean (red), IDB (2007a).

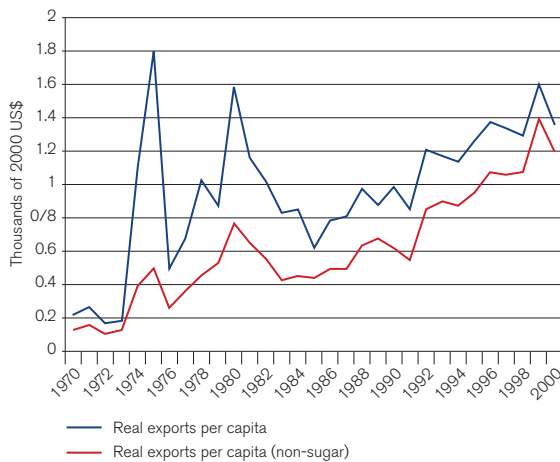
FIGURE 1.5. EXPORTS AND GDP PER CAPITA OVER TIME
Exports and GDP, Belize (WDI)



Source: World Bank, *World Development Indicators*.

in the sugar market and mainly due to fluctuations in international prices. The first recession can therefore be traced to the sugar collapse. Figure 1.6 shows that the nonsugar merchandise export basket has expanded since independence, although only to a small degree.

FIGURE 1.6. REAL EXPORTS PER CAPITA, INCLUDING NONSUGAR

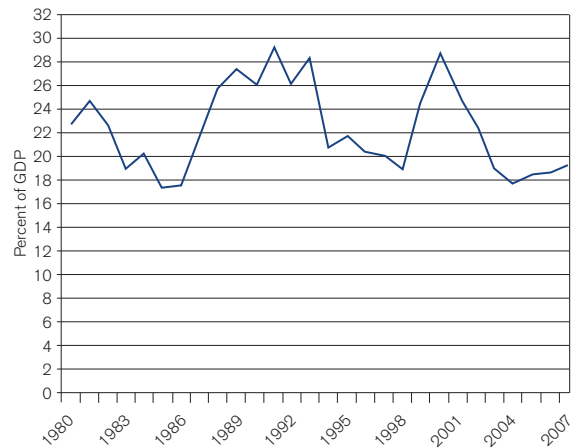


Source: Authors' calculations using Feenstra et al. (2005).

The first growth acceleration, from 1986 to 1993, has been attributed in part to the “discovery” of the tourism sector. Prior to this period, the tourism sector was virtually nonexistent in Belize. It has since become one of the economy’s largest sectors, representing approximately 20 percent of GDP and 25 percent of employment.² There was also an investment boom associated with the short-lived “economic citizenship” program.³ Investment during this period was more than 25 percent of GDP, as illustrated in Figure 1.7. Some of this investment was due to a boom in foreign direct investment (FDI), but the majority was domestically financed.

After 1990, however, the trend that ignited this growth acceleration reversed. FDI net inflows fell from a peak of 5.15 percent of GDP in 1989 to 1.6 percent of GDP in 1993 (World Bank, *World Development Indicators*), and the government increased investment to fill the gap. Capital expenditures as a percentage of GDP rose from

FIGURE 1.7. GROSS FIXED INVESTMENT
(percent of GDP)



Source: IDB based on Statistical Institute of Belize.

12.6 percent of GDP in 1990 to almost 19 percent by 1992. Government consumption also increased slightly, from 20.4 percent of GDP in 1990 to 21.8 percent in 1992, and government revenues fell from 31.2 percent of GDP in 1990 to 29 percent of GDP in 1992 (Central Bank of Belize 2007). As a result of ballooning current and capital expenditure along with falling revenues, the government quickly went from having a small overall budget surplus in 1990 to running a deficit of almost 8 percent of GDP by 1993. At the same time, exports fell from 38 to 35 percent of GDP, while imports grew from 56 to 62 percent of GDP, worsening the trade balance. The current account deteriorated from a surplus of 7 percent in 1990 to a deficit of 11 percent in 1993, leading to expanding debt and falling international reserves.

Although the private investment boom in 1986 and 1987 had slowed by 1990, growth continued on the back of expansions of government investment. But by 1993 this public spending binge could not be sustained, and the government instituted a home-grown adjustment program, cutting public investment significantly, from a peak of nearly 19 percent of GDP in 1992 to only 6 percent of GDP by 1996, at which point the overall budget returned to near balance. Reserve requirements were increased, which raised interest rates and tightened credit. After 1993, the fiscal, trade,

² Meeting with Rosella Zabaneh (President) and Andrew Godoy (Executive Director), Belize Trade Industry Association. Belize City, September 26, 2007.

³ Meeting with Joseph Waight, Financial Secretary, Ministry of Finance, Belmopan, September 24, 2007.

and current account deficits all began to close, and output per capita fell by an average of 1.1 percent for the following five years.

In many ways, the subsequent decade was déjà vu all over again: growth acceleration fueled by a public investment binge that was unsustainable, subsequently requiring adjustment and leading to a recession. In 1999, public investment jumped by 5 percent of GDP, and by 2000 it was well over double its 1998 level. In 2000, the current account deficit doubled, and the budget deficit tripled. Money was loose and trade deficit was expanding. By 2004, the government again had to institute a home-grown adjustment program, which initiated the current phase of economic stagnation.

However, there were also some important differences between the two accelerations. Gross national saving collapsed in the 1990s (see Figure 1.8). It had been approximately 28 percent of GDP since 1986, but between 1990 and 1999, it fell by two-thirds. This principally involved a collapse in private saving, which went from 15 percent of GDP in 1994 to 5 percent by 1998.

FIGURE 1.8. GROSS NATIONAL SAVING
(percent of GDP)

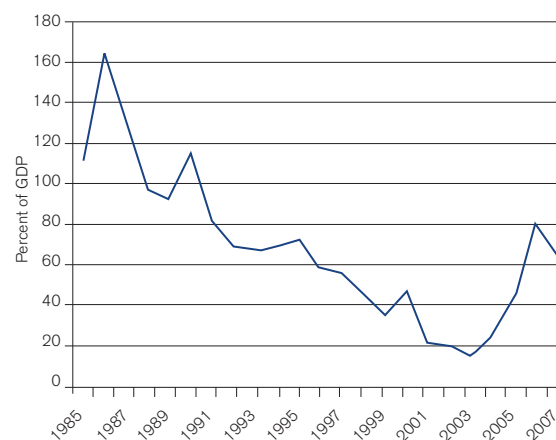


Source: IDB based on Statistical Institute of Belize.

The second boom in investment during the second growth acceleration was in the context of low national saving, making the resulting current account deficits much larger than those during the first boom. Government deficits were not domestically financed, unlike in the first investment

boom, as shown by the ratio of national savings to investment (see Figure 1.9). Savings were 102 percent of investment during the first growth acceleration, but fell below 30 percent during the second growth acceleration.

FIGURE 1.9. GROSS NATIONAL SAVINGS AS A PERCENTAGE OF INVESTMENT



Source: IDB based on Statistical Institute of Belize.

The 1999–2003 growth acceleration was driven by external borrowing. Public sector external debt tripled, from US\$300 million in 1999 to more than US\$900 million in 2003. Taxes were lowered, public investment increased, and state-owned enterprises provided inexpensive credit. At the same time, money was loosened, which further increased private sector credit (Central Bank of Belize 2007).

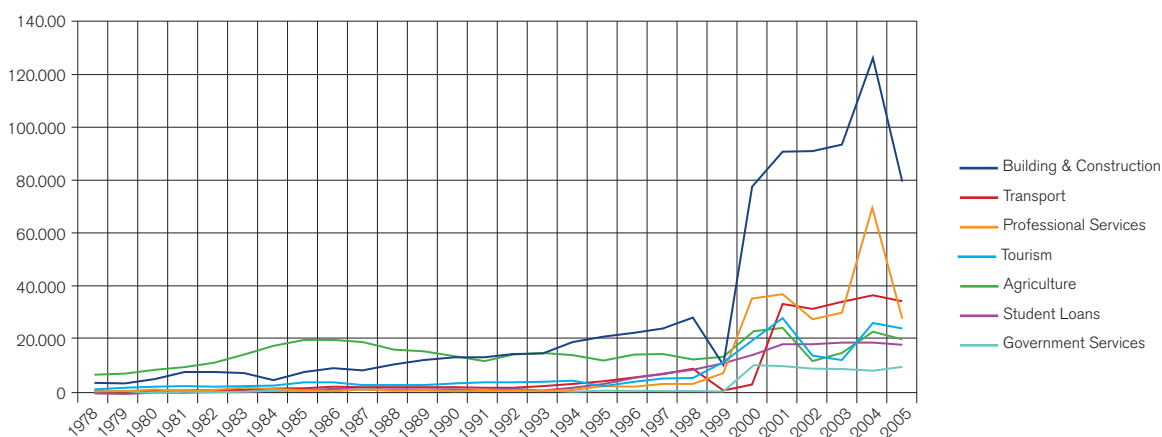
Much of the spending during this boom was not productive investment that would generate immediate accelerated growth that could maintain the acceleration. The Development Finance Corporation (DFC), a publicly owned finance institution, was a significant source of new investment (see Figure 1.10). The majority of its new lending was in building and construction, much of which was residential construction, along with some construction of schools.⁴

A significant proportion of these loans subsequently went into default (for example, 92 percent of the DFC's real estate lending; Nogaes 2006) and had to be assumed by the government.

⁴ Ibid.

FIGURE 1.10. DEVELOPMENT FINANCE CORPORATION LOAN PORTFOLIO, 1977–2006

(BZ\$ thousands)



Source: Nogales (2006).

There were important and costly cases of corruption as well (IMF 2006), and as a consequence the DFC was put into liquidation.

The current period of stagnation, from 2004 to the present, has occurred in the context of significant fiscal adjustment. Between 1999 and 2005, interest payments on external debt rose from 2 to 7.5 percent of GDP. To maintain the same overall budget deficit of –5.5 percent of GDP, the government had to slash public investment from 12.9 to 4.1 percent of GDP, a reduction of 8.8 percent.⁵ As detailed in IMF (2006) and IDB (2007a), this adjustment program has basically required a moratorium on public investment and infrastructure maintenance, as well as new hires and public sector wage increases. Public investment averaged 4.2 percent of GDP between 2005 and 2009, and the overall fiscal deficit was held to only 2.3 percent of GDP. The current account deficit narrowed sharply in 2006 and 2007, expanding only temporarily in 2008 as the result of a surge of foreign direct investment in tourism. Growth from 2004 to 2008 averaged only 3.5 percent, of which about 1 percentage point was attributable to the rapid growth of petroleum production following the discovery of commercial deposits in 2006. In 2009, GDP is estimated to have contracted by approximately 1 percent in the context of the global recession.

This synopsis of Belize's growth dynamics over the past two decades reveals that periods of

growth acceleration and collapse were tightly linked with booms in public spending, credit to the private sector, and deterioration in the current account. This signals that the binding constraint on growth is likely on the finance side of the Hausmann, Rodrik, and Velasco (2004) decision tree. In the remainder of the chapter, we first move down the decision tree, showing that problems of access to finance do indeed constitute the principal constraints on Belize's growth. We then provide evidence that other potential constraints are not binding and conclude with policy recommendations in light of the diagnostic.

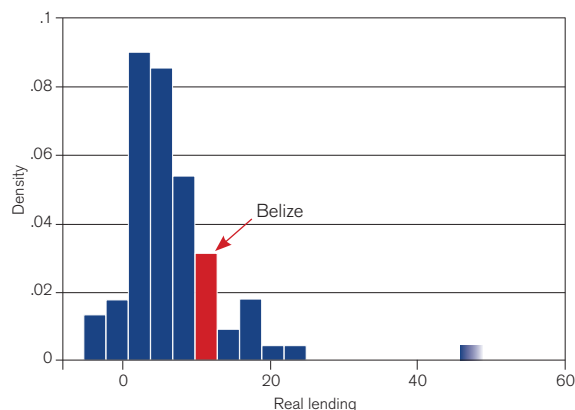
1.4 Growth Diagnostics

The growth diagnostics framework asks the question: Why is investment in Belize not higher? The framework begins by considering whether investment is low because of the high cost of finance or because of low appropriable returns. Low appropriable returns could in turn be due to appropriability problems, lack of complementary inputs, or coordination failure in the emergence of new activities.

1.4.1 Is It Bad Finance?

The interest rates charged on loans in Belize are quite high. Figure 1.11 shows that the rates are among the highest in the country's income group, even though Belize's currency has been pegged to the U.S. dollar at the same rate for more than 30

⁵ Of this reduction, 1 percent was a reclassification of current expenditure that was previously classified as investment.

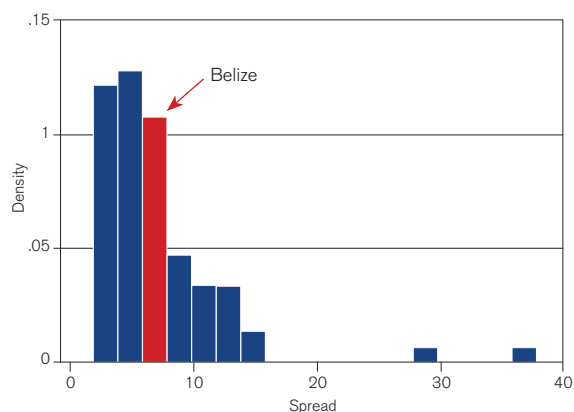
FIGURE 1.11. REAL LENDING RATES IN BELIZE'S INCOME BAND, 2005

Source: Economist Intelligence Unit.

Note: The real lending rate is calculated using the change in consumer prices. The histogram shows all countries with log per capita (purchasing power parity) equal to that of Belize ± 1 .

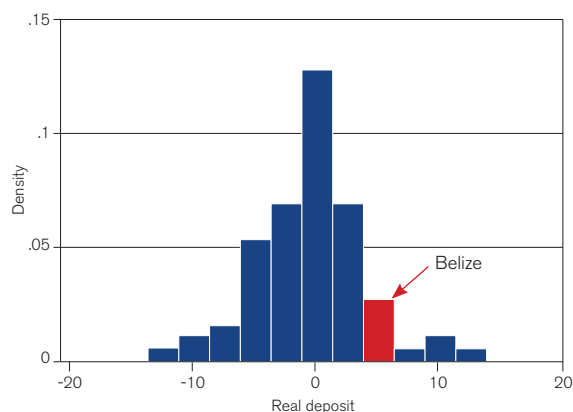
years, meaning there should be little exchange rate risk. The leading local bank reports that even its best corporate customers are charged 12 percent on loans, although inflation has not surpassed 4 percent in more than a decade. Belize is clearly a high-cost-of-finance country.

Lending rates could be high either because of poor financial intermediation or because of low savings. One way to distinguish between the two possibilities is through interest rate spreads: poor local financial intermediation would manifest itself in high operating costs in banks and correspondingly high spreads. If the problem is sav-

FIGURE 1.12. INTEREST RATE SPREADS IN BELIZE'S INCOME BAND, 2005

Source: Economist Intelligence Unit.

Note: The histogram shows all countries with log GDP per capita (purchasing power parity) equal to that of Belize ± 1 .

FIGURE 1.13. REAL DEPOSIT RATES IN BELIZE'S INCOME BAND, 2005

Source: Economist Intelligence Unit.

Note: The real deposit rate is calculated using the change in consumer prices. The histogram shows all countries with log GDP per capita (purchasing power parity) equal to that of Belize ± 1 .

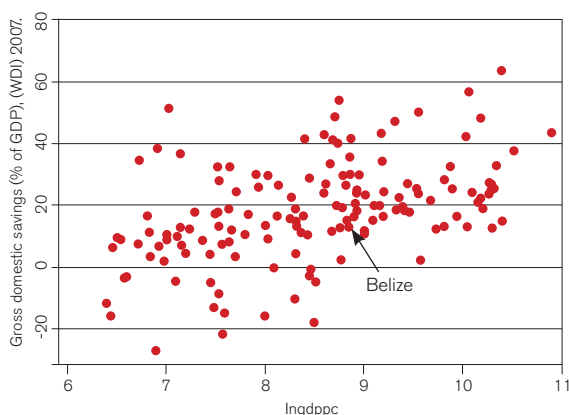
ings rather than intermediation, the deposit rate should be high and the spread low.

Both spreads and deposit rates are high in Belize, as shown in Figures 1.12 and 1.13. However, on the margin it seems that although spreads could be considered high but reasonable, the deposit rate is clearly very high, despite the fact that Belize has a substantial tax on financial intermediation through reserve requirements, which according to our estimate (see below) contributes a substantial portion to the spread. It is important to note, however, that International Monetary Fund (IMF) estimates suggest a lower contribution of reserve requirements, making poor financial intermediation more of a worry. On balance, although financial intermediation in Belize may be a constraint on growth, the principal source of the country's high cost of finance seems to be low savings.

As discussed above, aggregate national savings suffered a significant collapse in the early 1990s and have not recovered. Private savings were the main source of that collapse, going from 15 percent of GDP in 1994 to 5 percent in 1998 and -6.5 percent in 2002 (IMF 2006). They have since rebounded, and in 2005 reached 10 percent of GDP. Unfortunately, however, at the same time public savings have been wiped out by ballooning debt service payments, keeping aggregate savings low. Gross domestic savings in Belize (as a percentage of GDP) remain among the lowest in its income group (see Figure 1.14).

FIGURE 1.14. GROSS DOMESTIC SAVINGS VERSUS GDP PER CAPITA, 2005

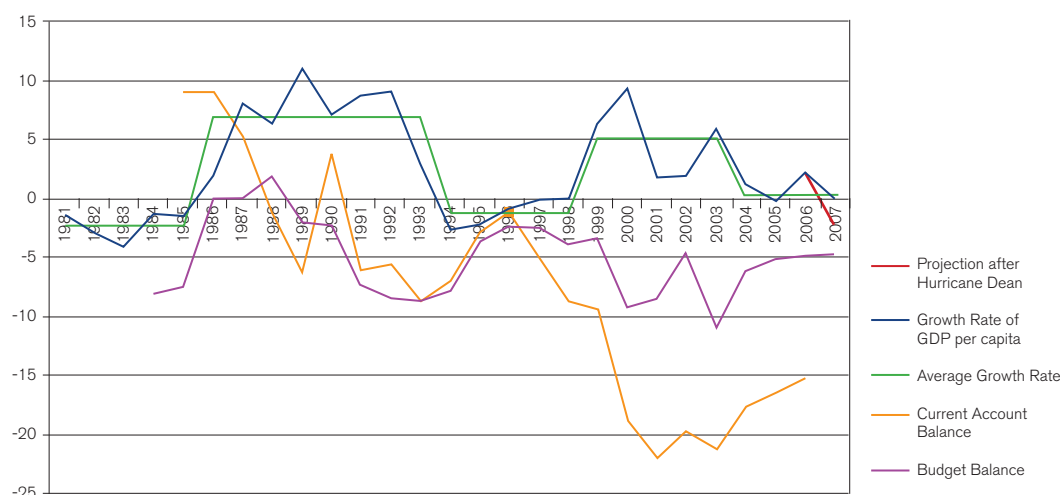
(logs)

Source: World Bank, *World Development Indicators*.

Access to external finance has become a major problem since the accumulation of public debt in the late 1990s. Belize had to renegotiate its debt in 2007 to avoid default. Debt sustainability analysis conducted prior to the renegotiation showed the level to be unsustainable (IMF 2006), but the renegotiation reduced the net present value of the debt by approximately 20 percent and changed the time profile with a step-up interest rate. The debt level is now considered sustainable, as long as the country maintains a prudent fiscal stance (IDB 2007a). Not surprisingly, the government is now virtually shut out of international financial markets and will be for the foreseeable future.

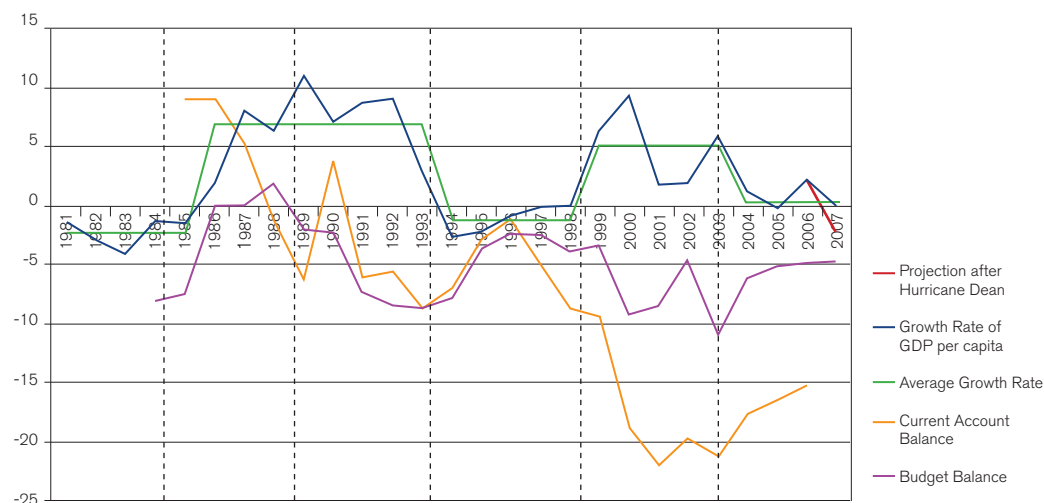
As discussed in the growth dynamics section, Belize's growth history has been one of Keynesian growth closely linked to fiscal spending and the country's external position. The current account consistently moves into deficit during periods of accelerated growth and then recovers during recessionary periods. The first growth acceleration from 1986 to 1993 was driven by FDI and private investment until there was a boom in public investment in the early 1990s. There was then a period of adjustment during the 1994–1998 recession when the public budget and current account returned to balance. Beginning in 1999, there was another public investment boom, and in the context of low savings and a lower tax take, an explosion in public debt. As discussed above and shown in Figure 1.15, it is clear that Belize suffers from lack of fiscal discipline.

The country's fiscal problems seem to be principally on the expenditure side, though there are also problems on the revenue side. The tax take is currently more than 23 percent of GDP, making Belize's tax system one of the most effective in Central America and the Caribbean (Jenkins and Kuo 2006). However, this is down from more than 30 percent in 1990 (Central Bank of Belize 2007). Tax revenues as a percentage of GDP fell significantly between 1990 and 1994, and they have remained at the same lower level ever since, exacerbating the budget deficit problem during the second spending boom.

FIGURE 1.15. GROWTH RATE OF GDP PER CAPITA, BUDGET BALANCE, AND THE CURRENT ACCOUNT

Sources: For 1981–2005, World Bank, *World Development Indicators*; for 2006, data from the government of Belize; for 2007, estimate from the government of Belize; and for 2007 incorporating the effects of Hurricane Dean (red), IDB (2007a).

FIGURE 1.16. GROWTH RATE OF GDP PER CAPITA AND POLITICAL CYCLES



Sources: For 1981–2005, World Bank, *World Development Indicators*; for 2006, data from the government of Belize; for 2007, estimate from the government of Belize; and for 2007 incorporating the effects of Hurricane Dean (red), IDB (2007a).

Note: Dotted lines indicate general election years.

There are also signals that the country's lack of fiscal discipline could be linked to political cycles (see Figure 1.16). Both growth accelerations were fueled and extended by unsustainable public investment. Interestingly, the final years of the two growth accelerations also happened to be election years. In fact, the three years when the government's budget balance reached a low point before reverting toward balance (1984, 1993, and 2003) were election years. Although public institutions are not found to be a constraint on growth in terms of reducing appropriability, public institutions governing public spending seem to be affecting growth through their impact on spending and debt accumulation.

In addition to low savings and poor fiscal discipline, the constraint on access to finance in Belize has another, related driver. Government borrowing may have damaged the private sector's access to external finance, but it has not crowded out domestic borrowing directly, because it is from abroad. However, government spending harms domestic finance through monetary policy. Belize has a fixed exchange rate regime. Besides capital controls, the country's only monetary policy tool is reserve requirements, which are dedicated to maintaining the exchange rate. Reserves accumulated to meet these

requirements are unremunerated and therefore are a direct and significant tax on financial intermediation, which exacerbates the cost-of-finance problem in a country with already high spreads and seemingly inefficient and uncompetitive financial intermediation. We estimate that just under half of the interest rate spread observed in Belize in 2006 was due to reserve requirements,⁶ although other estimates suggest a smaller contribution. Moreover, reserve requirements are lowered during periods of economic expansion and raised during contraction to relieve pressure on the exchange rate, making this tax strongly procyclical.

It is interesting to note that although reserve requirements are a significant and procyclical tax on intermediation, over the past seven years, while reserve requirements were rising, spreads were actually falling (see Table 1.1). The fact that financial institutions were able to absorb these increases in requirements and still reduce spreads suggests that they began from a position of quite low efficiency, although it also suggests that efficiency in the country's financial system has improved.

The binding constraint on growth in Belize is the high cost of finance, behind which are primarily poor budgeting institutions, causing a lack of fis-

⁶ This estimate has been made using the zero-profit condition for banks, which implies that the lending rate minus the deposit rate is equal to operating costs plus the product of the reserve ratio and the deposit rate, all divided by one minus the reserve ratio. Solving this equality for operating costs allows us to measure the contribution to the spread of operating costs versus the reserve ratio.

TABLE 1.1. CHANGES IN RESERVE REQUIREMENTS AND EVOLUTION OF BANK SPREAD

Date	Cash reserve ratio (percent)	Liquid asset ratio (percent)	Deposit (percent)	Lending (percent)	Spread (percent)
April 2000	3	24	5.4	16.2	10.8
September 2002	5	24	4.4	14.5	10.1
November 2002	6	24	4.6	14.4	9.8
April 2004	6	19 (classification change)	5.0	13.8	8.8
December 2004	7	20	5.2	14.0	8.8
May 2005	8	21	5.4	14.3	8.9
January 2006	9	22	5.8	14.3	8.5
September 2006	10	23	8.1	14.2	6.1

Source: Central Bank of Belize (2007).

cal discipline, low savings (in part due to the debt overhang), and taxation on financial intermediation, as well as inefficient and uncompetitive domestic financial intermediation. The appropriate policies to relax these constraints are to maintain fiscal sustainability and reverse the downward trend in the tax take to reduce incrementally the debt overhang, while creating budgeting institutions that are more insulated from the political cycle and do not allow unsustainable spending booms in the future. Other initiatives to improve efficiency in domestic financial intermediation and increase domestic savings should also be pursued. Although this would incrementally draw down the cost of capital, in the meantime the focus would have to be on investors that do not face the domestic interest rate, which requires different priorities in the country's industrial strategy, as well as creative ways to finance needed public goods. Before discussing these policy implications, however, we provide evidence that the other potential constraints on growth are not binding.

1.4.2 Is It Low Appropriability?

Investment could be restricted in Belize because investors do not expect to appropriate the high social returns that their investments generate. This could happen through a number of channels, such as direct taxes, indirect taxes through excessive regulation, price or exchange rate instability, or crime and corruption.

It is difficult to say that Belize is restricting investments through excessive direct taxation. Table 1.2 shows that Belize has one of the lower tax environments in the region.

In addition, Belize enjoys price stability and has for some time, thanks to the exchange rate peg. Inflation has not exceeded 7 percent for more than 20 years, and there are no inflation crises matching up with the growth dynamics (Figure 1.17).

Belize's currency has been pegged to the U.S. dollar at the same rate for more than 30 years. There is no evidence that the currency is overvalued, as can be seen in Figure 1.18, which shows the purchasing power parity adjustment. This assessment is shared by the IMF (2006). There was some fear that the exchange rate would have to depreciate after the country's debt accumulation, but this threat has been eliminated by the recent debt restructuring, at least for the near future (IMF 2006). Given that international reserves are at very low levels, there may be some continued worry about the long-term viability of the peg. Yet depreciation would only help investment in tourism and the agriculture export sector, which are key destinations for investment. Therefore, it is difficult to argue that the level or volatility of the exchange rate is restricting investment.

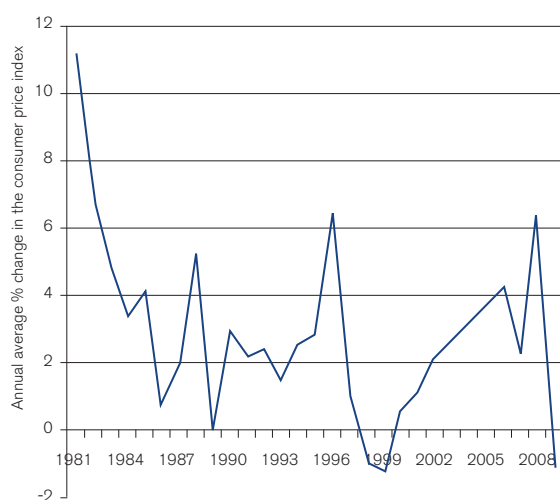
The regulatory environment does not seem to be harming appropriability in Belize, as the country does quite well in cross-country ratings. The World Bank's *Doing Business*, which collects actual data on times and costs rather than relying on opinion surveys, finds that Belize compares favorably to its neighbors in ease of doing business (Table 1.3). In addition, the World Bank Governance Indicators (Kaufmann, Kraay, and Mastruzzi 2005) do not suggest crime or expor-

TABLE 1.2. CORPORATE TAXES
(percent)

	Profit tax (%)	Labor tax and contributions (%)	Other taxes (%)	Total tax rate (% profit)
Costa Rica	10	30.1	42.8	83
Colombia	25.2	31.7	25.9	82.8
Dominican Republic	48	16.4	3.5	67.9
Nicaragua	27	19.7	19.7	66.4
Panama	18.2	21.5	12.6	52.4
Honduras	17.7	11	22.7	51.4
Seychelles	22.9	25.4	0.5	48.8
Antigua and Barbuda	31.1	9.8	7.6	48.5
Grenada	24.6	5.8	12.4	42.8
Guatemala	2.7	14.7	23.4	40.9
Mexico	5.3	30.2	1.6	37.1
Dominica	26.4	8.1	0.3	34.8
St. Vincent and the Grenadines	26.1	4.1	3.5	33.6
Belize	22	6.8	3	31.7
St. Lucia	24.1	5.8	1.6	31.5
El Salvador	15	11.6	0.9	27.4

Source: World Bank (2006).

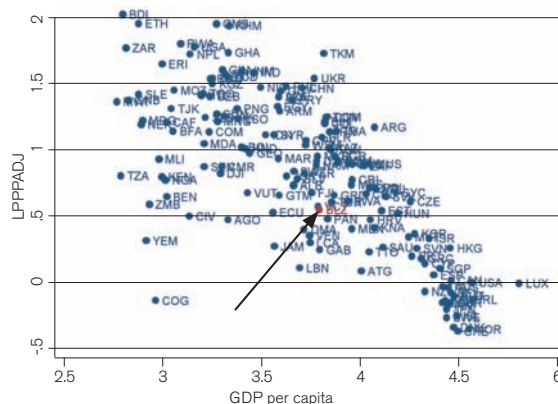
FIGURE 1.17. INFLATION



Source: Statistical Institute of Belize and International Monetary Fund, *International Financial Statistics*.

piration (Figure 1.19). Yet crime is a potential area for future concern. Violent crime has surged in Belize City, which the tourism industry cites as a long-term concern.⁷ But on balance the evidence suggests that concerns over appropriability are not restricting growth in Belize.

FIGURE 1.18. PURCHASING POWER PARITY ADJUSTMENT VERSUS GDP PER CAPITA, 2004



Source: World Bank, *World Development Indicators*.

Note: Belize is shown in red.

1.4.3 Is It Missing Complementary Factors of Production?

Another possibility is that low expected appropriate returns could be constraining investment in Belize not because of low appropriability, but in-

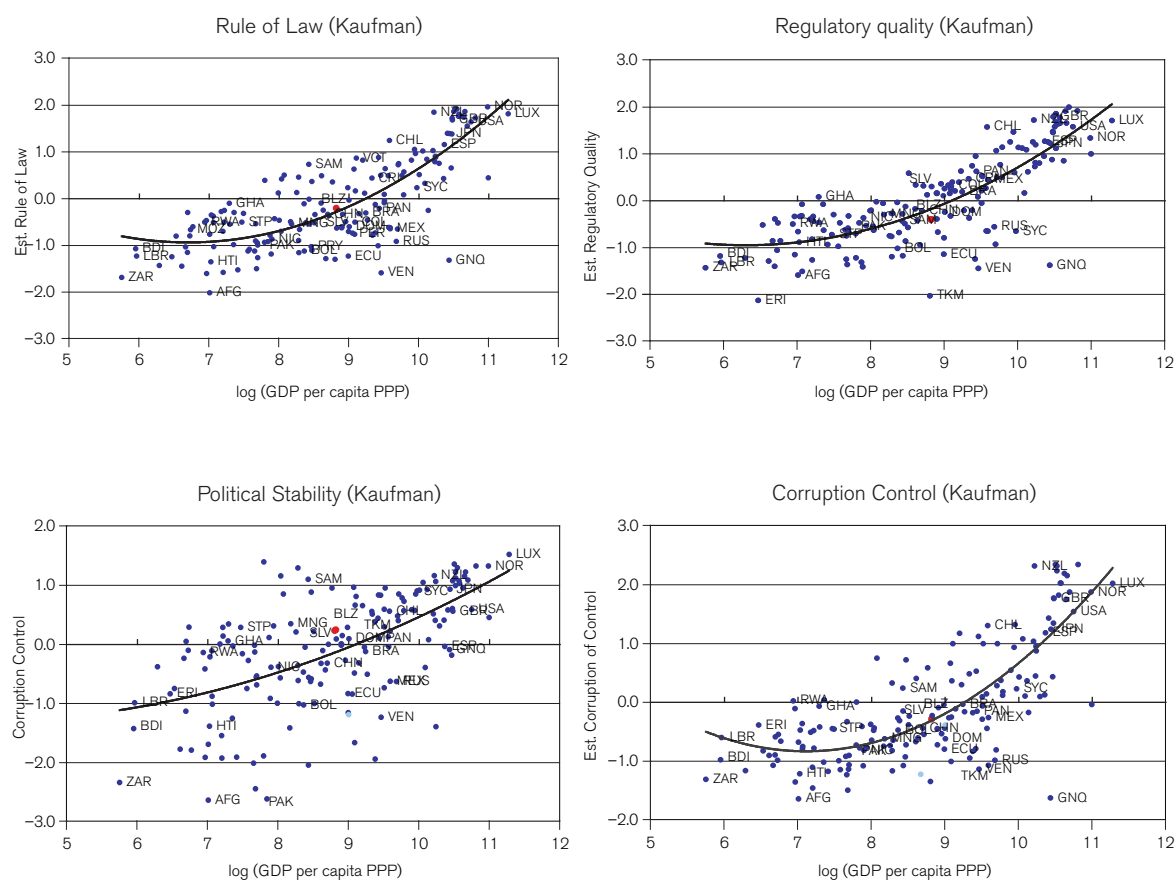
⁷ Meeting with Rosella Zabaneh (President) and Andrew Godoy (Executive Director), Belize Trade Industry Association. Belize City, September 26, 2007.

TABLE 1.3. EASE OF DOING BUSINESS RANKINGS, 2010

Latin American comparators		Small state comparators	
Colombia	37	St. Lucia	36
Mexico	51	Antigua and Barbuda	50
Panama	77	The Bahamas	68
Belize	80	St. Vincent and the Grenadines	70
El Salvador	84	Jamaica	75
Dominican Republic	86	Belize	80
Guatemala	110	Dominica	83
Nicaragua	117	Grenada	91
Costa Rica	121	Seychelles	111
Honduras	141		

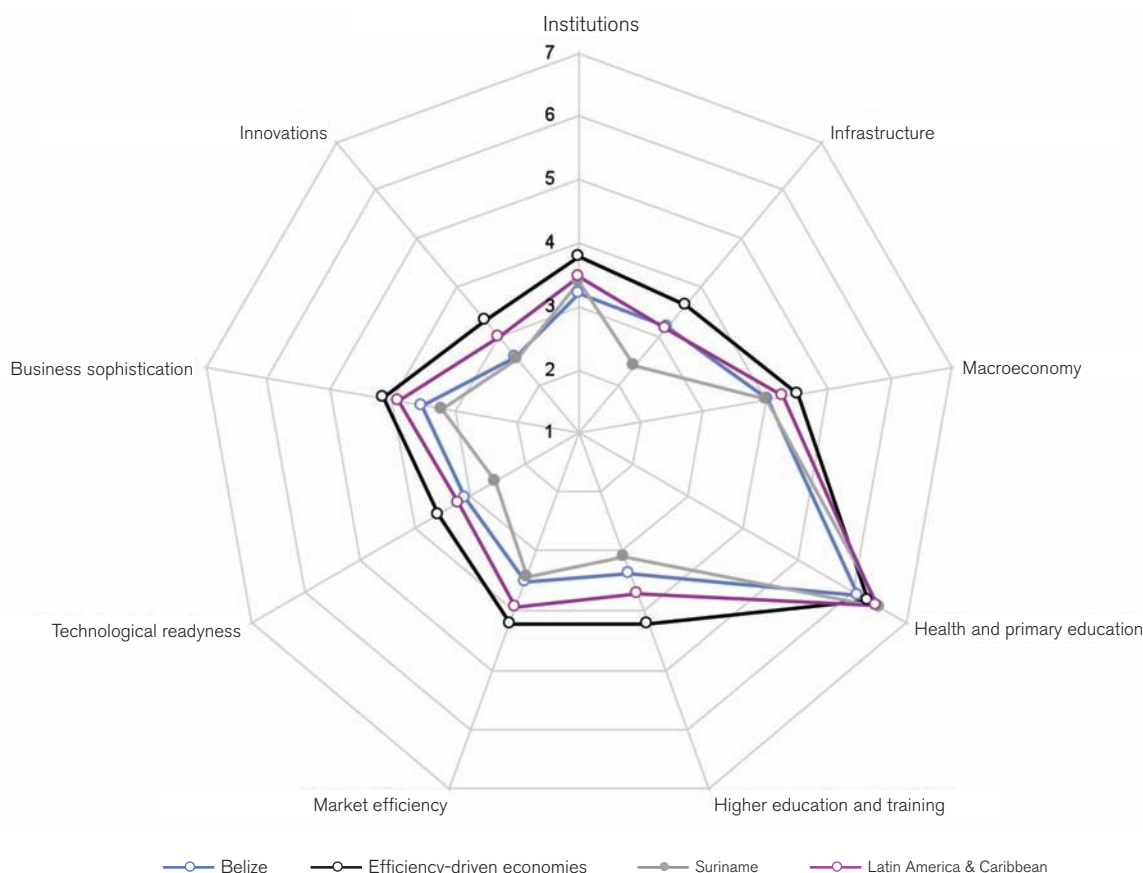
Source: World Bank (2010).

FIGURE 1.19. WORLD BANK GOVERNANCE INDICATORS, 2008



Source: World Bank.

FIGURE 1.20. GLOBAL COMPETITIVENESS REPORT, 2006



Source: Lopez-Claros et al. (2006).

stead because of low social returns to investment due to missing complementary factors of production, particularly infrastructure and education.

Infrastructure provision is inherently problematic in a tropical country with a very low population density, making Belize a structurally high-cost country for infrastructure and utilities.⁸ However, notwithstanding these difficulties, Belize rates quite high in the infrastructure category of the *Global Competitiveness Report* (Lopez-Claros et al. 2006). In fact, this is the only category in which Belize surpasses the average for Latin America and the Caribbean (see Figure 1.20).

According to comparative data in the *World Development Indicators*, telephone and road coverage in Belize is lower than in its neighbors, but this is to be expected given the country's low popula-

tion density (Figure 1.21). There are few, if any, reports by the private sector of congestion at shipping ports or road quality hampering output (IDB 2007b). In regard to information technology infrastructure, the country rates quite well. A new fiber-optic connection was brought online in 2001,⁹ and there has been recent growth in call centers. Ready Call, an international call center, opened in June 2005 in Belize City and has approximately 700 employees.¹⁰ There are also information technology firms (principally in the online gaming industry) in a techno park not far from Belize City.

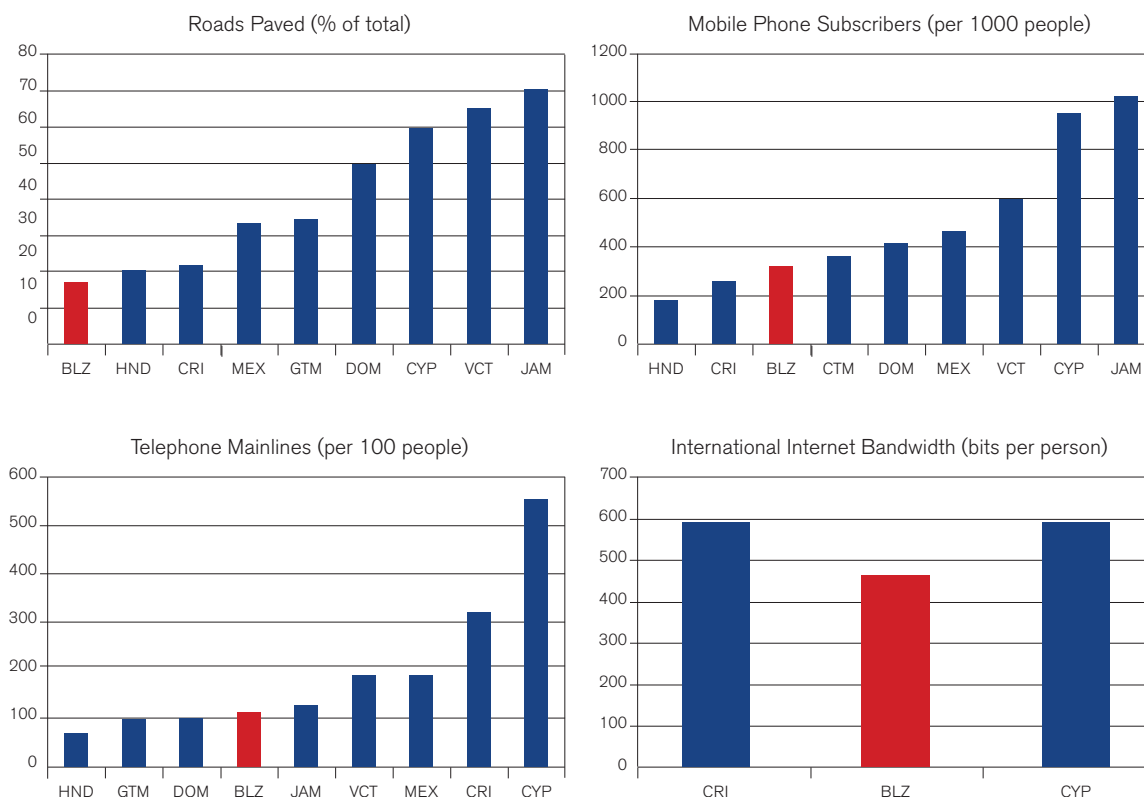
Given that there is growing investment in infrastructure-intensive industries, few reports of congestion, good international rankings, and a lack of infrastructure shocks coinciding with growth dynamics, it is difficult to argue that infrastruc-

⁸ Meeting with Roberto Young and Anna Rossington, Public Utilities Commission, Belize City, September 25, 2007.

⁹ Ibid.

¹⁰ "Ready Call Moves to Much Improved Offices," News 5 Belize, December 20, 2006.

FIGURE 1.21. WORLD BANK INFRASTRUCTURE INDICATORS



Source: World Bank, *World Development Indicators* (2005, except for data on paved roads, which are from 1999, the most recent year for which data are available).

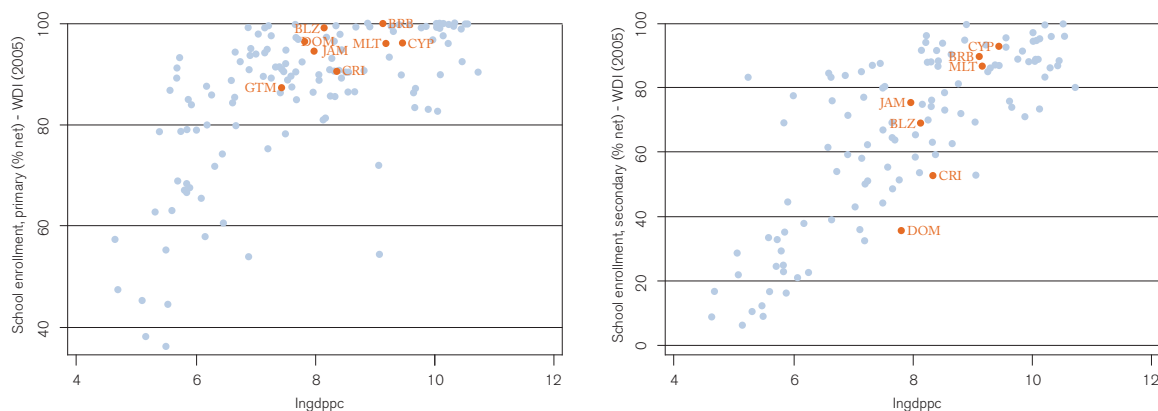
Note: According to the Public Utilities Commission, mobile phone penetration in urban areas is 700 per thousand and will increase markedly in urban areas now that Code Division Multiple Access service has been introduced (meeting with Roberto Young and Anna Rossington, Public Utilities Commission, Belize City, Belize, September 25, 2007).

ture is the binding constraint on Belize's growth. However, there are some concerns for the future. The fiscal adjustment required by ballooning interest payments on government debt has led the government to cut public investment by more than 7 percent of GDP. According to the Ministry of Finance, this was accomplished in part with a virtual suspension of road maintenance—a cause for concern given Belize's geography and weather conditions. The country's road network could quickly deteriorate and become a constraint on investment (IDB 2007b), particularly in agriculture, which is intensive in rural areas.

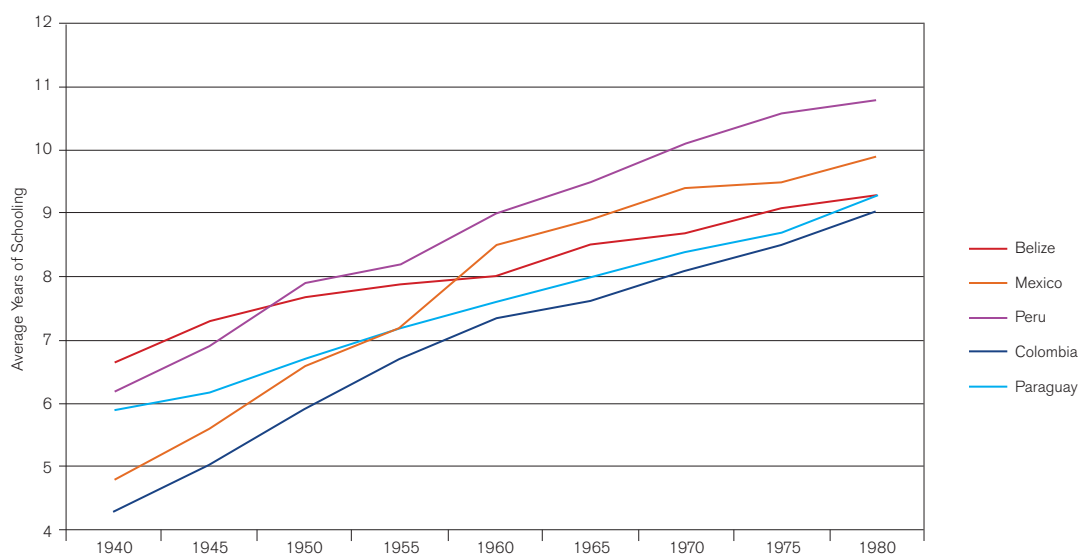
In addition, there are complaints about sanitation in Belize City, as well as rural airport infrastructure, which may negatively affect the tourism sector. Tourism in Belize is marketed as "Mother Nature's best kept secret." Therefore, sanitation problems could harm the country's image, particularly in the cruise sector, as cruises to the country dock in Belize City. Moreover, the rural airport

network is important for transporting international arrivals in Belize City to their ultimate destination, often in the cayes. Currently, the rural airports lack lighting that would allow for night flights, meaning that any international tourists who arrive in Belize City late in the day have to overnight there before getting to their ultimate destination, which hurts the country's competitiveness in tourism. Infrastructure problems thus may become a drag on future growth, largely as a result of the lack of funds for public investment.

Returns to investment can also be low as a result of insufficient provision of education to a country's workforce. However, on the whole it is difficult to make this argument in regard to Belize. The country enjoys relatively high enrollment rates in basic education (primary and secondary) (Figure 1.22). In addition, the stock of tertiary education in the labor force compares well with that in neighboring countries. As of 2004, 8.9 percent of Belize's labor force had completed tertiary edu-

FIGURE 1.22. ENROLLMENT RATES FOR PRIMARY AND SECONDARY SCHOOL

Source: World Bank, *World Development Indicators*.

FIGURE 1.23. AVERAGE YEARS OF SCHOOLING BY BIRTH COHORT

Source: Authors' calculations using household surveys.

Note: Cohorts are defined as those born in the year indicated or the four years prior.

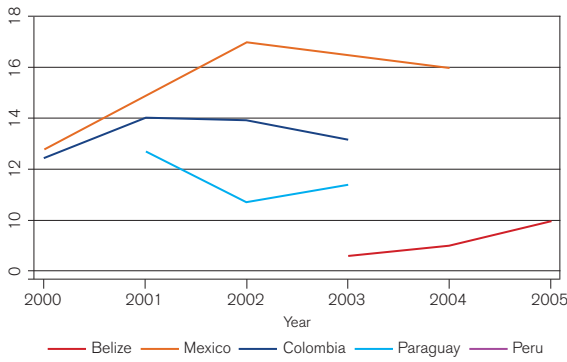
cation (authors' calculations), compared with 7.6 percent in Brazil, 8.6 percent in Chile, 11.6 percent in Colombia, 7.2 percent in Costa Rica, 7.0 percent in El Salvador, and 4.1 percent in Nicaragua (Auerbach, Genoni, and Pages 2007).

This relatively favorable situation with respect to education enrollment and the stock of tertiary education graduates is despite the fact that Belize has not been accumulating education at the same rate as other Latin American countries, as consideration of the average years of schooling by year-of-birth cohort reveals (Figure 1.23). Among those born in the 1940s, and therefore educated

in the 1950s, average years of education were higher in Belize than in Peru, Colombia, Mexico, and Paraguay. But by the 1990s, Peru, Mexico, and Paraguay had overtaken Belize on this indicator, with Colombia close behind.

The most telling indicator of insufficient education's constraining a country's economic growth is in the economic returns to education. If a country's labor force is demanding more education than the state is supplying, the price of educated workers will be high and rising. As Figure 1.24 shows, however, returns to education in Belize among urban males have been rising slightly, but they remain less

FIGURE 1.24. RETURNS TO EDUCATION, URBAN MALES



Source: Authors' calculations using national household surveys.

than 10 percent per year. This is much lower than Mexico's 16 percent, Colombia's 13.5 percent, and Paraguay's 11.5 percent.

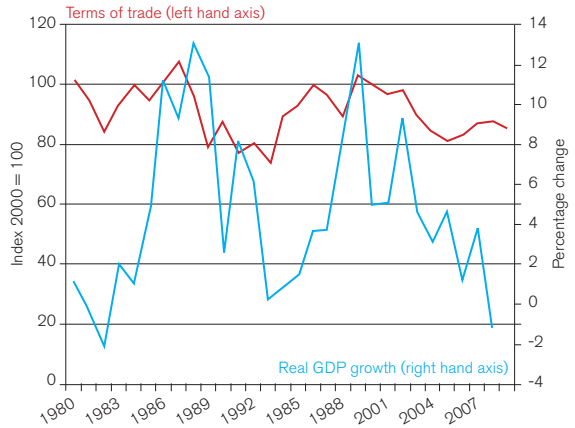
The slow accumulation of education in Belize may be a long-term growth concern for the country as well as an immediate social concern. Moreover, behind the aggregate tertiary education numbers, it is possible that some sectors are suffering a shortage of specific skills that they must import, partly as a result of specific vocational gaps in the provision of tertiary education. However, on balance the evidence shows that the provision of education is not currently a significant drag on the country's growth.

1.4.4 Is It Too Little Self-Discovery?

We have discarded low returns due to appropriability problems, as well as lack of complementary investments, as constraints on Belize's growth. However, another potential constraint is low social returns resulting from market failures in the discovery of new productive activities. It is possible that even in the presence of good infrastructure, education, and investment conditions, growth is constrained simply because of a lack of productive investment ideas and market failures that prevent their emergence.

One indicator of this constraint can be found in the terms of trade (Figure 1.25). If a country's growth dynamics are driven by price changes in primary export goods, then the lack of movement to new sectors when existing sectors face headwinds can be a signal of a lack of self-discovery (Hausmann, Rodriguez, and Wagner 2006). But in the case of Belize, there is no indication that this is taking

FIGURE 1.25. TERMS OF TRADE



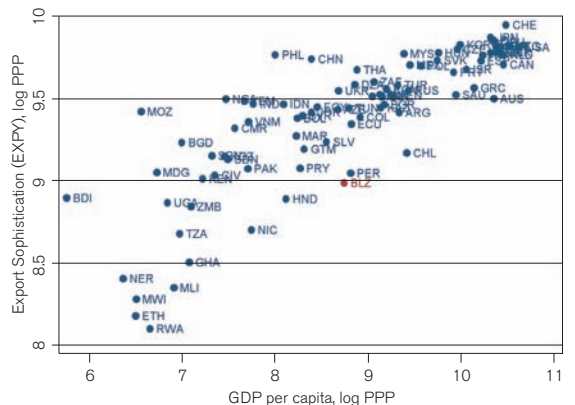
Source: IMF Belize Country Desk.

place, as the terms of trade have been only weakly correlated with changes in the growth rate. The terms of trade deteriorated sharply during the first growth acceleration after 1987, and then strengthened when the economy went from growth acceleration to recession in the mid-1990s.

The sophistication of a country's export basket is another signal that has important growth consequences (Hausmann, Hwang, and Rodrik 2007). If a country is suffering from a lack of growth due to insufficient new activities entering the export basket, this indicator should be low for the country's level of development. By contrast, if the country already has a stock of high-value export activities relative to its income level, it is difficult to argue that a lack of discovery is holding back growth.

In the case of Belize (shown in red in Figure 1.26), the export package has a low EXPY (see Haus-

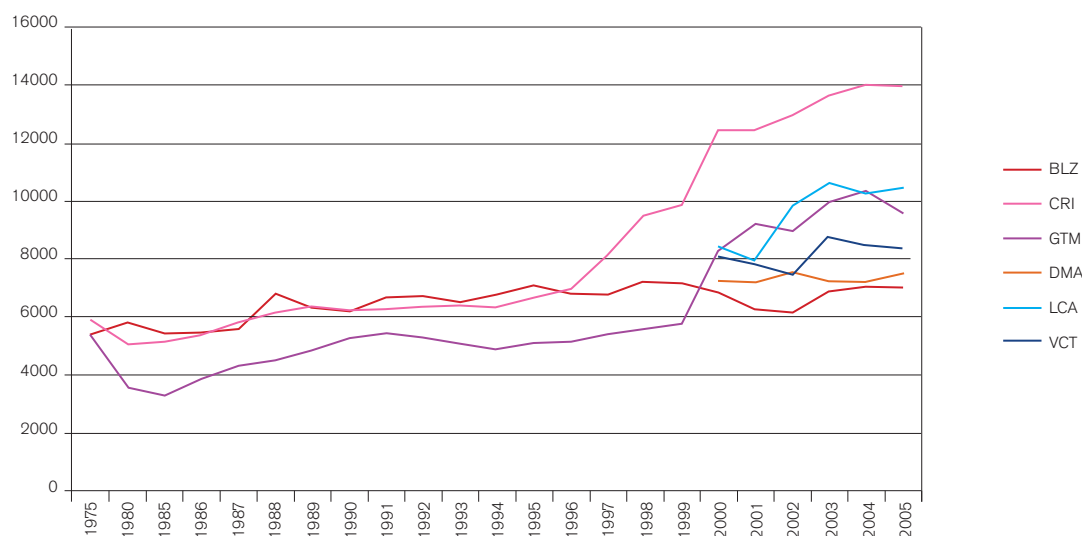
FIGURE 1.26. EXPORT SOPHISTICATION VERSUS GDP PER CAPITA, 2006



mann and Klinger, 2007), meaning the country exports goods typical of countries poorer than itself. However, this metric considers only merchandise exports and therefore is typically lower for countries that rely heavily on tourism, as is the case in Belize. Moreover, it is typically lower for smaller countries, meaning Belize should be

compared with other small states intensive in tourism. But even compared with other Central American and Caribbean countries, Belize continues to have a low level of export sophistication, in part because it has not kept pace with other countries in upgrading its export basket (see Figure 1.27).

FIGURE 1.27. EXPORT SOPHISTICATION (EXPY) OVER TIME

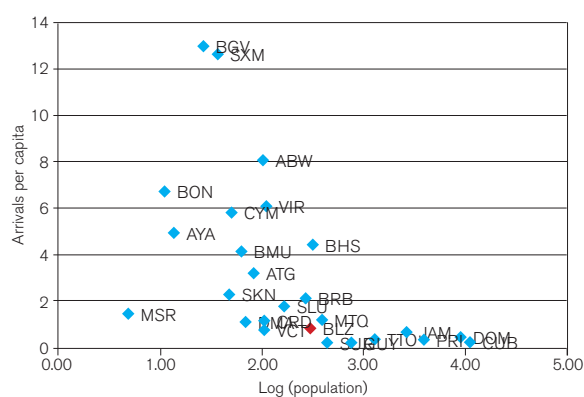


Source: Authors' calculations.

Although a high EXPY is a strong signal that lack of self-discovery is not the problem, the opposite is not necessarily true: a low EXPY does not necessarily imply that market failures are hindering growth. In the case of Belize, there appears to be significant potential for expanded investment in tourism and agriculture. These sectors are already the most important in Belize's productive structure, and therefore expansion of investment in them should not require significant coordination compared with what would be necessary in countries in which completely new activities have to be discovered.

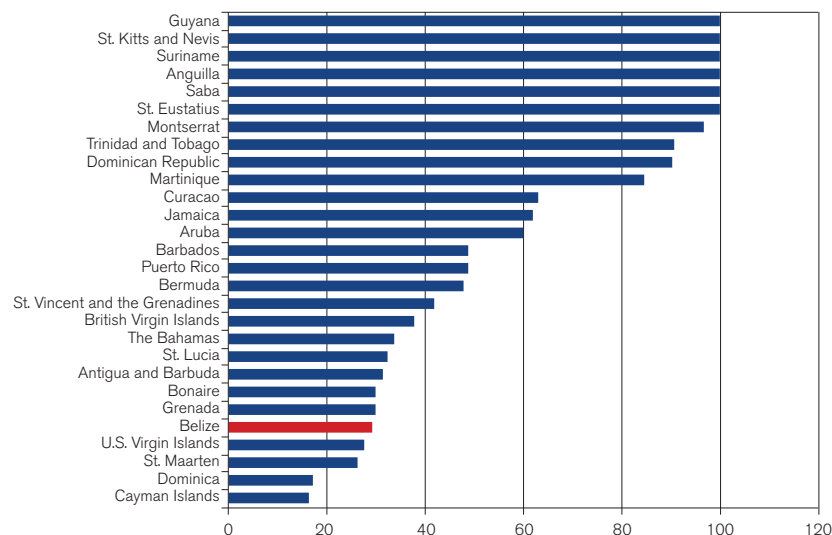
In the case of tourism, there is much room to grow, in spite of the impressive growth in the number of visitors and tourism expenditures in the last two decades or so. Overnight visitors per capita and as a percentage of overall arrivals in Belize are among the lowest in the Caribbean (see Figures 1.28 and 1.29). As a consequence, tourism expenditure per capita in Belize is very low (see Figure 1.30), and there remains tremendous room for the country to grow in the area of overnight tourism.

FIGURE 1.28. ARRIVALS PER CAPITA IN 2008 AND (LOG) POPULATION

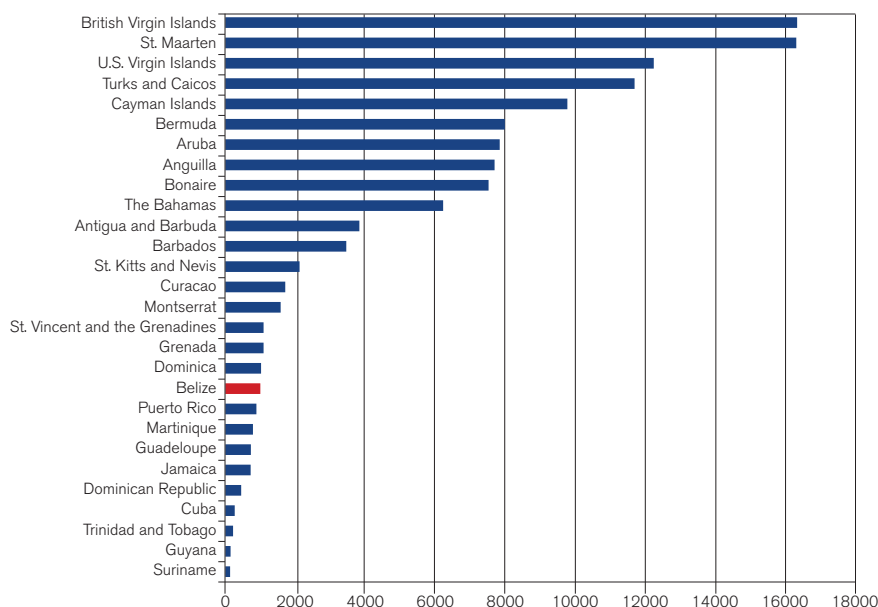


Source: Caribbean Tourism Organization (<http://www.onecaribbean.org/>).

In agriculture, there is also significant room for new investment and growth. Existing fruit production could be expanded, and there is much talk of other nontraditional products, such as black-eyed peas and kidney beans, as well as live-stock production. Foreign buyers complain of supply constraints from Belize in nontraditional

FIGURE 1.29. OVERNIGHTS AS A PERCENTAGE OF ARRIVALS IN 2008

Source: IDB based on Caribbean Tourism Organization (<http://www.onecaribbean.org/>).

FIGURE 1.30. TOURISM EXPENDITURE PER CAPITA, 2007 (US\$)

Source: IDB based on Caribbean Tourism Organization (<http://www.onecaribbean.org/>).

agricultural products, and domestic producers complain about the cost of credit rather than a lack of opportunities.¹¹ The country has an ample supply of unused land that is well-suited to agriculture. For example, the area devoted to sugarcane production accounts for less than 10 percent of high-suitability land and less than 5 percent of high- and medium-suitability land (authors' cal-

culations), the rest of which is not used for any crops. The Ministry of Agriculture reports that there are no limits on the country's agricultural frontier.

There seems to be no confusion in regard to what the high-potential sectors are for Belize. The 2001 "Belize Investment Guide" lists agriculture and

¹¹ Meeting with Messrs. J. Castellanos, Policy Analyst; Tait, Economist; and Garcia, Advisor, Export Strategy, Ministry of Agriculture, Belmopan, September 24, 2007.

agro-processing, tourism, mariculture, forestry-based industries, and tourism as high-potential sectors for investment (Chamber of Commerce and Industry 2001). In 2004, a commissioned study again identified agriculture, tourism, and furniture as high-potential sectors, along with financial services and information and communication technology (ICT) industries. Beltraide (Belize Trade and Investment Development Service) (2006) has released an export strategy identifying agriculture and agro-processing, environmental goods and services, tourism, ICT, and fisheries and aquaculture as high-potential sectors. Finally, the product space analysis included in the Appendix of Hausmann and Klinger (2007) identifies agriculture and agro-processing as well as aquaculture as both similar to the country's current structure of production (and hence easier industries for Belize to develop successfully) and of high value.

The problem does not seem to be identifying the high-potential sectors or coordinating their emergence, as there are already first movers in these industries. It is clear that Belize needs to upgrade its export basket, particularly in regard to nontraditional agriculture for export, given the low level of EXPY and eroding preferences for banana and sugar exports. But it seems that something other than coordination failure is preventing investment in the country. Anecdotal evidence reinforces this conclusion: Mennonite communities in Belize—which use the same infrastructure and workforce as the rest of the economy and operate under the same property rights, but have their own access to finance from abroad—have been investing heavily and expanding significantly in agriculture (Nogales 2006). Upgrading the export basket and achieving higher growth will depend on overcoming the financial constraints hindering investment. In the meantime, this will require finding sources of public and private investment that are not subject to the financing constraints of the government and the domestic private sector. This is taken up in the following section.

1.5 Conclusions and Policy Recommendations

The growth “syndrome” in Belize is that of a highly indebted state with a crippling debt overhang,

arising from periodic public spending binges. The lack of fiscal discipline this evidences (whose timing coincides with political cycles) has created the expected symptoms: repeated episodes of growth on the back of fiscal expansion with ballooning current account, budget, and trade deficits, which eventually require harsh adjustment and recession. The debt overhang has led to the virtual elimination of public investment, although investments in road maintenance, sanitation, crime reduction, and rural airport upgrading are key for achieving future investment growth. Deficit spending has also led to increases in reserve requirements and therefore greater taxation on financial intermediation. This, combined with very low aggregate savings and inefficiency in the financial system, has resulted in an extremely high cost of capital in Belize. Although high-potential sectors for investment exist and have been clearly identified, high interest rates on lending and insufficient access to international financial markets have prevented greater investment.

The short-term tactical plan to emerge from this debt overhang is a form of home-grown adjustment program. Additional recommendations for slowly decreasing the country's debt burden and recovering macroeconomic stability have also been laid out in IMF (2006) and IDB (2007a). It is important to stress that what is needed is not just short-term tactics to escape the debt overhang, but also a longer-term strategy to end the country's continuous cycles of public spending binges. It is critical to institutionalize fiscal discipline and better insulate it from political cycles. The timing of ballooning budget deficits and general elections is not likely to be a coincidence. There may be a political economy story wherein the beneficiaries of the public-investment-led Keynesian growth strategy followed over the past two decades are different from those who would benefit from a more sustainable, export-led growth pattern. The political economy of these two growth strategies in Belize deserves further study.

In addition to the need to follow the short-term adjustment program that has been established and institutionalize budgeting institutions, two interrelated issues deserve special mention: implicit tax expenditures and the declining tax take. As mentioned previously, the tax revenue-to-GDP ratio is lower today than it was in the early 1990s, and

the government has to reverse this trend. Jenkins and Kuo (2006) suggest some reforms to increase revenues. However, investment incentive schemes currently offered by the government pose a risk to future revenues. Anecdotal evidence suggests that the list of firms designated as export-processing zones, which are exempt from corporate income tax for 10 years, is rapidly growing. For example, Belize's shrimp industry was recently granted a highly attractive exemption from corporate income tax. Export-processing zones are also exempt from import duties, which are a primary source of government revenue. World Trade Organization rules will eventually require these firms to be taxed (Jenkins and Kuo 2006). Moreover, exempting the high-growth sector of the economy (new export-oriented production and tourism) from income tax is a surefire way to damage future government revenues. The government is attempting to tax the existing capital base but not new capital; at the same time, there is a lack of funds for maintenance and investment in complementary infrastructure, which is important to keep private returns high. This is a short-run scheme that is not sustainable. A better approach would be more uniform corporate tax treatment and investment promotion by ensuring high private returns to such investment, through the provision of the right complementary public goods and an attractive investment climate.

Moreover, the lack of government revenue is leading to continuous increases in reserve requirements to maintain the exchange rate while financing government deficits. This is increasing the cost of finance in an already financially constrained economy. The use of reserve requirements as a blunt and costly tool to maintain the exchange rate has few alternatives, and there is no appetite in the country for abandoning the currency peg. One alternative would be to remunerate banks for the money tied up by reserve requirements, but this is inconsistent with the overriding need for fiscal space. Instead, given the signals that poor financial intermediation is also a significant contributor to the high cost of finance, a key focus of policy should be to improve efficiency in the financial system.

These actions to reduce the debt overhang, institutionalize fiscal discipline, increase efficiency in financial intermediation, and reduce the cost of finance will gradually draw down the cost of

capital and pull Belize away from its "stop-and-go" Keynesian growth path. In the meantime, the government must also pursue a strategy of investment attraction and promotion targeting investors that are not subject to the high domestic interest rates. The current strategy focuses on promoting local investment through tax incentives: it is focused on the wrong investors and is using tools that only increase the cost of finance. Beltraide is gearing its efforts first toward promoting small and medium-sized enterprises, second toward promoting exports, and third toward encouraging foreign direct investment. As this strategy is inconsistent with the constraints facing the country, Beltraide should reorient its priorities and modest resources first and foremost toward attracting foreign direct investment.

However, with a staff of 15 (including administrators), Beltraide is short on resources. Given the country's fiscal constraints, any new resources would have to come from savings in other areas. The current system of investment promotion requires that every single investment in an outward-oriented industry be examined and approved by the cabinet (in the case of Beltraide's import duty exemptions) and a private sector board (in the case of export-processing zone status). This highly discretionary system has high transaction costs and leaves the door open to corruption and politically based spending. Instead, a uniform and stable business taxation system consistently applied without exceptions would free up the resources currently dedicated to this complex and ad hoc system, rebalance the uneven playing field for incumbents, and help reverse the downward trend in the tax take. Movements toward a unified tariff regime with a focus on excise taxes would also reduce the need for outward-oriented industries to seek ad hoc exemptions from import duties. These changes to the tax system are detailed in Jenkins and Kuo (2006), which addresses their revenue impact in detail. The point is that in addition to their positive fiscal benefit, the reduction in transaction costs generated by these changes will allow resources (mainly personnel) to be re-focused on attracting new investment from abroad.

Finally, the need for public investment in road maintenance, rural airport infrastructure, crime reduction, sanitation, and so on, combined with the need to maintain fiscal discipline to lower the

cost of finance, suggests that alternative sources of funds for productive public investment might be considered. Ports and airports already benefit from private sector investment (IDB 2007b), and this could be extended to the road network. Revenue bonds, used by municipalities in the United States for infrastructure investments, are another option through which funds can be raised from abroad with direct claims to future flows from infrastructure. Low-cost multilateral finance and grants might be available. The key consideration when seeking finance for such investments is that they have little to no impact on publicly guaran-

teed debt, either directly or by creating contingent liabilities that the government might eventually have to assume. As discussed previously, improving the fiscal situation is paramount.

Future work is needed to better define the drivers of fiscal imprudence and the policy options for bypassing the constraint such imprudence imposes in the short term and relieving it in the long term. However, the diagnostic presented in this chapter clearly shows that this is the binding constraint on growth in Belize, and therefore it should be the focus of future public policy.

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Anchoring Fiscal Policy for Growth

2.1 Introduction

Chapter 1 noted that economic growth in Belize over the last two decades has been highly cyclical and driven primarily by alternating periods of highly expansionary fiscal policies and abrupt adjustments. The resulting overhang of public debt is a primary factor in depressing national saving and raising local interest rates. The central recommendation of Chapter 1 is sustained fiscal consolidation through institutionalizing fiscal discipline and halting the erosion of the country's tax base, in order to reduce the cost of finance over time and thereby facilitate a faster rate of economic growth. This chapter further explores the fiscal challenges facing Belize, outlines measures the government has taken so far to address those challenges, analyzes possible policy options, and makes a number of recommendations.

2.2 Fiscal Challenges in Belize

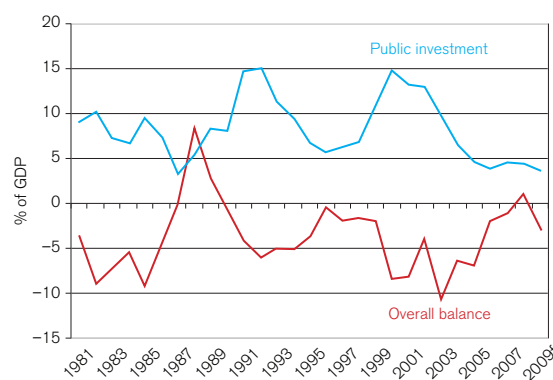
2.2.1 Overview of Aggregate Fiscal Performance

Aggregate fiscal outcomes in Belize have been highly variable and, as noted in Chapter 1, have followed a cyclical pattern whereby several years of large deficits have been followed by periods of near budget balance or surpluses. In the roughly three decades since its independence, Belize has passed through three complete cycles of fiscal expansion and adjustment. Large deficits have been associated with fluctuations in the rate of public investment—high capital expenditures have caused large fiscal deficits. Indeed, public investment as a percentage of gross domestic product (GDP) has been almost the mirror image of the fiscal deficit (Figure 2.1).

The latest expansionary phase, from 1999 to 2003, was particularly extreme and damaging. Public investment in Belize rose from around 6 percent of GDP to an average of 12.3 percent over those five years. As a result, the country's fiscal deficit averaged 6.6 percent of GDP throughout the period.

A huge expansion of the assets of the state-owned Development Finance Corporation (DFC) between 1999 and 2003 subsequently contributed to

FIGURE 2.1. PUBLIC INVESTMENT AND OVERALL BALANCE



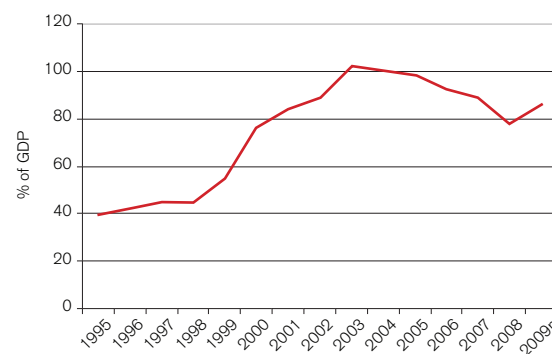
Sources: Central Bank of Belize, Statistical Institute of Belize, and IDB projection.

enormous losses at the institution. By 2004, the Belizean government had to step in and assume directly US\$210 million (more than 20 percent of the GDP at the time) in guaranteed external loans (IMF 2006). Government guarantees have also been called in problematic privatizations of state companies.

Large fiscal deficits from 1999 to 2004, as well as the assumption of DFC losses, led to a rapid accumulation of external public and total public debt (Figure 2.2). The public debt-to-GDP ratio peaked at 102.3 percent of GDP in 2003. It declined significantly from 2004 to 2008 as a result of fiscal adjustment, economic growth, and inflation, but increased to a projected 85.8 percent of GDP by the end of 2009 because of negative GDP growth, negative inflation, and a widening deficit in 2009 associated with the global economic recession.¹

Belize's public debt is now one of the largest, relative to the size of its economy, in the Caribbean and Central America (Figure 2.3). Moreover, external debt accounts for an unusually high share (91 percent) of the country's total public debt. As a result, Belize's external debt-to-GDP ratio is the second highest in that region, after Grenada.

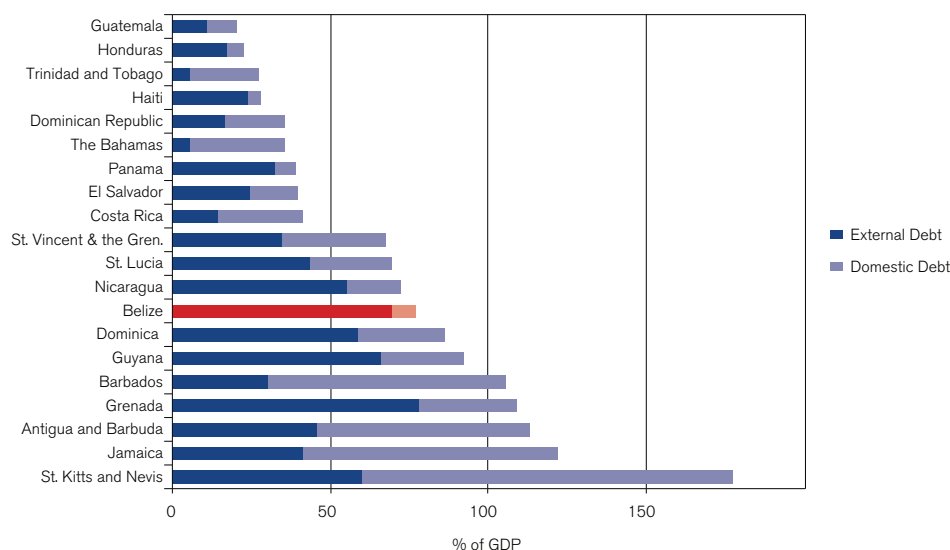
FIGURE 2.2. PUBLIC AND PUBLICLY GUARANTEED DEBT



Sources: IMF Article IV Consultation Reports, Central Bank of Belize, and IDB projection.

From 2004 to 2008 Belize's government engineered the country's third period of fiscal adjustment since independence, converting a fiscal deficit of 10.8 percent of GDP in 2003 to a surplus of 1.1 percent in 2008. The scale of adjustment was large compared to international experience (Martin and Presciuttini 2007). But Belize has achieved impressive stabilizations twice before. The country's central fiscal challenge is to institutionalize fiscal discipline in order to prevent another damaging "go-stop" cycle and to reduce the debt overhang.

FIGURE 2.3. PUBLIC DEBT IN THE CARIBBEAN AND CENTRAL AMERICA (DECEMBER 31, 2008)



Source: IMF Article IV Consultation Reports.

¹ In early 2007 the government of Belize successfully concluded a debt exchange with its external private creditors. This comprehensive restructuring avoided a debt default and smoothed the debt-servicing profile, but it did not reduce the principal, and external commercial debt remained the same in nominal U.S.-dollar terms.

It is going to get tougher, however, for Belize to maintain a roughly balanced overall fiscal position—which is necessary for debt sustainability reasons. Interest rates on the country’s restructured “superbond” will rise from the current (January 2010) 4.25 percent to 6 percent from August 2010 until February 2012 and then to 8.5 percent from 2012 onwards. Other things equal, this will require higher primary surpluses just to maintain the same overall balance and level of public debt. Moreover, the substantial scale of adjustment noted in the previous paragraph was enhanced by revenue factors that may prove to be temporary. Foreign government grants averaged 2.3 percent of GDP in 2007 and 2008, compared with just 1 percent between 2000 and 2006. If grants return to the historical average, Belize will need to make an additional fiscal adjustment of 1.3 percent of GDP to maintain the same overall balance. Similarly, petroleum revenues amounted to 0.9 percent of GDP in 2007 and 2 percent in 2008. If new commercial petroleum discoveries are made (see Chapter 8), this revenue contribution could continue or increase. However, if new oil deposits are not found, production and government revenues are expected to taper off and then disappear by around 2019 (IMF 2008).

The combination of temporarily lower interest rates, temporarily higher grants, and the emergence of petroleum revenues appears to have lessened the impetus in the country towards fiscal policy reform (Shukla 2009). However, as these factors diminish, the need for fiscal policy reform will once again come into focus.

2.2.2 Challenges Related to Public Expenditures

The aforementioned aggregate fiscal outcomes reflect deeper challenges. In particular, institutional constraints on expansionary policies are clearly insufficient, and to date politicians have not faced sufficiently strong incentives in favor of fiscal discipline. This section analyzes some of the underlying problems related to Belize’s fiscal outcomes.

International Financial Market Development

Part of the explanation for the country’s huge rise in external debt from 1999 to 2003 is that Belize,

along with other Caribbean countries, gained better access to international financial markets in the late 1990s. Sahay (2005) argues that at that time, Caribbean countries were able to place greater volumes of debt in international markets as a result of the growing popularity of emerging markets in general, as well as global investors’ efforts to rebalance their portfolios in the aftermath of financial crises in 1997 (Asia) and 1998 (Russia). Consequently, Belize was not alone, at least in the most recent period of fiscal expansion. Across the Caribbean there was a trend toward higher levels of government expenditures, larger fiscal deficits, and a rapid increase in public debt. During 1998–2003, the average public debt-to-GDP ratio in six Caribbean countries included in Sahay’s (2005) analysis rose by 8.5 percent of GDP per year. Belize thus took advantage of a structural change in international finance and a relaxation of external financing constraints because domestic institutions were not strong enough to ensure self-discipline and hold it back.

Weak Budgetary “Institutions”?

The literature has shown that the political and institutional framework for fiscal policymaking has an important impact on fiscal policy and fiscal outcomes (see, e.g., Artana and Naranjo 2003). One strand of the literature has investigated the impact of the form of government, whereas a second strand has focused on the institutions governing budget procedures. In the first strand, various studies (e.g., Schick 1998) have found a strong correlation between the stability and cohesiveness of the government, on the one hand, and fiscal deficits and debt-to-GDP ratios, on the other. Fragmented and unstable governments (such as multiparty coalitions) appear to have more difficulty in assembling and maintaining support for the tough measures involved in fiscal discipline. But this does not seem to have been a factor in Belize, which has a Westminster political system with two dominant political parties that have governed more often than not as single-party governments, often with large majorities, since independence.

The second strand of the literature has found that “hierarchical” rules and more-centralized decision making governing the formulation and review of the budget, along with appropriation of funds

by the legislature, lead to more fiscal discipline than decentralized, collegial forms of decision making (e.g., Alesina et al. 1996; Schick 1998). Centralized decision making helps to correct the bias towards spending and deficits that emerges when decision making is decentralized to line ministries that do not fully internalize the costs of additional spending. Belize's fiscal institutions appear to score well on several criteria in this area but poorly on most. The authority of the Minister of Finance relative to spending ministers is high, especially on occasions when the Prime Minister holds the post of Minister of Finance. The Belizean Parliament makes only minor modifications to the executive's budget proposal (Sitja 2009). Government borrowing authority is limited in the sense that all loans larger than BZ\$10 million (US\$5 million) have to be approved by Parliament. However, neither the Constitution nor lesser legislation constrains the country's fiscal deficit; a macroeconomic program is not a prerequisite for submission of a budget to Parliament; the approved budget is undermined by significant supplementary budgeting throughout its execution; the government frequently assumes debt originally incurred by other public entities; and some public enterprises, notably the DFC, have in the past had significant borrowing authority. Application of the Alesina et al. (1996) methodology to Belize gives the country a score of 44.49 out of a maximum of 100, the third weakest out of Latin American and Caribbean countries examined (Figure 2.4)

Poor Information and Transparency

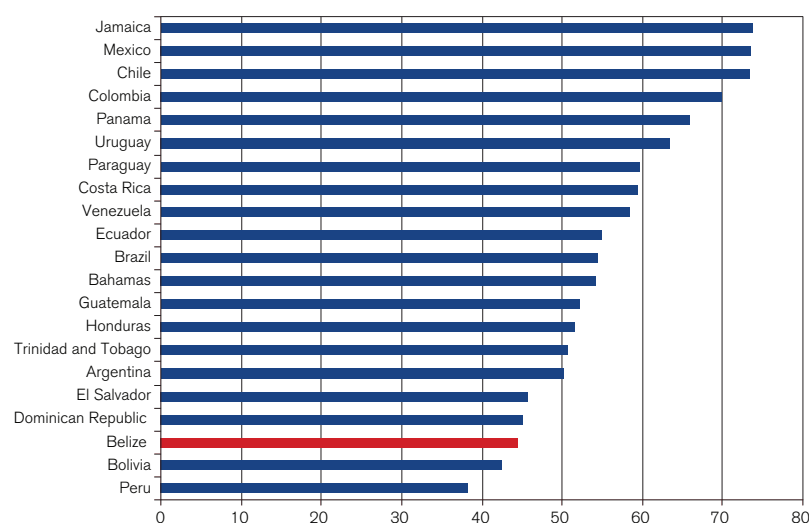
Poor information and transparency has been a major weakness in Belize's public financial management. Information on the country's fiscal position and fiscal policies has been weakened by a lack of budget comprehensiveness, and by its poor levels of accuracy and lack of timeliness.

Belize's budget lacks comprehensiveness. Some central government operations take place outside of the fiscal policy framework and are not included in standard budgetary management and reporting procedures (Sitja 2009). Transactions on both the revenue and expenditure sides take place outside of the consolidated fund, from bank accounts outside the treasury system managed by line ministries (Symansky 2009). More broadly, information on autonomous government institutions and statutory bodies is weak.

Within the Ministry of Finance, delays in posting expenditures and revenue to the accounts weaken the accuracy and timeliness of budget report preparation (Barnett 2009). Commitments are not reported on and in some cases not even recorded (Symansky 2009). Public access to information is also deficient. Information is not presented in a way that is easily understood and relevant, nor is it done in a timely manner (Symansky 2009).

Macroeconomic arrangements can affect the timeliness of information to citizens regarding a

FIGURE 2.4. INDEX OF BUDGET INSTITUTIONS, SELECTED LATIN AMERICAN AND CARIBBEAN COUNTRIES (1980–1992)



Sources: Alesina et al. (1996) and author calculations for Belize.

government's fiscal stance. The conventional wisdom until around 2000 was that fiscal discipline is greater under fixed exchange rate regimes than under flexible exchange rate regimes. The argument was that expansionary fiscal policies can be accommodated through depreciation under a flexible exchange rate regime, whereas fiscal expansions under a pegged exchange rate regime will lead to a loss of reserves and eventually jeopardize the exchange rate peg. Since exchange rate devaluation under a pegged exchange rate is invariably unpopular, governments will strive to ensure that this does not happen. However, Tornell and Velasco (2000) turned the conventional wisdom on its head and argued that in fact floating exchange rate regimes provide greater fiscal discipline. In a floating exchange rate regime, according to these authors, fiscal expansions are transmitted almost instantaneously into depreciation of the nominal exchange rate—an economic indicator that is highly visible to the whole population. By contrast, fiscal expansions under a fixed exchange rate regime can be hidden from the general public for several years through a running down of international reserves and an accumulation of external debt.

Tornell and Velasco's hypothesis has been borne out by Caribbean experience. Average fiscal outcomes in countries with fixed exchange rate regimes were slightly worse than those in countries with flexible exchange rate regimes between 1998 and 2003, and public debt in Caribbean countries with fixed exchange rate regimes rose from just over 50 percent of GDP in the 1990–97 period to nearly 90 percent of GDP in the 1998–2003 period (Sahay 2005).

Weak Internal and External Control

Most aspects of internal financial control in Belize are weak (Wiggins 2009). Commitment controls are mostly lacking, unplanned expenditures are regularized ex post, transactions are incompletely recorded, and controls are breached as a result of ineffective budgetary accountability mechanisms (Sumar and Shepherd 2009). The country's ministries do not have internal audit offices monitoring compliance with accounting and financial internal controls (Sumar and Shepherd 2009), and there is no functioning internal audit process within the Ministry of Finance (Barnett 2009).

In general, external oversight of the Belizean government's finance is weak (Symansky 2009). The Office of the Auditor General suffers from a severe lack of resources and has had virtually no increase in its staff increase in the past 20 years. As a result, there are departments and ministries in Belize that have not been audited even once in the past 25 years (Shukla 2009). Currently, the office's staff is trained only to do compliance auditing, checking whether financial regulations and procurement procedures have been followed. The office was recently computerized, but the audit staff has yet to be fully trained to function in the new environment and cope with the burden of clearing the backlog of work (Shukla 2009). The Auditor General did not submit audit reports to the National Assembly between 1988/89 and November 2007. The Public Accounts Committee of the National Assembly rarely meets (Symansky 2009), and the National Assembly did not conduct any hearings on the findings that emerged from the 2006/07 audit and took no action with respect to the November 2007 report (Sumar and Shepherd 2009).

Short-Termism

Fiscal policy in Belize is conducted with an emphasis on the upcoming year and lacks a medium- and long-term perspective. Annual budgets are developed without the benefit of a medium-term macroeconomic or fiscal framework. Policy statements lack a medium-term perspective and do not commit the government to measurable medium-term goals. One effect of this excessive discounting of the future has been a strong bias towards spending and borrowing in the current period, while ignoring the costs of debt servicing in the future.

Inadequate Control of Key Expenditure Items

The Belizean government has had difficulty maintaining control of two key expenditure items: wages and utility expenses. The government's wage bill is high by international standards and has been a recurring structural problem. Over the last two decades it has fluctuated between 11.0 percent of GDP in the mid-1990s and 9.0 percent in 2006 and 2007; in 2008, it amounted to 9.1 percent of GDP. Employee compensation averaged 56 percent of central government expenditures during 1990–2003, which was the highest

proportion out of 52 countries considered by Glenday and Shukla (2006).

Generous wage and salary awards have also contributed to higher expenditure levels and larger fiscal deficits. Government employees are an important political constituency, and generous wage awards, even during adverse macroeconomic conditions, have resulted from political decisions oriented towards the short term (Shukla 2009; IMF 1998, 2006). Fiscal adjustment measures during 1993–1996 included freezing civil service wages and reducing the number of civil servants by close to 9 percent in December 1995, resulting in an estimated savings of 0.9 percent of GDP for 1996/97 (IMF 1998). However, this progress was subsequently undone by a significant wage increase in November 1996 that was estimated to cost 1.75 percent of GDP. Wage increases of 5–8 percent per year during 2003–2005 pushed the fiscal deficit to 10.8 percent of GDP in 2003 and initially hampered the fiscal stabilization effort that started in 2004 (IMF 2005).

Expenditures on public utilities are the third-biggest item of government spending and typically account for about 8 percent of total government expenditures. Although responsibility for telephone payments has been decentralized, in line with the recommendation of Glenday and Shukla (2006), the Ministry of Finance still pays other utility bills—electricity, water, street lighting—for most line ministries directly. This practice robs the ministries of any incentive to limit or control their consumption of utilities and consequently leads to overexpenditure in this area, particularly in light of the country's high electricity rates.

Potential Liabilities from the Pension System

Unless reformed, Belize's two public pension schemes—the general Social Security System and the Pension Plan for Public Officers—will significantly undermine aggregate fiscal outcomes over the medium and long term.

The Social Security System is a contributory, partially funded, defined-benefit scheme in which contributions are adjusted over time to ensure—in theory—that expected premium and investment income do not fall short of the cost of benefits and administration. The Social Security Board's

excess of income over expenditure is declining rapidly, however, falling from 1.1 percent of GDP in 2004 to only 0.6 percent in 2008. Contributions and other system parameters, such as income ceilings and possibly the retirement age, will need to be adjusted over time, if the system's financial equilibrium is to be maintained (Tapia Troncoso 2009).

The Pension Plan for Public Officers is also a defined-benefit scheme, but unlike the Social Security System, it is unfunded and noncontributory. It provides retirement pensions from age 55 for public officers with at least 10 years of service up to a maximum of 67 percent of the average earnings in the last three years of service (Tapia Troncoso 2009).

Urgent reforms are needed to limit the accrual of additional government liabilities from the plan. Because of its noncontributory nature, all of the plan's expenses are covered from the central government budget, and those expenses have been growing steadily over the last few years, reaching 1.6 percent of GDP at the end of 2007. The most recent actuarial evaluation estimated the plan's projected total benefit obligations, which include future obligations for the currently active staff, at 33 percent of GDP as of December 31, 2007 (Tapia Troncoso 2009).

Lack of Allocative Efficiency and Effectiveness

Weak allocative efficiency and expenditure effectiveness have lowered the benefits of public spending in Belize and necessitated higher levels of expenditure to achieve given economic and social policy objectives. Arguably the most inefficient area of public expenditure has been capital expenditures. Belize has no requirement for a cost-benefit analysis or rigorous project appraisal before a capital expenditure is sanctioned. There is hardly any capacity to conduct appraisal of projects and programs in any major spending department or the Ministries of Economic Development and Finance (Shukla 2009). The Department of Public Works performs some cost-benefit analysis, but it is rudimentary in nature. The prevailing practice for making decisions in regard to new capital expenditures is simply to take proposals to cabinet and decide by consensus. Unsurprisingly, the Prime Minister noted in

his presentation of the country's 2008/09 budget that "[v]ery large sums of money have been spent without much visible result in terms of developing the country" (Barrow 2008). Furthermore, the capital expenditure portion of the country's budget is prepared separately from the current side by the Ministry of Economic Development and is therefore only weakly integrated with it. This hinders consideration and incorporation of the future recurrent expenditures implied by capital expenditures.

Deficient budgeting procedures and the lack of program budgeting also hamper allocative efficiency in the country. There is little dialogue between most ministries and the Ministry of Finance in the preparation of budgets (Barnett 2009). The budget circular requesting ministries' initial submissions into the budget preparation process does not include spending ceilings to guide ministries in the preparation of their budgets. Budgeting is input based, whereas best practice is to provide output, program, and performance measures (Symansky 2009).

Efficiency is also weakened through poor cash flow management. Budget allocations for current expenditures are released in monthly installments equal to one-twelfth of the annual appropriation. This practice creates rigidities for spending ministries and incentives to circumvent the rigidity through payment delays or overdraft facilities at the central bank (Wiggins 2009).

2.2.3 Challenges Related to Revenues

Belize's revenue performance has generally been respectable in aggregate terms. Reviews of the country's tax performance in 2002 and 2006 concluded that the tax system had been performing well and that there were no major gaps in the tax base at those points in time (Jenkins and Kuo 2002, 2006). The tax system also has a number of positive features, such as the simple but very progressive personal income tax arrangements. However, the reviews also suggested that tax-policy-induced economic distortions needed to be reduced and that the tax system could be made more robust as an instrument of revenue collection. Structurally, the tax system is still overly reliant on trade taxes, which have a complicated structure. The thresh-

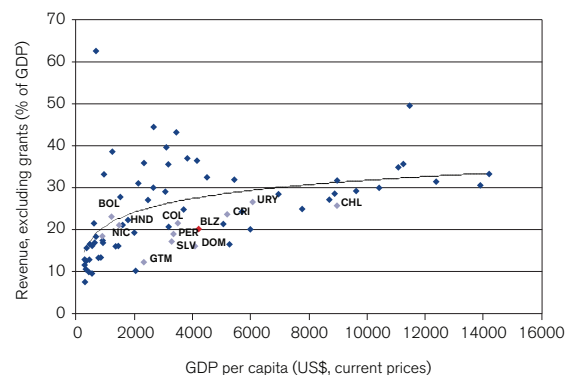
old for income subject to the aforementioned personal income tax is very high in relation to income compared to international practice, and there are some inconsistencies in the rates of business taxes applied to different economic activities. At 17–20 percent of GDP, tax revenue is slightly below what one would expect for a country of Belize's per capita income (Figure 2.5), and tax incentives are eroding the country's tax base (Shukla 2009).

Outdated Taxation Structure

Belize's taxation structure is outdated and overly dependent on trade taxes, which need reforming both to minimize economic distortions and to comply with its international trade policy commitments (Jenkins and Kuo 2006; see also Chapter 4). Some restructuring of the country's tax revenues has already occurred. Taxes on international trade were the largest source of government revenues until 2005, bringing in an average of 41 percent of tax revenues and equivalent to 7.7 percent of GDP between 2000 and 2005. However, trade taxes were overtaken in importance by taxes on goods and services in 2005 and by income taxes in 2008 (largely as a result of growing petroleum revenues). Between 2006 and 2009, trade taxes brought in an average of 29.5 percent of tax revenues and were equivalent to 6.6 percent of GDP.

The tariff rate structure in Belize and its trade-related levies are somewhat complicated by international standards (Jenkins and Kuo 2006). Belize applies the Caribbean Community (CARICOM) common external tariff to imports from non-CARICOM countries (accounting for more than 98 percent of the country's imports), which is an

FIGURE 2.5. TAX REVENUE, 2008



Sources: World Bank (2009) and IMF (2009b).

average of 11.3 percent with a standard deviation of 11.3 (Chapter 4). In addition to the regular trade tariffs, Belize applies a revenue replacement duty and an “environmental tax.” The revenue replacement duty is applied on certain goods at rates varying from 2 to 30 percent on the import price plus the import duty (Shukla 2009). These are mostly goods that are normally subject to excises, and clearly the revenue replacement duty is an import duty under a different name. Similarly, a 3 percent environmental tax is imposed on all imports except those of basic foods (and the import of vehicles over four cylinders carries a rate of 5 percent).

Twenty-eight categories of goods require licenses for importation. Quantitative barriers have been shown to be more distorting to trade than equivalent import tariffs, and governments lose potential revenue through this type of licensing scheme, because the rents deriving from protection accrue to the fortunate recipients of the import licenses rather than to the treasury.

High trade taxes and nontariff barriers create an antiexport bias in a country by raising the cost of inputs for domestic production (including tourist consumption) and by increasing the returns to investment in the protected import substitution activities. This is contrary to what Belize, as a country highly dependent on export performance, needs. In addition, high trade taxes create strong incentives for input-dependent businesses to get around them through obtaining exemptions. Consequently, they generate a strong demand for the Belizean government’s incentive schemes, especially export-processing zone status.

Excessive Use of Fiscal Incentives to Promote Economic Growth

Since 2000 Belize has made excessive use of fiscal incentives to promote economic growth. Jenkins and Kuo (2006) and Chapter 1 point to the impact of these incentives in eroding the country’s tax base. There are at least seven main acts or programs involving fiscal incentives; three of the most important are the Fiscal Incentives Act, the Export Processing Zone Act, and the Commercial Free Zone Act (of 1994).

Belize’s Fiscal Incentives Act was introduced in 2000 and was subsequently amended in 2003.

The main provisions of this law include a tax holiday for 5–25 years; tax exemption for any dividends or profits accruing to shareholders of companies or enterprises enjoying tax holidays; and an import duty exemption for a period of up to 15 years, extendable for another 10 years (Shukla 2009).

Export-processing zones (EPZs) are free trade zones established primarily for attracting investment and producing goods and services for export purposes, as well as for creating employment. There are 64 EPZs in Belize, of which 13 are under review for revocation of EPZ status because they have not been functioning (Shukla 2009). Forty-five of the EPZs are already exporting; the rest are in the planning and construction stages. The majority of the EPZs are either foreign investments or foreign-funded enterprises. Only processing units are allowed under EPZ status, and therefore the primary sector (agriculture) is virtually excluded. Information technology companies are greatly attracted to the country’s EPZs. Two casinos in Belize have EPZ status, as they attract visitors from across the Mexican border.

No import duties are imposed on inputs or capital equipment imported into the zones, and the goods and services produced in the zones are free from indirect taxes. EPZ businesses are also exempt from business tax, income tax, withholding tax, capital gains tax, or any corporate tax for a minimum of the first 20 years of operation, including any dividends paid to shareholders. Although exemption from indirect taxes in EPZs is appropriate because the final products are meant for export, the highly favorable treatment of income and other direct taxes—such as the 20-year income tax holiday—should be withdrawn.

Commercial free zones (CFZs) provide services to goods in transit through Belize, in the same way a bonded warehouse would. The goods are simply imported and then exported; there is no value added within Belize. There is only one CFZ in the country, located on the border with Mexico, and it is primarily oriented toward offering duty-free shopping to Mexicans. There are 490 registered companies in the zone; 247 are Belizean and 243 foreign. About 290 of these companies are active; the rest are closed or dormant. The

zone employs 2,200 people (about 2 percent of the country's formal workforce), making the CFZ scheme attractive to the government.

For most goods passing through the CFZ, the government of Belize receives only a service charge of 1.5 percent on the import value (6 percent on liquor and cigarettes, and 10 percent on fuel). Between 2002 and 2008, total revenues to the government from the CFZ were about BZ\$22 million. No taxes are applied for the first 10 years, after which a 2 percent business tax is imposed. No company is currently paying this 2 percent tax, however, because no active company has crossed the 10-year period; a few that did are no longer active. The CFZ has proposed to the government that the 10-year period be extended by another 5 years. Just as in case of the country's EPZs, companies in Belize's CFZ should not be exempt from business income tax. At a minimum, all new firms entering the CFZ should be subjected to business tax or business income tax.

2.2.4 Staffing and Organizational Challenges in the Ministry of Finance

Some of the aforementioned problems are exacerbated by staffing and organizational deficiencies in Belize's Ministry of Finance. The general administration of the ministry is seriously understaffed, and a disproportionate number of its staff are employed in clerical positions (Sumar and Shepherd 2009). High turnover among the ministry's employees has also been a problem. The country's civil service training program was discontinued by the previous government, and there are few training or career development opportunities for staff (Wiggins 2009). A large number of ministry staff do not have job descriptions, there is no work program planning, and there is an uneven work burden, with some staff (including professional staff) estimating that they use only 50 percent of their time (Barnett 2009). The ministry lacks a clear organizational structure and should be organized more transparently around well-defined functions (Sumar and Shepherd 2009; Barnett 2009). Although this is mainly an issue on the expenditure side, the fragmentation of the ministry's revenue administration into three separate agencies—Customs, Income Tax, and General

Sales Tax Departments—has long been viewed as hampering coordination and consolidation of functions like inspection and auditing.

2.3 Government Policy Reform Efforts

2.3.1 Revenue Measures

In its policy reform efforts the Belizean government initially assigned greater attention to the revenue side. Probably the most significant reform was the replacement in July 2006 of a sales tax that suffered from a narrow tax base, multiple rates, and a cascading effect with a general sales tax (GST). The general sales tax has all the features of a value-added tax and has a standard rate of 10 percent as well as a zero rate; certain services, notably financial services, hotels and guest houses, and medical services, are exempt. The GST has been a great success, and its revenue performance in 2006–2009 was significantly better than that of the sales tax previously in force.

Belize's government has also worked on improving the coordination between the different revenue agencies and in 2009 introduced a single tax identification number for all taxpayers. In 2008 and 2009 the government revamped management information systems by introducing automated computerized systems: the Standard Integrated Government Tax Administration System (SIG-TAS, for business tax and GST) and Automated System for Customs Data (ASYCUDA, for customs) (Wiggins 2009). The Customs and Excise Department estimates that revenues will increase about 30 percent as a result of upgrading to ASYCUDA.

In line with the recommendations of Jenkins and Kuo (2006), the revenue replacement duty for fuels (gasoline and diesel), alcohol, and beverages, which accounted for about 80 percent of the revenue from the duty, was eliminated in 2008. However, the duty on fuels was reintroduced in the country's 2009/10 budget.

Belize's government has amended the legislation regarding goods exempted from import duty to remove the duty for some specific end-use organizations.

2.3.2 Expenditure Measures

Reforms on the expenditure side largely took a back seat to revenue reforms until 2008 and especially 2009, when the emphasis shifted from the latter to the former. Two early expenditure reforms were the aforementioned decentralization to ministries of payments for telephone service and progressive moves to improve classification of expenditures and make them conform better to international standards, such as the International Monetary Fund's Government Finance Statistics Manual (1986). Notably, expenditures that had previously been classified as domestically financed capital expenditures have been now reclassified as current expenditures. This issue had been flagged as a major concern in Glenday and Shukla (2006).

More recently, the Ministry of Economic Development, following a detailed review, has proposed a phased withdrawal of import licenses (Shukla 2009). With funding from the Taiwan International Cooperation and Development Fund, the Ministry of Economic Development is also computerizing the licensing process to increase transparency.

The Belizean government has also made efforts to strengthen key areas of the Ministry of Finance. The Auditor General's Office has been computerized, although staff lack the training to fully exploit this investment. A debt management unit has been established, and staff have been trained in the Commonwealth Secretariat's Debt Recording and Management System (DRMS). In 2008 two senior and experienced personnel were contracted to bolster the ministry's senior management. During 2009 efforts were made to develop and monitor quarterly fiscal targets, although this has been hampered by delays and deficiencies in receiving fiscal data (Barnett 2009).

In 2009, the government received significant technical assistance for strengthening fiscal and public financial management. Consultants financed by the Caribbean Development Bank (CDB) reviewed the country's arrangements for macroeconomic management, as well as the finance orders and stores orders, and made recommendations for their modernization. Consultants financed by the IDB assisted in institutional strengthening of the Ministry of Finance and the preparation of a

fiscal transparency and responsibility framework, a medium-term fiscal framework, and an action plan to strengthen public financial management.

A technical assistance operation currently in execution under the IDB's Program to Implement the External Pillar of the Medium Term Action Plan for Development Effectiveness (PRODEV) includes activities to conduct a legal review and analysis of the legislative framework governing the Auditor General, propose amendments to the law, and provide training in value for money auditing for Auditor General's Office staff and the Public Accounts Committee.

2.4 Policy Options

Although the solutions for many of the fiscal issues outlined in the diagnosis section of this chapter are clear cut, in other cases, there are a variety of policy options that the government could consider. This section outlines policy options and international experience in five key areas where the ideal policy direction is less clear cut: three in the broad area of improving expenditure discipline and two in regard to strengthening revenue mobilization.

2.4.1 Improve Expenditure Discipline

Introduce Fiscal Rules

Since the 1990s, growing numbers of countries have introduced fiscal policy rules to curtail excessive fiscal discretion and compensate for the bias of short-sighted governments toward accumulating public debt at the expense of future generations. By early 2009, 80 countries had in place national or supranational fiscal rules (IMF 2009a). Fiscal responsibility laws include laws, regulations, or procedures aimed at improving fiscal discipline by requiring governments to declare and commit to monitorable fiscal objectives and strategies (Symansky 2009). They vary with respect to legal authority, jurisdiction, the presence of escape clauses, and—perhaps most importantly—whether they are primarily procedural or numerical. Some countries focus exclusively on enhancing transparency and providing the legislature and the public with a monitorable multiyear fiscal strategy and the publication of

outcomes. This approach is typical of Commonwealth countries (Australia, New Zealand, the United Kingdom). Other countries focus more on rules with numerical targets for budgetary aggregates (Symansky 2009).

According to the most recent evaluation of the impact of fiscal rules, empirical analysis suggests that national fiscal rules have generally been associated with improved fiscal performance and identified as a success factor for fiscal consolidation (IMF 2009a). On average during large adjustments, fiscal rules were associated with larger reductions in a country's public debt ratio and over a longer uninterrupted period than occurred in countries without fiscal rules; moreover, the tightening of the fiscal stance was found to be more front-loaded (IMF 2009a). Nevertheless, the same study and Symansky (2009) note that the evidence that fiscal rules per se lead to better fiscal outcomes is not clear cut. Often fiscal rules are introduced during or after a major fiscal adjustment; consequently, both the improved fiscal performance and introduction of fiscal rules reflect a government's preference for fiscal discipline.

The most successful fiscal rules have been implemented in countries where there was a strong societal consensus and political commitment to fiscal discipline and where a strong public financial management system underpinned transparency (Symansky 2009). Ideally fiscal responsibility rules should cover as much of the public sector as possible and have sanctions for noncompliance (Symansky 2009). Combining budgetary balance and expenditure rules has proven particularly effective (IMF 2009a). Fiscal responsibility rules should be designed as permanent institutional constraints rather than temporary mechanisms.

Two important dangers have emerged in regard to fiscal rules. First, fiscal rules can actually generate perverse incentives; instead of encouraging fiscal discipline, they have led some governments to engage in creative accounting to give the impression of compliance with a rule. Second, rules need to incorporate sufficient flexibility to cope with exogenous shocks; otherwise they can either hamper countercyclical policies or break down under pressure. This is particularly relevant for small, open developing countries like Belize, where exogenous shocks lead to great variability in fiscal and macro-

economic outcomes. These considerations, as well as Belize's Commonwealth legal and procedural traditions and weak public financial management system, suggest that, at least initially, the safest option for Belize would be fiscal responsibility rules with an emphasis on procedures and transparency rather than hard numerical targets.

Introduce a Medium-Term Fiscal Framework

The classical response to short-sighted fiscal policymaking has been to introduce a medium-term fiscal framework (MTFF) or medium-term expenditure framework (MTEF). MTFFs or MTEFs have been introduced in nearly 100 countries (Schiavo-Campo 2008).

An MTFF imposes a discipline on the annual budget process by forcing technicians and policymakers to consider the medium term and to consider the medium-term implications of measures or policies introduced in the current year. Since most policies cannot be implemented in a single year or have multiyear implications, some sort of medium-term forecast of revenues and expenditures is essential to provide a frame for the annual budget process.

Criticism of MTFFs has questioned their benefits, underscored the heavy strain they place on limited budgeting capacity, and regarded them as a distraction from fixing the basic plumbing of a country's expenditure management system (Schiavo-Campo 2008). Schiavo-Campo (2008) views MTFFs or MTEFs as having worked well in several member countries of the Organisation for Economic Co-operation and Development (OECD), notably Australia, but with decidedly mixed results in developing countries. He cites Brumby's (2008) review of experience in African countries, which concludes that (1) MTEFs have not led to improvements in annual budget preparation; (2) budget behavior has not actually changed; (3) there is virtually no evidence of improved macroeconomic balance; and (4) there is no evidence of a link to greater budget predictability. In a similar vein, Schick (2004) is skeptical that MTEFs can change budget behavior when opportunistic politicians are in control.

Nevertheless, Schiavo-Campo's (2008) review of experience with MTEFs concludes that the les-

son from “experience so far is certainly not to forget the need for a medium-term perspective for the annual budget, but to re-size, redefine and reformulate the MTEF approach in a manner suitable for the possibilities and constraints of the different countries.” An MTEF can improve expenditure control, allocative efficiency, and use efficiency of a government’s financial resources if it is designed in the context of the country’s actual conditions, with the right sequencing and in a realistic manner. A multiyear fiscal forecast to frame annual budget preparation is essential for injecting into a country’s budgeting system an awareness of the future.

The lesson for Belize appears to be that an MTFF would be desirable for framing the annual budget process. However, great care should be taken to avoid overwhelming the country’s limited fiscal management capabilities. This suggests that the MTFF should be introduced slowly, with an initial step being just the estimation and publication in annual budgets of the aggregate revenue, expenditure, and budgetary outturns expected for the subsequent three years. Over time, as capacity allows, projections of medium-term expenditures by ministry could be developed.

Introduce Program Budgeting

A standard response to expenditure allocation problems is to introduce “program budgeting,” which aggregates expenditures by program even if they cut across multiple cost centers, rather than following line-item budgeting by cost center. Best practice in this area is to link funding to output or performance measures, and budgeting by program can help in the prioritization and allocation of expenditures. Although it is clearly desirable for Belize to move towards performance or program budgeting over the long term, two factors call into question the advisability of a big push in this direction in the short term. First, a move to this level of sophistication requires that basic budget preparation and execution functions, like classification, recording, and reporting, be well developed, and this is not yet the case in Belize. Second, Belize is contemplating a broad range of

fiscal reforms in the short term in a context of very scarce capacity, and hence it is important to prioritize those measures that are most important and/or administratively easier.

Two options have been suggested for a gradual move in the direction of program budgeting in Belize. Symansky (2009) suggests that the country should develop a functional/sector presentation, while working to develop performance budgeting programs on a pilot basis.² Glenday and Shukla (2006) and Shukla (2009) propose working on program budgeting on a pilot basis with selected strategic and appropriate ministries. They note that performance budgeting is most suited to programs with quantifiable targets, such as health, education, utility, construction, and transport services. It is less well suited to administration, policy, planning and coordination functions. In addition, they note that some of the country’s ministries, such as the Ministry of Health and the Ministry of Public Works, have already introduced some elements of unit costing and performance budgeting into their budgeting processes.

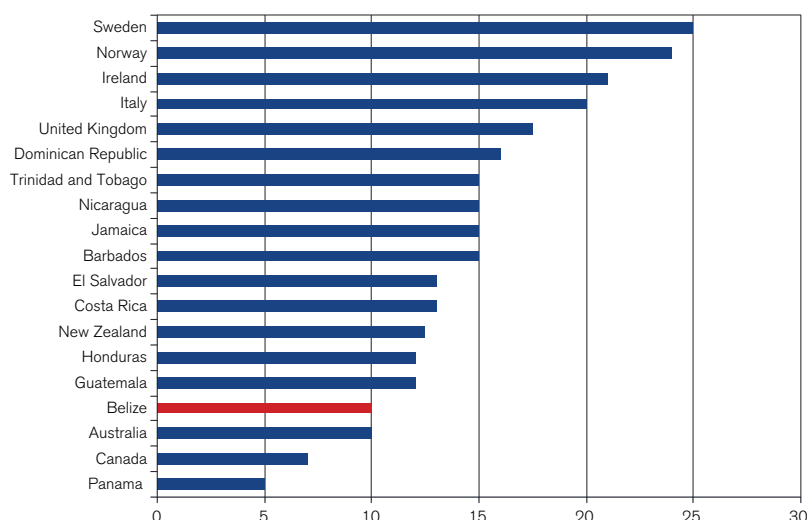
2.4.2 Strengthen Revenue Mobilization

Reduce Reliance on Trade Taxes

Reducing taxes on trade requires options for raising an equivalent (or greater) amount of revenue from other sources in a less economically damaging or administratively complex way. Fortunately, there are a couple of good options for replacing trade taxes with other indirect taxes in Belize. Jenkins and Kuo (2006) recommended that the country introduce a modern excise tax system that levies a tax on excisable goods (alcoholic beverages, cigarettes and tobacco products, motor fuels, cosmetics, and motor vehicles). The rate imposed could be selected in such a way as to bring the total tax burden up to the current level imposed by the revenue replacement duty, environmental tax, and other import tariffs. In addition, the current GST rate is quite low by international standards (Figure 2.6), and the list of zero-rated and exempt items is long and expanding. Raising the GST rate to 12.5

² A functional presentation is a presentation of government expenditures according to the classification of government functions (education, health, defense, etc.). Currently Belize presents data mainly by economic classification (wages and salaries, goods and services, interest, etc.), and the functional presentation is underdeveloped (Sitja 2009).

FIGURE 2.6. VALUE-ADDED TAX RATES IN SELECTED COUNTRIES



Sources: Barreix, Bés, and Roca (2009), IDB (2004), and World Taxpayers Associations (2004).

or 15 percent and cutting back on the exemptions would bring Belize into line with its fellow CARICOM members and Central American neighbors.

Scale Back Fiscal Incentives

Outright tax exemptions or tax holidays, such as those employed in Belize, are in general not cost-effective instruments. They are a blunt and opaque system of taxation in which there is no direct link between incentive and investment. It is also not unusual for companies to establish businesses just to fulfill the conditions for a tax holiday or exemption, then disappear at the end of the holiday or exemption period and reappear again in the form of a new enterprise to claim a tax holiday/exemption afresh.

A series of studies have shown that tax incentives have no significant impact on the flow of investment in a country (see, for example, Zee, Stotsky, and Ley 2002; Holland and Vann 1998; Bolnick 2004; Gropp and Kostial 2000; Byrne 2006). International experience suggests, however, that rather than tax incentives, the following factors do play a significant role in attracting investment to a particular country:

1. Economic and political stability
2. A well-administered and stable tax system with moderate tax rates
3. Adequate infrastructure—both physical and social

4. Untapped but trainable labor force
5. Existence of natural resources

Tax incentives and tax holidays, in particular, were quite popular internationally about 10 to 15 years ago and are still prevalent in the Caribbean. However, tax holidays and tax exemptions have almost completely disappeared from developed countries and are gradually being phased out in developing countries. OECD countries now tend to use only an investment tax credit or accelerated depreciation, both of which are quite well targeted to the amount of investment. Thus, for Belize, it may be a better option to keep tax incentives low and instead have a moderate and stable tax system and use the tax revenues to strengthen the country's fiscal position and lower the cost of domestic finance.

In any case, the tax incentives under the Fiscal Incentives Act in Belize are overly generous in all respects, extending benefits even to shareholders in regard to payment of their tax on dividends. Countries that still provide tax holidays generally keep the holiday period strictly limited to 3 to 5 years, whereas in Belize the tax holiday period can easily be extended to 20 or 25 years. In the event that Belize's tax holidays cannot be eliminated, or possibly as an intermediate step on the way to their elimination, it would make sense for Belize to curtail sharply the generosity of its tax holidays, bringing it more in line with the practices of other countries that have retained tax holidays as part of their fiscal incentives package.

Most countries exempt firms operating in EPZs from customs duties and domestic indirect taxes but make them subject to income taxes. It is also a World Trade Organization requirement that, beginning in 2009, firms operating in free trade zones be subject to the same income taxes as domestic businesses.

2.5 Policy Recommendations

Reforms of fiscal policy in Belize could lead to better fiscal outcomes along three dimensions: alleviation of the binding constraint on economic growth in the country, improved aggregate macroeconomic management and fiscal sustainability, and greater efficiency in public spending. A key element underlying policy reforms should be to raise the costs and lower the benefits that accrue from pursuing profligate fiscal policies, thereby improving incentives for fiscal policymakers to adhere to fiscal discipline.

Based on the above diagnosis and an assessment of various policy options, the policy recommendations in the following subsections are advanced for policymakers' consideration.

2.5.1 Expenditure Management

Improve Fiscal Transparency

Improving fiscal transparency in Belize will be key to providing the country's policymakers with better information with which to make decisions and will also allow greater accountability for policy outcomes. The fundamental building block for strengthening fiscal transparency will be better recording of transactions and better data collection and dissemination. Staff training will be needed to ensure greater utilization of the computerized information systems at the center of Belize's public financial management. It is fundamental that payments and receipts must be accurately and correctly executed, recorded, and accounted for (Wiggins 2009). Both cash and commitments should be recorded to allow monitoring of arrears (Symansky 2009). Transactions should be recorded in sufficient detail to make possible detailed monthly reports on the progress of expenditures against receipts and appropriately classified (Wiggins 2009).

In addition, the Belizean government could greatly strengthen transparency by routinely publishing reports on both its fiscal objectives and actual fiscal outcomes. It should prepare an annual fiscal strategy statement that sets out its fiscal strategy and allows the public to evaluate the country's fiscal policy. The statement should include the government's broad medium- and long-term policy objectives; fiscal objectives and targets for key fiscal measures for the budget year covered by the statement and the subsequent two years; details regarding any new fiscal measures to be implemented during the year; and the impact that the government expects its fiscal policies to have on tax revenues, government debt, national saving, and managing fiscal risk (Symansky 2009). In addition, the government should also publish an ex post report on fiscal outcomes, which would allow those outcomes to be compared with the objectives and expected fiscal outcomes set out in the fiscal strategy statement. Fiscal responsibility legislation would likely be useful to guide the contents and preparation of these documents and would anchor the requirement to produce them with the force of law. However, as discussed in Section 2.4, it seems preferable for this legislation to focus on procedural and reporting requirements rather than quantitative targets. The volatility of Belize's economy and fiscal outcomes due to external shocks—such as changes in international economic conditions or natural disasters—necessitates substantial escape clauses and flexibility to avoid violation and even breakdown of the framework or its constant alteration. Moreover, hard quantitative targets would increase incentives for distortions to data. The primary focus should be on providing a disciplined framework for fiscal policy formulation and increased transparency that would allow greater internal and external accountability.

Strengthen Internal and External Accountability

The incentives for responsible fiscal policy in Belize would be reinforced by strengthened internal and external accountability. Internal accountability could be bolstered through the creation of an internal accounting unit within the Ministry of Finance, with a focus on selective system checking rather than review of all expenditure transactions.

Strengthening external accountability in the country will require the dissemination of more

fiscal information as well as greater capacity to make use of it. As discussed in the previous subsection, introduction of a fiscal responsibility law that establishes and codifies the types of fiscal disclosure required would help. In addition, improved capacity on the part of the Office of the Auditor General would enable it to produce more frequent and more timely audits for Parliament's consideration.

Introduce a Medium-Term Fiscal Framework

The introduction of an MTFF would be essential for framing annual budget decisions in a medium-term framework. In order not to burden the Ministry of Finance, initially an MTFF should be prepared and published in a simple aggregate manner, focusing on broad fiscal aggregates such as revenues and expenditures according to the economic (Government Finance Statistics) classification at one digit. The government of The Bahamas introduced such a framework in its 2005/06 budget, with the simple addition of one page to the budget annex (Pratt 2005). The institutional and time requirements to produce an annex of this size would not be high and are completely achievable for Belize. Such an annex would make a useful start toward framing decision making in a medium-term perspective and would also be a necessary complement to the introduction of the fiscal responsibility framework recommended in Section 2.4.1.

Strengthen the Budget Development Process

Budget development in Belize can be strengthened by improving the budget circular. In particular, the budget circular should include aggregate spending limits to guide ministries in the preparation of their budgets. These limits should be consistent with the medium-term fiscal framework and aggregate budget constraint.

Broaden Budget Comprehensiveness and Avoid Contingent Liabilities

Belize's government should endeavor to improve the comprehensiveness of the country's budget by terminating the practice of off-budget transactions and progressively incorporating autonomous government agencies and statutory bodies. It should move to close private bank accounts of

line ministries and ensure that all payments from government agencies pass through the country's consolidated revenue fund. The government has imposed strict controls on the Development Finance Corporation to prevent an accumulation of contingent liabilities. Nevertheless, the government should be vigilant in ensuring that its fiscal planning accounts for and includes its contingent liabilities.

Improve the Incentive Framework for Economical Use of Utilities

Belize's Ministry of Finance should create an incentive for ministries to economize on their use of utilities by decentralizing to them the responsibility for paying electricity, water, and street lighting bills, along with the necessary budget (Shukla 2009). Ministries should be required to manage their expenditures within the limits prescribed by the budget and not be provided with additional funds to cover expenditures without adequate justification.

Enhance Investment Project Selection

The process for selection of investment projects in Belize's government agencies needs to be professionalized and institutionalized. The Belizean government should introduce an institutional framework for subjecting project proposals to standard cost-benefit analysis and selecting the projects with the highest economic rates of return and net present value. Given the small size of the country's government, it makes sense to start with a core group in the Ministry of Economic Development and appraisal units in the most important spending ministries, such as the Ministry of Works. Staff in government agencies need to be trained in cost-benefit analysis.

Introduce Performance or Program Budgeting—Gradually

Introducing performance or program budgeting could help improve the efficiency and effectiveness of government expenditures in Belize, as well as ensure that expenditures follow government priorities. However, given the variety of fiscal reforms competing for the government's attention, this is a reform that could wait and should be introduced only gradually, in a range of selected

programs and institutions in which its application is feasible and likely to be most effective.

Defuse the Public Pension Time Bomb

Belize's government needs to defuse the time bomb represented by the country's current pension system by carefully considering several policy reform options and then implementing the selected measures promptly. These options should include modifications to the current system, such as requiring contributions to the Pension Plan for Public Officers or adjusting income ceilings and possibly the retirement age in the Social Security System. Alternatively, it might be appropriate to establish a new national pension system, using a pay-as-you-go mechanism, or a capitalization or contractual savings system. The attractiveness of the last of these options is enhanced by the country's need to raise the level of national saving to foster faster economic growth (Chapter 1).

2.5.2 Revenue Management

Simplify and Lower Trade Taxes

Belize's tariff structure should be simplified and the tariffs consolidated to reduce economic distortions, simplify administration, and better align Belize with the direction of its international trade policy commitments. The most important and urgent reforms in this regard are the elimination of all of the existing revenue replacement duties and the environmental tax. Continued implementation of Phase 4 of CARICOM trade liberalization should lower the average tariff under the common external tariff and further reduce its dispersion. The revenues lost as a result of these measures should be replaced through the introduction of excise duties on excisable products (Jenkins and Kuo 2006; Shukla 2009) and reform of the GST (see below).

Convert Import Licenses into Tariffs

Belize's government should eliminate the licensing requirements for all categories of goods imports currently subject to such requirements. Goods in these categories should then be subject to import tariffs, which would be less damaging to trade patterns and contribute less to antiexport bias. In addition, tariffication would shift the

rents accruing to recipients of import licenses into government revenue. Such a reform would contribute to the country's compliance with World Trade Organization norms.

Reform the GST

Belize's current General Sales Tax rate of 10 percent should be increased to 15 percent (or at least 12.5 percent in the first round, with an increase to 15 percent later). Furthermore, the expansion of the list of zero-rated and exempt items under the GST should be halted, and the items currently zero-rated should be scrutinized with a view to moving some items from the zero-rated list to the exempt list or the taxed list in order to avoid cascading effects at different stages of the production or sales process.

Phase Out Fiscal Incentive Schemes

The Belizean government should circumscribe fiscal incentive schemes and phase them out. Although it would be difficult to revoke incentives already awarded, the government can institute reforms that work on the margin and halt the erosion of the tax base that results from the use of these incentives. The country's Fiscal Incentives Act should be amended to eliminate holidays from the business tax, and already awarded incentives should be allowed to lapse as they reach their expiration dates. The country's existing business tax should be imposed on new entrants to the EPZs and the CFZ.

Impose Consistency on Business Tax Rates

Belize's government should rationalize the country's business tax rates to enhance consistency and make the system simpler (Jenkins and Kuo 2006). The business tax rate on the receipts of self-employed professionals should be increased from 6 to 15 percent to bring it more into line with personal income taxes levied on salaried professionals. The tax rate on public investment companies should be raised from 8 to 15 percent to make it equal to the rate applied to financial institutions (with whom these compete and share the same definition of their tax base). The 0.75 percent business tax rate paid by certain service sectors should be raised to 1.75 percent to bring it into line with that paid by other sectors.

Hold the Line on the Personal Income Tax Threshold

The Belizean government should resist any pressure to raise the threshold for income subject to the personal income tax, which, at three times per capita income, is already very high by international standards. It should allow inflation and economic growth gradually to bring more taxpayers into the tax net and widen the tax base.

2.5.3 Strengthening Organization and Staffing at the Ministry of Finance

In order to underpin the aforementioned substantive reforms, Belize's Ministry of Finance should consider introducing a modernized organizational structure, built around well-defined functions, perhaps with a Deputy Financial Secretary heading each of three major units: revenue collection, expenditure management, and administrative. A moderate number of staff should be hired to fill critical gaps, such as those in the Budget Department and the Office of the Accountant General. Higher productivity from existing staff can be obtained by reallocating work responsibilities

and stepping up training of existing staff to allow them to fulfill higher-level functions and adapt to technological improvements.

As Chapter 1 indicated, the central recommendation for Belize to raise its rate of economic growth is sustained fiscal consolidation through institutionalizing fiscal discipline and halting the erosion of the country's tax base. This chapter has outlined a number of options and recommendations for doing so. In 2004 Belize began its most recent phase of fiscal adjustment and at the same time started a process of revenue and expenditure reforms. The reform process received a major boost in early 2008 from the election of a government that had transparency and improved public financial management as a major plank of its electoral manifesto. The economic recession of 2009 and the substantial reduction of temporary props to the fiscal accounts (low interest rates on the "superbond," grants from bilateral donors, and perhaps petroleum revenues) now puts the urgency and importance of deepening the fiscal reform and consolidation process into a sharper focus. The next few years are likely to represent the best chance for substantial fiscal policy in Belize over the last decade.

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Challenges in the Financial Sector

3.1 Introduction

Chapter 1 diagnosed the binding constraint on economic growth in Belize as the high cost of finance. Fiscal indiscipline and low national saving were identified as the root causes of high domestic interest rates, and Chapter 2 explored further the fiscal challenges facing Belize and made a number of recommendations to address those challenges. This chapter further explores the challenges in Belize's financial sector, analyzes possible policy reform options, and makes a number of recommendations.

3.2 Challenges in Belize's Financial Sector

This section outlines the structure of Belize's financial system and then analyzes what is constraining access to credit and why the cost of finance in Belize is so high. In particular, it examines whether high costs are due to inefficiencies in the financial sector itself or to broader macroeconomic factors, such as low domestic saving. Key to this analysis is the finding that what distinguishes Belize from other small, open Caribbean economies with similar monetary and exchange rate arrangements is the high interest rates paid on deposits. By contrast, interest spreads, although high, are broadly in line with country comparators.

3.2.1 Structure of the Financial System

Belize's financial sector comprises private commercial banks, credit unions, the Development Finance Corporation (DFC), the Small Farmers and Business Bank, pawn shops, and moneylenders. Commercial banks account for about 80 percent of the formal credit market, and credit unions account for slightly less than 20 percent of this market.

Commercial Banks

Five domestic commercial banks and six international (offshore) banks operate in Belize. The domestic banks are governed by the Banking and Financial Institutions Act and authorized to transact business with residents in both domestic and foreign currency. The international banks are governed by the International Banking Act and authorized to deal with nonresidents, exclusively in foreign currency, and with firms operating in export-processing zones and commercial free zones (IMF 2006). The two acts empower the Central Bank of Belize to regulate and supervise both the domestic and international banks.

The domestic banking system is highly concentrated, with the three largest banks accounting for more than 80 percent of deposits and more than 80 percent of total loans. The largest bank alone accounts for approximately two-fifths of loans and deposits.

Credit Unions

There are 14 registered credit unions in Belize that engage in deposit taking and lending activities (IMF 2006). Credit unions serve a large segment of the population. According to the League of Credit Unions, there are about 25,000 member loan accounts, a large number in a country with a total population of about 333,000 and an employed labor force of 129,000.

The two largest credit unions account for about 85 percent of total credit union assets, with the largest credit union—the Holy Redeemer Credit Union—accounting for about two-thirds of the total assets of all credit unions operating in Belize. The largest credit union is highly profitable and well-managed and reached a return on equity of about 30 percent in the fiscal year that ended on March 31, 2008.¹ It is sizable enough to be counted among the largest financial institutions in Belize. Its financial statements indicate that a substantial share of its assets is invested in commercial bank certificates of deposit (Holy Redeemer Credit Union 2008). At the end of fiscal year 2007, it had about 39,000 members. It made about 16,000 loans totaling BZ\$57 million in the year that ended on March 31, 2008, with an average loan value of about BZ\$3,500, or slightly below one-half of the per capita gross domestic product (GDP). Belize's credit unions are governed by the country's Credit Unions Act, which assigns supervisory authority to the Governor of the Central Bank.

The Development Finance Corporation

The DFC is a state-owned lending organization founded to provide funding on an economically sustainable basis to borrowers who would not otherwise be able to fund their requirements from

other sources on reasonable terms and conditions. Established in 1963, the DFC lent to three public priority sectors—housing, education, and small and medium-sized enterprises. Large losses following a rapid expansion of assets and liabilities led the government to decide to liquidate the DFC in 2006. As a result, the DFC's outstanding loan portfolio and liabilities were reduced sharply between 2006 and 2008. However, in 2009 the government introduced the Development Finance Corporation Act to revitalize the DFC and to put in place a governance structure and regulations designed to ensure the sound management of the corporation and prevent an accumulation of large losses in the future.

Pawn Shops and Moneylenders

Pawn shops and moneylenders in Belize conduct short-term lending and charge the highest interest rates on it, estimated at about 1 percent per week. (Interest rates on consumption and retail loans and credit cards also carry higher rates when extended by banks.) Repayments on consumption and retail loans are usually made on a weekly basis; the item sold serves as collateral, and the interest rates charged are substantially higher than the rates charged by banks.

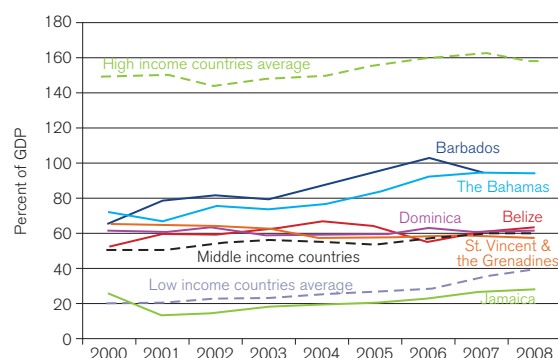
3.2.2 Financial Depth and Access to Finance

Belize's economy has a financial depth that is consistent with its level of development. In 2008 domestic credit to Belize's private sector was equivalent to 63 percent of GDP. This is in line with the level in middle-income countries and other small Caribbean countries (Figure 3.1). Its financial depth is greater than that of Jamaica, which has had a history of financial crises and inflation, but less than that of the most stable and highest-income Caribbean countries, such as Barbados and The Bahamas. This picture is reinforced by the middling rating Belize received in the World Bank's *Doing Business 2010*, which rated Belize at 87th out of 183 economies for ease of getting credit in the country.

¹ Credit unions can reduce lending rates to borrowers and/or increase deposit interest rates to savers, as both are "members" of the credit union, instead of operating with larger margins that lead to higher profits. Hence, comparisons of the profitability of for-profit banks and credit unions, as well as comparisons of the profitability of various credit unions, should take into account this potential difference in determining "actual" profitability.

FIGURE 3.1. DOMESTIC CREDIT TO THE PRIVATE SECTOR IN SELECTED COUNTRIES, 2000–2008

(percentage of GDP)



Source: World Bank, *World Development Indicators*.

Over the past 30 years, the outstanding loan portfolio (OLP) of Belize's commercial banks has grown at roughly three times the growth rate of GDP in the same period (an average annual growth of about 12 percent compared with an average annual GDP growth of about 4 percent), although since 2000 growth has slowed.

The lion's share of commercial banks' lending finances real estate and construction, which accounts for about one-third of OLP, with personal loans and loans for wholesale and retail distribution accounting for about 20 percent. The latter may well also include loans that finance small businesses, particularly with respect to working capital.

The majority of the credit extended by Belize's commercial banks goes to large and medium-sized businesses. It is estimated that as of the end of 2006, 7 percent of commercial banks' total credit reached small borrowers (i.e., those with assets up to BZ\$0.5 million), 43 percent went to medium-sized borrowers (assets between BZ\$0.5 million and BZ\$2.0 million) and 50 percent served large borrowers (assets over BZ\$2 million) (Nogales 2006).

This bias of commercial bank lending towards large and medium-sized businesses is typical in developing countries and reflects creditors' preference for borrowers that have effective collateral, an established proven track record of loan repayments, and relevant financial information that can be verified in audited financial statements. This preference typically has its roots in three issues: weak creditor rights in such countries, differences in information about borrowers, and economies

of scale in transaction costs. The bias in favor of well-established, large borrowers is usually intensified after a financial crisis.

Creditor Rights

In terms of the legal framework for credit access, Belize rates extremely well. According to the Legal Rights Index published in *Doing Business*, which measures the degree to which countries' collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending, the laws regulating access to credit in Belize are better designed in this respect than average for the region as well as the average for member countries of the Organisation for Economic Co-operation and Development (OECD) (Table 3.1).

Asymmetric Information

By contrast, information asymmetries between borrowers and lenders clearly play an important role in the context of the financial sector in Belize. Microbusinesses and small and medium-sized enterprises often do not possess accounting data that are needed to evaluate their creditworthiness. They often lack a track record of debt repayment, and the time and cost associated with evaluating their creditworthiness measured against the value of their potential borrowing are much higher. In-

TABLE 3.1. *DOING BUSINESS* RATINGS ON ACCESS TO CREDIT

Indicator	Belize	Region	OECD
Legal Rights Index	8	5.5	6.8
Credit Information Index	0	3.3	4.9
Public registry coverage (% of adults)	0	10.0	8.8
Private bureau coverage (% of adults)	0	33.2	59.6

Source: World Bank (2010).

Note: The Legal Rights Index ranges from 0 to 10, with higher scores indicating laws that are better designed to expand access to credit. The Credit Information Index measures the scope, access, and quality of credit information available through public registries or private bureaus. It ranges from 0 to 6, with higher values indicating greater amounts of credit information available.

dividual borrowers and microenterprises also suffer because Belize currently has no credit bureaus providing information to lenders about a potential borrower's creditworthiness and repayment history, partly because the market is very small and existing legislation is insufficient to make effective credit bureaus possible. Additional legislation would be required to enable credit bureaus and commercial banks issuing credit cards to share their clients' credit history with other qualified institutions while preserving the confidentiality of their clients' data. The nonexistence of a credit registry in Belize resulted in Belize's receiving zero ratings with respect to sharing of credit information on the World Bank's Doing Business Indicators.²

For-profit financial institutions in Belize typically prefer lending to what they perceive as secure borrowers, for which the issue of asymmetric information is mitigated by adequate collateral, a well-known track record of prior debt servicing, and updated financial reporting through audited financial statements (Yaron 2008). This often leads to the extension of overcollateralized loans that reflect creditors' risk aversion. The relatively easy and quick process for foreclosing on effective collateral associated with defaulted loans, particularly in respect to urban property, in Belize may also explain the preference granted to this type of clientele by for-profit banks.

Transaction Costs

The relatively low transaction cost per dollar of OLP of high-value loans compared with the relatively high transaction cost per dollar of OLP of low-value loans in Belize also contributes to the preference given to large borrowers. This situation is typical of financial markets in general and is even more prevalent in developing countries. The transaction costs associated with making a loan of BZ\$1,000 might not be significantly different from those for extending a loan of BZ\$100,000, although the return on these two loans is significantly in favor of the larger loan. Thus lenders have substantial incentives for favoring larger borrowers over smaller ones in their lending activities.

Credit Unions' Contribution to Financial Access

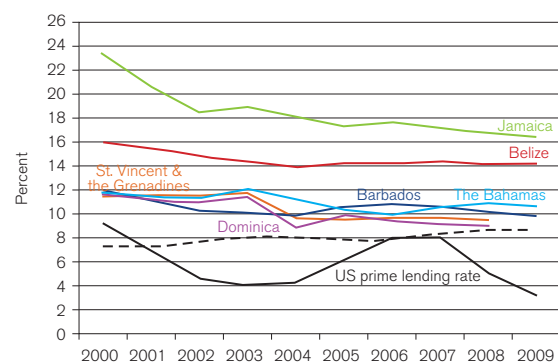
In contrast to commercial banks, credit unions in Belize are overwhelmingly focused on small borrowers, and lending to microenterprises constitutes an integral part of credit union operations. However, credit union members can borrow only up to three times the value of their savings and shares, and credit unions are forbidden by law to borrow more than 20 percent of their lending resources from external sources. This raises the question of whether many small borrowers or potential borrowers in Belize are actually credit constrained, in light of unmet potential demand caused by the ceilings imposed on borrowing through the sources available to them. The extent to which credit union members are actually credit constrained and whether they are borrowing simultaneously from other financial institutions, pawn shops, or informal creditors is not known and deserves further analysis. Judging by the average size of a credit union's loans in Belize, it is clear that the segment of the market that is serviced in other countries by microfinance institutions is addressed, at least partially, by credit unions in Belize.

3.2.3 Cost of Credit

An even more important issue, though connected with credit access, is the cost of credit in Belize, which is extremely high (see Chapter 1). The weighted-average nominal lending interest rate in Belize has been approximately 14 percent for the last five years, in spite of Belize's long track record of low inflation. This rate is far above the prime lending rate in the United States, to whose currency Belize's currency is pegged (Figure 3.2). More tellingly, it is four to five percentage points above that in other small, open Caribbean countries that have similar monetary and exchange rate policy frameworks (long-standing exchange rate pegs to the U.S. dollar combined with some degree of capital controls).

In part, Belize's high interest rates are related to large spreads between deposit and lending interest rates. Though these spreads declined from

² There are three such indicators measuring sharing of credit information: (1) the *depth of credit information index*, which measures the extent to which the rules of a credit information system facilitate lending based on the scope of information distributed and the ease of access to and quality of information; (2) *public registry coverage*, which reports the number of individuals and firms covered by a public credit registry as a percentage of the adult population; and (3) *private bureau coverage*, which reports the number of individuals and firms covered by a private credit bureau as a percentage of the adult population.

FIGURE 3.2. WEIGHTED LENDING INTEREST RATES IN SELECTED COUNTRIES

Sources: World Bank, *World Development Indicators*, and IMF, *International Financial Statistics*.

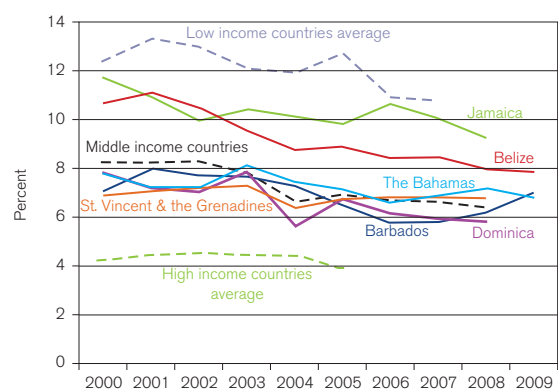
11 percentage points in 2001 to approximately 8 percentage points in 2009, this level is still high compared to spreads in high-income countries and even compared with the average for middle-income countries. However, it is not significantly different from those in other small Caribbean countries with monetary and exchange rate arrangements and economic and legal characteristics similar to those of Belize (Figure 3.3).

The high spread between deposit and lending interest rates in Belize is indicative of high operating costs or inefficiencies in financial intermediation. Reserve requirements are the Central Bank of Belize's primary tool of monetary management and are adjusted to restrict the growth of credit to a level that is consistent with maintaining an adequate level of international reserves and the pegged exchange rate. Commercial banks are

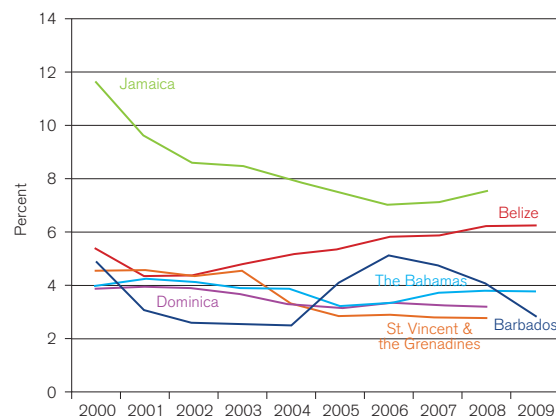
required to hold a cash reserve of 10 percent of deposit liabilities (up from 3 percent in 2003) and liquid assets of 23 percent. As assets held to meet cash reserve requirements are unremunerated (the bank must forfeit the interest it could be earning if it could instead lend the assets) and assets held to meet liquid asset requirements often earn below-market rates (because they are held in government securities, which generally pay lower-than-market interest rates), both requirements constitute an implicit tax on the financial sector (IMF 2008). The high levels required in Belize mean this implicit tax is also high. The cost of reserve and liquidity requirements in Belize was found to be higher than comparable countries even as early as the late 1990s, when Belize's reserve requirements were lower (IMF 1998). If Belize's government were to remunerate commercial banks for their reserves at market interest rates, lending rates on credit to the private sector could fall, with no change to banks' level of profitability. However, government interest payments would rise, requiring an offsetting fiscal adjustment (higher taxes or lower noninterest expenditures). Chapter 1 estimated that Belize's reserve requirements contribute to just under half its interest rate spread, while the International Monetary Fund (IMF) (2008) estimated that up to one-fifth of the spread could be attributed to the reserve requirements.

Randall (1998) investigated high interest rate spreads in the eastern Caribbean, which are probably the closest comparators to Belize and which have spreads very similar to that of Belize (Figure 3.3). She concluded that slightly over half of the amount of the spreads was attributable to high operating costs. The remainder was accounted for by reserve requirements and an implicit return on equity (which was in line with international norms). High operating costs were believed to be largely attributable to the limited market size facing the average bank and consequently a lack of economies of scale.

Although the interest rate spread in Belize is similar to that in other Caribbean countries, there is a striking difference with respect to deposit interest rates. Whereas other low-inflation Caribbean countries have weighted-average deposit interest rates below 4 percent, Belize's weighted-average deposit interest rate is over 6 percent (i.e., 2 to 3 percentage points higher) (Figure 3.4). Since

FIGURE 3.3. INTEREST RATE SPREADS IN SELECTED COUNTRIES

Sources: World Bank, *World Development Indicators*, and the central banks of The Bahamas, Barbados, and Belize.

FIGURE 3.4. DEPOSIT INTEREST RATES IN SELECTED COUNTRIES

Sources: World Bank, *World Development Indicators*; and the central banks of The Bahamas, Barbados, and Belize.

all of these economies, except Jamaica, have had average inflation rates of 2 to 4 percent per annum over the last decade, this implies that the real deposit interest rate (i.e., the weighted-average deposit interest rate minus the inflation rate) in Belize has been around 3 to 4 percent, whereas that in Caribbean comparators has been between 0 and 1 percent. Commercial banks in Belize are competing for a limited supply of national saving by raising their deposit interest rates, which in turn generate higher interest rates on credit.

Interest rates charged by credit unions on their lending are generally 2 to 5 percentage points lower than rates charged by commercial banks, reflecting, among other things, the less costly requirements related to credit unions' safe investments compared with the high cost of reserve requirements that are imposed on commercial banks and the lower deposit interest rates paid to credit union members.

3.3 Policy Options

The diagnosis section of this chapter concluded that the principal challenges in Belize's financial sector are high lending interest rates (caused primarily by high deposit interest rates and to a lesser extent by a large interest rate spread) and weak access to credit for smaller borrowers. This section outlines policy options and international experience in five key areas that are commonly considered solutions to the aforementioned challenges.

3.3.1 Administered Interest Rates/ Financial Restriction

An obvious possible solution to high market interest rates is for the government to require commercial banks to lower their interest rates through legislation, regulation, and moral suasion. One major drawback of this option is that it treats the symptoms but not the disease—it does nothing to increase the supply of national saving. On the contrary, it may actually lower saving, although most empirical evidence suggests that small changes in interest rates have only a minimal impact on saving unless the deposit interest rate is held below the rate of inflation (see Dornbusch and Reynoso 1993). A lower lending interest rate may indeed increase the demand for credit, but since the supply of saving has not changed (or has even diminished slightly), the quantity of credit extended does not increase. Instead, the same quantity of credit has to be rationed in a different manner, and the allocation of credit changes. Once started down this slippery slope, typically the government gets sucked into ever deeper interventions and ends up directing credit, which is usually suboptimal from an allocative efficiency point of view and brings a host of problems related to favoritism and even corruption. Adverse selection problems may occur too as banks steer credit to safer projects with lower rates of return because interest caps prevent them from financing riskier projects with higher rates of return. A second major drawback of an approach involving government-mandated interest rates is that it may encourage disintermediation, as funds leave the formal, regulated financial system and enter informal, unregulated nonbank intermediaries. A third potential problem is that the government may end up having to cover losses incurred by banks due to below-market interest rates and/or credit directed to projects that represent poor credit risks.

3.3.2 Bypassing the Private Financial Sector through a State-Owned Entity

Another option for addressing a lack of credit access and high interest rates is to bypass the private financial sector by creating a state-owned bank or financial institution. Indeed, reliance on state development finance institutions (SDFIs) to ensure

that priority sectors and underprivileged clientele are provided with financial services, particularly credit, was the dominant practice in the developing world until the start of 1990s (Yaron 2004). SDFIs were considered imperative for financing economically warranted operations that were not financially attractive to private, for-profit financial institutions, because of their actual or perceived poor financial outcomes and high-risk operations.

However, international experience with SDFIs led to a reevaluation of their costs and benefits during the 1990s. First, the establishment of an SDFI, like government-dictated lowering of interest rates, does not resolve the fundamental problems that cause high interest rates and a lack of access to finance. It does not increase national saving (it may increase external saving if the SDFI receives funding from external donors/creditors that would not otherwise have been channeled to the country), and it rarely resolves risk or information problems. Second, there is an intrinsic contradiction between the mandate of an SDFI and its financial health. If the SDFI lends to high-quality borrowers, it can protect its financial health, but then it will not fulfill its mandate of extending credit to previously unserved sectors. However, if the SDFI lends to clients shunned by commercial banks, it is very likely to lose money and go bankrupt, because its portfolio is concentrated on high-risk projects/borrowers. If, as is customary, the SDFI's mandate forces it to focus on a limited number of sectors or categories of borrowers, this concentration will compound its lending risks by preventing the spreading of risk over dispersed (relatively uncorrelated) borrowers. Third, given their ownership and lines of accountability, it is difficult (as demonstrated by the evidence from pre-1990s SDFIs in the developing world) to insulate the SDFI from political pressures to lend to well-connected borrowers or to ensure that clients are selected according to technical rather than political criteria. Fourth, the SDFI may face repayment problems, because clients do not consider it necessary to repay a government-owned bank. Fifth, state ownership and the SDFI's not-for-profit mandate may instill a relaxed mindset about financial discipline and efficiency in its management. And finally, the allocation of credit using nonmarket criteria may lead to a decrease in investment efficiency.

The above factors led to a generally poor international experience with SDFIs in the developing world. Micco, Panizza, and Yañez (2004) found that state-owned banks located in developing countries have performed worse than their private counterparts in terms of profitability, levels of nonperforming loans, and overhead costs. Although it is reasonable that SDFIs have lower profitability if they are fulfilling a social mandate and this represents a trade-off, as mentioned above, the lower profitability of the developing-world SDFIs appears largely to have been due to inefficiency and higher operating costs. International experience has also borne out the fear that political allegiance plays a significant role in credit allocation in state-owned banks (Levy Yeyati, Micco, and Panizza 2005). In many countries, SDFIs went bankrupt, necessitating expensive government bailouts, or at a minimum required periodic government infusions. Because the frequent bailouts did not occur routinely every year, the average annual costs of maintaining the SDFIs remained mostly unknown and did not provoke a public debate on the social desirability of supporting the SDFIs (Yaron 2008). There have been a few cases in which an SDFI has managed to avoid financial losses, and Yaron (2008) notes the existence of rigorous econometric studies that indicate that in a few cases, the social gains of well-performing SDFIs exceeded the costs of the subsidies to them. However, Belize's historical experience with the DFC has been in line with the general international experience. The DFC required periodic infusions of capital, and then in the early 2000s, it incurred sizable financial losses that adversely contributed to Belize's economic development by causing a massive misallocation of scarce public resources and contributing to the high level of public debt.

In terms of the macroeconomic consequences of SDFIs, a review of the literature and cross-country experience with state-owned banks found no evidence that the presence of state-owned banks promotes economic growth or financial development (Levy Yeyati, Micco, and Panizza 2005). However, the review also found that the depression of financial sector development and growth cited in previous studies was largely due to state-owned *commercial* banks and that there was insufficient cross-country evidence to conclude that the presence of state-owned *development* banks

negatively affects financial sector development and growth.

If there is to be an SDFI in a country, three factors appear to be important for its success: the nature of the institution's objective and mission, clear accounting regarding the subsidy component and constant evaluation of the institution's mission, and a governance structure entailing (1) operational independence, in order to enable the SDFI to achieve government-determined objectives; (2) long appointments for managers that are not tied to the political cycle, in order to strengthen the SDFI's independence from direct political interference; and (3) a board of directors that represents a wide cross-section of society, in order to strengthen checks and balances and limit the amount of political lending (Levy Yeyati, Micco, and Panizza 2005).

The Belizean government has taken steps regarding the DFC's governance to ensure that the revitalized DFC does not incur massive losses in the future. Insisting that the DFC's performance is meaningfully and routinely evaluated could also improve performance and ensure progress toward meeting the goals established. This approach would eschew an overreliance on traditional financial ratios in evaluating the DFC's performance and rather rely on a performance evaluation framework that uses the assessment criteria of outreach to the target clientele and the institution's self-sustainability (Yaron 2008). Enhanced DFC efficiency could also have been achieved by confining or concentrating its operations in second-tier activities (i.e., limiting DFC lending to for-profit financial institutions and prohibiting it from lending directly to ultimate, retail-level target borrowers). Ensuring transparency related to its costs and subsidies, well-defined products, and efficient servicing of its target clientele is essential for achieving improved DFC performance.

3.3.3 Increasing National Saving

The fundamental solution to high lending interest rates is increased national saving. That is easier said than done, and policymakers' ability to influence private saving, in particular, is weak. However, policymakers can directly affect the level of public saving through government revenue and expenditure policies, and sometimes in a relatively

short period of time. South Korea increased the national saving rate from 4.9 percent of GDP in 1960–64 to 12.9 percent in 1965–69. Dornbusch and Reynoso (1993) attribute this rise in national saving primarily to a fiscal correction and a real depreciation that accelerated export growth. The increased national saving allowed a sharp (almost doubling) increase in the rate of gross fixed investment in the country, and annual GDP growth accelerated from 5.5 percent in 1960–64 to 10.0 percent in 1965–69, setting off the South Korean “miracle.” In Chile, which doubled national saving from 13.4 percent of GDP in 1982–89 to 26.8 percent in 1990–95, the principal agents of saving were private enterprises and the general government. Both theory and evidence suggest that increased public saving is likely to be partially offset by a reduction in private saving. Most empirical estimates of the offset (see Gavin, Hausmann, and Talvi 1997) suggest that it is about 50 percent, that is, that the government needs to increase public saving by two dollars to raise national saving by one dollar. Notwithstanding this offset, increased public saving is the surest way to raise national saving. In the case of Chile, government reform of the social security system also contributed to increased national saving, albeit after a lag. Forced household saving through individual pension accounts introduced in 1981 generated additional saving at a rate of 3.7 percent of GDP by 1994 (Agosin, Crespi, and Letelier 1997).

However, targeting private saving as a policy variable is difficult. There is substantial evidence that high levels of saving are as much a consequence of fast growth as a cause of it (Gavin, Hausmann, and Talvi 1997). Private saving in Asia, including South Korea, and private enterprise saving in Chile increased substantially after several years of high growth. This implies that government policy should be oriented first toward stimulating faster growth and then toward ensuring that faster growth leads to high levels of saving that can sustain that growth (given that high rates of saving are highly correlated with high rates of economic growth over the long run). While such a recommendation may be reasonable in countries where the binding constraint on growth is not low levels of domestic saving, it is highly problematic in countries like Belize where the binding constraint is precisely held to be low levels of saving (Chapter 1). Under such circumstances, the best

option for policymakers appears to be a two-track approach of doing as much as possible to directly raise public saving, on the one hand, while trying to provoke a growth acceleration, perhaps through increased foreign direct investment, on the other.

3.3.4 Lowering the Cost of Financial Intermediation

It is also important to work simultaneously on reducing the cost of financial intermediation in Belize and hence the spread between deposit and lending rates. Three potential avenues exist for lowering the cost of financial intermediation in the country. First, fiscal consolidation would decrease the government's demand for domestic credit, thereby freeing up credit for the private sector and allowing the central bank to reduce reserve requirements.

Second, the central bank has been working with the IMF to investigate the possibility of shifting from a reliance on reserve requirements to market-based instruments of liquidity management. This should allow a reduction of reserve requirements and hence banks' costs, allowing them in turn to reduce the interest rate spread.

The third potential avenue for lowering the cost of financial intermediation in Belize relates to the industrial structure of the country's financial sector. High interest rate spreads are often attributed to a lack of competition in the banking sector. If this were the case in Belize, the policy recommendation would be to encourage new entrants to the marketplace and foster greater competition. However, Randall (1998) concluded that banks in the eastern Caribbean have high operating costs primarily because of the limited market size and their inability to benefit from economies of scale. Given this, instead of recommending that governments seek to attract new entrants, she recommended consolidating the banking sector in order to increase average efficiency by expanding the market size of efficient banks. This implies the merger of inefficient banks into viable entities and the closure of poorly operated government-owned banks. In this light, as well as for reasons of minimizing government's contingent liabilities, a candidate for closure or merger into the DFC is the Small Farmers and Business Bank, a small bank whose nonperforming loans recently

reached 72 percent of its total OLP value, according to its management (Yaron 2008). The bank lends at 10 percent but collects much less, given its extremely high share of nonperforming loans, and it lacks a plan for enhancing recovery in the foreseeable future.

3.3.5 Reducing Information Asymmetries in the Financial Sector

Credit Bureau

Information asymmetries in Belize's financial sector can be substantially mitigated by establishing a well-functioning credit bureau and compelling all financial intermediaries to provide positive and negative information on the loan repayments of their borrowers. Credit registries or bureaus—institutions that collect and distribute credit information on borrowers—can greatly expand access to credit. They gather and supply creditors with vast amounts of personal and financial data about individuals and micro- and small enterprises. By sharing credit information, they help lenders assess risk and allocate credit more efficiently, and they free entrepreneurs from having to rely on personal connections alone when trying to obtain credit. They are considered one of the most important sources of information about the paying habits of consumers and play a central role in the development of financial markets. Creating an effective credit bureau in Belize would decrease the transaction costs of financial institutions and clients, mitigate financial indiscipline, and reduce loan arrears and the rescheduling of loans. It would eventually help to accelerate and increase access to credit for the targeted sector, part of which is now considered not creditworthy by for-profit banks.

Scoring Models

The use of credit-scoring models for borrowers could further reduce transaction costs and facilitate expanded access to credit for the underprivileged. Scoring models use statistical analysis to project the repayment likelihood of potential borrowers based on related data on their age, experience, gender, type of business, and the like. Applying scoring models for lending to clients—

particularly to those that cannot offer effective collateral—has the potential to reduce loan losses and the transaction costs associated with choosing creditworthy clients. For-profit financial institutions and microfinance institutions are increasingly using these models in pursuit of greater loan recovery, lower transaction costs, higher profitability, and outreach to clients that are or can become creditworthy. A pilot project to develop credit scoring for micro-, small, and medium-sized enterprises was carried out in Jamaica in 2008 (Scott Dunkerly 2009). Although it was too early to draw firm conclusions about enhanced access to credit by the time the project ended and was evaluated, indications are that enterprises rated highly would have a better chance of accessing finance. One of the biggest benefits of the project was that in the process of developing the information necessary for obtaining a credit rating, firms generated the information to satisfy lender requirements. In addition, banks appeared to take micro-, small, and medium-sized enterprises more seriously and treat them with greater respect than hitherto. However, early indications also suggest that credit scoring has not resulted in lower collateral requirements in the country to date.

3.4 Policy Recommendations

Expanding on Chapter 1, this chapter has analyzed the principal financial challenges in Belize, which relate to lowering lending interest rates and broadening access to credit. Chapter 1 identified the high cost of domestic finance as the binding constraint on domestic investment and economic growth. Consequently, lowering the cost of domestic finance has a transcendental importance in terms of stimulating private sector development and economic growth. Broadening access to credit is probably less important in terms of stimulating economic growth but has significant social implications. The aforementioned diagnosis and assessment of various policy options lead to a number of policy reform recommendations, outlined in the following subsections.

3.4.1 Sustained Fiscal Consolidation

As diagnosed in Chapter 1, the fundamental way to reduce deposit interest rates (and hence

lending interest rates) is to boost national saving through a sustained fiscal consolidation. Chapter 2 delineated recommendations for such a fiscal consolidation, which will not be repeated here. However, it is worth noting that two additional financial sector issues underscore the necessity for fiscal consolidation. First, the implicit tax on the financial sector through unremunerated reserve requirements imposed on commercial banks disguises an element of fiscal weakness in the country that could be remedied through fiscal consolidation. Shifting monetary policy management away from unremunerated reserve requirements to government securities remunerated on a market basis (see below) would lower the costs to commercial banks (and thereby hopefully reduce interest spreads), but it would increase interest costs for the government, which in turn would need to be offset through fiscal adjustment. Second, Belize's Social Security Board is one of the biggest depositors in the country's financial system, and currently its solvency depends on receiving high (around 8 to 9 percent) returns on its deposits. Therefore, success in reducing interest rates would imply higher contributions or parameter changes to ensure the social security system's future solvency.

3.4.2 Decrease Dependence on Reserve Requirements

Belize's central bank should continue its work to shift from a reliance on reserve requirements to market-based instruments of liquidity management. This should allow a reduction of reserve requirements and hence the cost of financial mobilization relative to the gains from lending, thereby allowing commercial banks to reduce the interest rate spread.

3.4.3 Foster Increased Private Saving

Although government has much less influence over private saving than public saving, it could nevertheless be useful to explore avenues for stimulating increased private saving in Belize. It may be possible to strengthen the incentive to save, particular for sizable and foreseeable purchases, like housing and education (Yaron 2008). Provision of basic financial education in Belize's schools might help to foster a culture of saving in the country.

3.4.4 Financial Sector Consolidation

Randall's (1998) analysis of the eastern Caribbean suggests that economies of scale may lead to reductions in average unit cost if the market size of efficient banks increases. Although the scope for consolidation in Belize's already small financial sector is limited, possibilities may exist on the margin. The Small Farmers and Business Bank is a prime candidate for closure or merger with the DFC.

3.4.5 Establish a Credit Bureau

The establishment of a well-functioning credit bureau in Belize could substantially mitigate problems related to asymmetric information in the country's financial sector and reduce creditors' overreliance on collateral. It would be worthwhile to enact appropriate legislation so that the legal preconditions for a credit bureau to operate can be met. Credit bureau legislation would have a twofold purpose:

- To facilitate national credit bureau creation in order to make more information about potential debtors available to creditors from a trusted third party.
- To regulate, but not overregulate, the credit bureau so the public's legitimate rights are protected in the information-gathering and -storing process. Credit bureau legislation would allow creditors to use more relevant criteria in deciding who obtains credit, offer lower interest rates, and make larger loans and for longer periods.

3.4.6 Improve Information for Small and Medium-Sized Enterprises

The introduction and use of credit-scoring models—particularly for those that cannot offer effective collateral—has the potential to help banks identify creditworthy clients, reduce transaction costs, and broaden access to credit.

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Part II

Challenges and Opportunities in the Productive Sectors

Trade Sector: Exporting for Growth

4.1 Introduction

Belize's location at the geographic crossroads of Central America and the Caribbean has economic, cultural, and historical analogues. Although it is located in Central America, Belize has sought to establish closer political and economic ties with the English-speaking Caribbean countries. Indeed, Belize joined the Caribbean Community (CARICOM) in 1974, well before gaining full independence in 1981. Historically, Belize's economy has been dependent on a few agricultural products and travel services. More recently, the country has been attempting to increase trade relations with its Central American neighbors; Belize is a member of the Central American Integration System (SICA) as well as other Central American organizations.¹

Belize has enjoyed high growth in recent years, driven primarily by expansionary government fiscal policies. These policies were not sustainable in the long run, and the government's subsequent austerity measures partly explain the recent decrease in gross domestic product (GDP) growth. Export-led growth is generally advisable for small economies, and as the government's ability to stimulate growth via expansionary fiscal policy becomes more constrained, the export sector will be increasingly important as an alternative engine of growth, and foreign direct investment as a source of finance, for Belize during this period of fiscal austerity.

However, Belize's size, geographical location, and concentration in agricultural products make both its export sector and its economy as a whole vulnerable to both internal and external shocks, which may take the form of hurricanes and other natural disasters, price fluctuations, and viruses and pests. In addition, the competitiveness of many Belizean exports is dependent on trade preferences, particularly the European Union's banana and sugar programs. Belize has diversified into additional products in recent years as well as services, led by tourism. Continued export diversification will reduce these risks, provided this process takes place in accordance with the country's comparative advantage.

Although Belize is well positioned to further its exports in several agricultural and services products, it faces four main constraints on growing through exports: institutional capacity for trade policymaking and implementation, trade-related infrastructure, access to capital, and export promotion.

The chapter's next section examines Belize's trade patterns and analyzes the country's trade performance, including the performance of strategic product and services sectors. The third section explores Belize's trade policy framework, including trade relations with CARICOM, Latin American, and major international trading partners and potential trading partners such as Mexico and countries in Central America. The fourth section analyzes and proposes policy recommendations regarding key constraints

¹ These include bodies such as the Central American Commission on Development and the Environment, the Council of Ministers of Tourism, and the Central American Civil Aviation Agency. Belize is not, however, a member of the Central American Economic Integration System (SIECA).

on trade performance, including trade-related institutions, trade finance, trade facilitation, and export promotion. The final section concludes.

4.2 Assessing Belize's Trade Performance

4.2.1 Overview of Belize's Merchandise Trade Patterns

External trade has always been an important driver in the Belizean economy. Trade accounted for 108 percent of GDP in 2009 (see Figure 4.1). During 1995–2008, annual growth in exports of goods and services averaged 7.2 percent, and imports grew 8.4 percent annually. Merchandise exports and imports increased at respective annualized rates of 5.7 and 9.5 percent. Since 1984, the earliest year for which data are available, Belize has not had a positive external goods balance; in 2008, the merchandise trade deficit was US\$316 million. By contrast, services, led by the tourism sector, have produced strong surpluses, at US\$217 million in 2008. The overall current account defi-

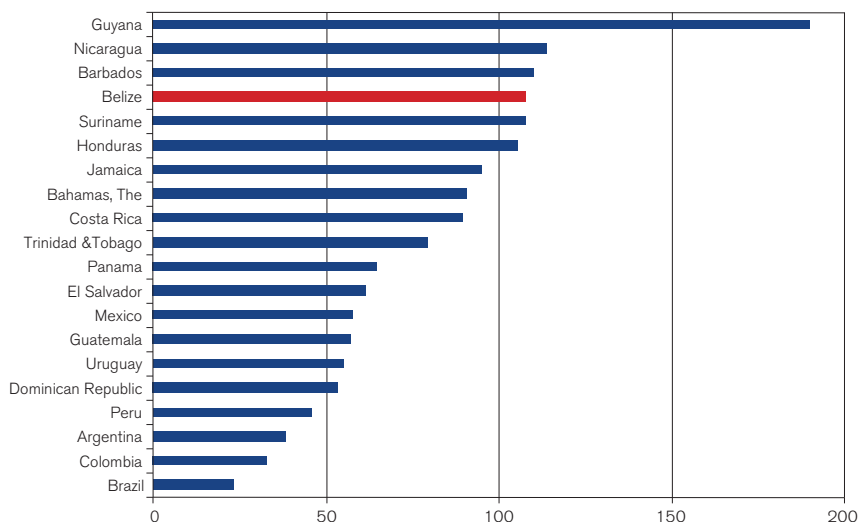
cit, after shrinking from 13.6 percent of GDP in 2005 to 2.1 percent of GDP in 2006, deteriorated to 10.2 percent of GDP in 2008.²

Although Belize's merchandise export growth was stagnant at the beginning of the decade, its performance has accelerated in the past few years, and goods exports grew an average of 6.0 percent annually in 2000–2008.³

Around three-quarters of Belize's goods exports are destined for the United States, the European Union, or CARICOM. A substantial part of this export activity takes place in the context of preferential agreements. The dependence of certain export sectors on preferences in these markets might be cause for concern, as the preferences are likely to erode in the future.

The United States is Belize's most important export market, and its share of Belizean merchandise exports was 45 percent in 2008. Whereas the European Union's share has steadily declined, it nevertheless accounted for more than 27 percent of Belize's exports in 2008.⁴ Its exports to the

FIGURE 4.1. TRADE OPENNESS IN LATIN AMERICA AND THE CARIBBEAN, 2009



Source: IDB (2009).

Note: Figure shows total trade in goods and services (imports and exports) as a percentage of GDP. Calculations are based on data from the World Bank's *World Development Indicators*.

² The following data sources are used in this paragraph: the United Nations Commodity Trade Statistics database (UN Comtrade) of the United Nations Statistics Division (UNSD) of the Department of Economic and Social Affairs (DESA) (merchandise trade data); International Monetary Fund, *Balance of Payments Statistics* (December 2009) (services data); International Monetary Fund, World Economic Outlook database (October 2009) (current account as percentage of GDP).

³ Calculations based on UN Comtrade database.

⁴ IDB Integration and Trade Sector calculations based on UN Comtrade database.

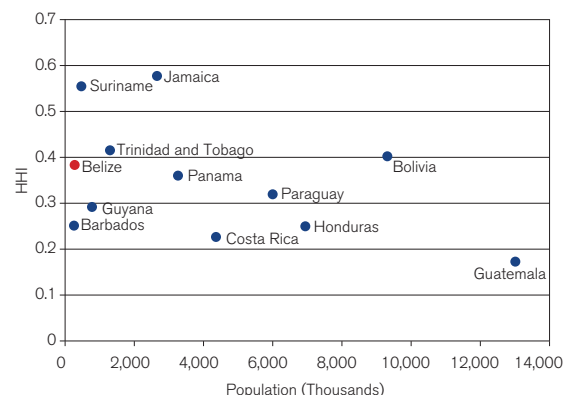
European Union consist mainly of bananas and sugar, and the recent decline in the share of exports destined for Europe reflects the declining relative importance of the sugar industry. Exports to CARICOM stood at 5 percent in 2008. Trade with CARICOM is relatively concentrated on a few countries and a few products: in 2008, Jamaica and Trinidad and Tobago accounted for almost 80 percent of Belize's intraregional exports.⁵

The share of Belize's exports destined for Latin America grew from 1 percent in 1995 to nearly 21 percent in 2008. Exports to Central America grew faster than those to any other region during 2000–2008, largely a result of petroleum exports to the region. Exports to Mexico also grew over the same period, averaging 16 percent growth per year, driven overwhelmingly by crustacean exports. Exports to Guatemala are still small yet dynamic, led by petroleum and cross-border trade in agricultural products. Although Belize has large trade deficits with both Mexico and Central America, exports to these regions are generally growing much faster than imports.

With its low population density, Belize is relatively land abundant compared with most of its Caribbean and Central American peers, which lends itself to Belize's serving as a regional breadbasket. However, the country's relatively sparse population (322,000, with one of the lowest population densities in the world) also contributes to high transport costs, while its remoteness in shipping lines complicates efforts to expand agricultural exports to the Caribbean. Nevertheless, this problem is less relevant in regard to its neighbors in Central America and Mexico because they share a land border. Thus, structural scheduling delays do not play a role in exports to these countries, and trade with them can be expanded so long as the major highways are accessible year round.

Belize's merchandise exports are highly weighted toward primary products. Between 2000 and 2008, food (mostly sugar, bananas, citrus concentrate, and shrimp) made up 78 percent of the country's total goods exported. Fuels, the second-

FIGURE 4.2. HERFINDAHL-HIRSCHMANN INDEX AND POPULATION, 2006



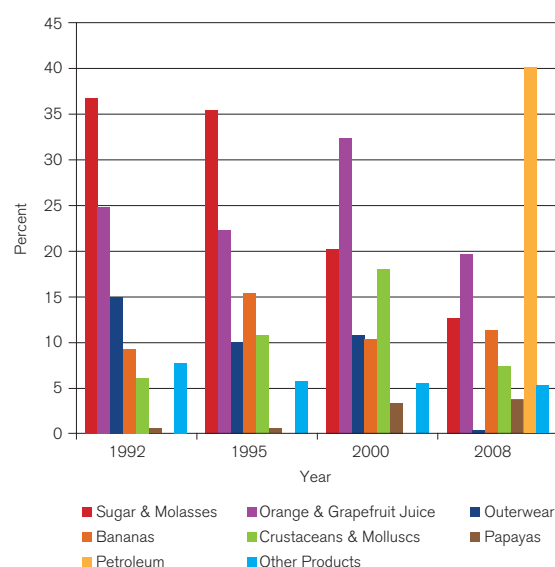
Sources: Normalized Herfindahl-Hirschmann Index from UNCTAD (2008); population data from the World Bank's *World Development Indicators*.

largest export product sector, made up 12 percent of merchandise trade, while manufactures accounted for another 7 percent. Agricultural raw materials and ores and metals together made up less than 1 percent of merchandise trade.⁶ Belize's relative export concentration is shown in Figure 4.2, which plots the Herfindahl-Hirschmann Index (vertical axis) and the population (horizontal axis) of various countries. Countries with trade more highly concentrated in a smaller number of products have higher values on this index. The figure shows that although Belize's trade is highly concentrated, it is not exceptionally so when population is controlled for; as such, its challenges with diversification are not uncommon among smaller countries. Furthermore, these calculations include only goods exports, and tourism services diversify the country's exports further, although the country's services exports are similarly quite concentrated in this single sector.

Belize's exports can basically be categorized into three broad sectors: sugar, other traditional exports (citrus juice, bananas, and apparel), and nontraditional exports (crustaceans, papayas, and other products). Over time, sugar has become less prominent relative to citrus juice and bananas; more recently, nontraditional exports have increased their profile (see Figure 4.3) (Devoto

⁵ Likewise, sugar, fruits, and vegetables alone accounted for more than 80 percent of exports to these two countries.

⁶ Following the United Nations Conference on Trade and Development (UNCTAD) Handbook of Statistics (<http://www.unctad.org/statistics/handbook>), merchandise trade is categorized according to six broad categories. Similarly, when analyzed in terms of the technology content aggregates developed by Lall (2000), Belize's goods exports are dominated by lower-technology products. In 2006, exports of primary products and resource-based manufacturing represented 50 and 42 percent of total goods trade, respectively.

FIGURE 4.3. PRODUCT COMPOSITION OF BELIZEAN EXPORTS

Source: IDB Integration and Trade Sector calculations based on the United Nations Commodity Trade Statistics database (Comtrade) of the United Nations Statistics Division (UNSD) of the Department of Economic and Social Affairs (DESA).

2006). In 2008, six product groups accounted for some 95 percent of merchandise exports: petroleum (40 percent), orange and grapefruit juice (19 percent), crustaceans and mollusks (7 percent), sugar and molasses (13 percent), bananas (11 percent), and papayas (4 percent).⁷

4.2.2 Developments in Selected Product Sectors

Sugar, including sugar-based manufactures, such as molasses, has lost some of its importance in Belize's exports. Nonetheless, sugarcane production accounts for about half of the arable land in Belize (Economist Intelligence Unit 2006). In 1995, sugar was the country's top export revenue earner, but it has recently fallen behind citrus, crustaceans, and petroleum. Its importance decreased from 35 percent of merchandise trade in 1995 to 13 percent in 2008.⁸ The decline may be attributable to decreasing prices, natural disasters, and limited improvements in Belize's competitiveness in the industry.

The European Union is Belize's most important market for sugar—the United Kingdom alone imported more than 50 percent of Belize's total sugar exports to the world during 2004–2008. In the past, these exports entered the European Union primarily under the African, Caribbean and Pacific (ACP)/European Union Sugar Protocol, which included a guaranteed minimum price for sugar within a specified quota, and secondarily under the Special Preferential Sugar program, which allowed additional sugar to enter the European Union within smaller quotas and somewhat reduced minimum prices.⁹ The European Union began implementing reforms to the Sugar Protocol in 2006 in the form of a series of price reductions designed to result in a cumulative 36 percent decrease by 2010. The Economic Partnership Agreement between the Caribbean Forum of African, Caribbean, and Pacific States (CARIFORUM) and the European Community, which took effect January 1, 2008, provides for duty-free and quota-free access for sugar after two years. This is problematic for Belize in that individual countries no longer receive dedicated quotas but rather share market access, and thus compete, with other, lower-cost African, Caribbean, and Pacific exporters.

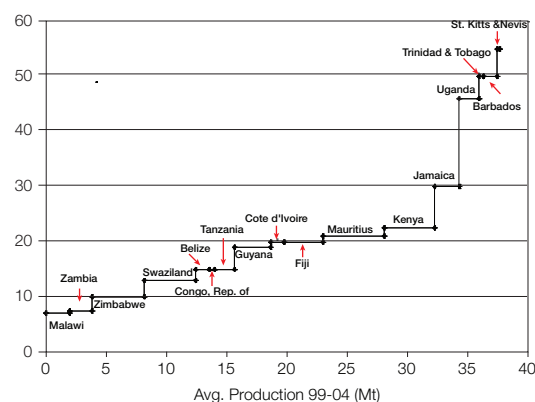
Although Belize is one of the most competitive sugar-producing countries in CARICOM, sugar production in the country is hindered by the lack of scale economies. Inefficiencies in sugar production in Belize stem more from productivity issues than from the land constraints affecting other producers in the region. Small-scale farms (those occupying less than 25 acres of land) account for an overwhelming majority of the country's sugar exports (WTO 2004).

Figure 4.4 shows a cost curve in which countries are situated in ascending order of production costs. The length of the line associated with a particular country represents its average production over five years. This is generally based on the method used in a study conducted by LMC International and Oxford Policy Management,

⁷ IDB Integration and Trade Sector calculations based on UN Comtrade database. It should be noted that varying levels of product aggregation have been used in order to present products in a more intuitive manner. The products are defined according to the Standard International Trade Classification (SITC), Rev. 2, as follows: petroleum (333 + 334), orange and grapefruit juice (05851 + 05852), crustaceans and mollusks (036), sugar and molasses (0611, 0612, 0615), bananas (0573), outerwear (842, 843, 845), and papayas (Harmonized System code 080720).

⁸ IDB Integration and Trade Sector calculations based on UN Comtrade database.

⁹ African, Caribbean and Pacific Sugar Group website: <http://www.acpsugar.org/SPS.html>.

FIGURE 4.4. CUMULATIVE COST CURVE OF ACP SUGAR PRODUCERS

Source: Authors' calculations based on production cost data from Garside et al. (2005) and production data from the Statistical Database of the UN Food and Agriculture Organization (FAOSTAT) (<http://faostat.fao.org/>). The methodology was adapted from LMC International and Oxford Policy Management (2003).

although that study uses an index of production costs, while here an absolute level of production costs is used.¹⁰ Using either measure, however, its cost structure is quite high when compared with those of major world exporters with which Belize must now compete for access to the European Union market. It should be noted that this assessment is based on the current cost structure and that, unlike the sugar industries of some other Caribbean countries, Belize's sugar industry may be restructured to improve its competitiveness. Some natural consolidation of the industry is also expected as some smaller and less efficient producers exit. There is also some potential for crop rotations between sugar and other products.

Meanwhile, sales to the United States have stagnated since 2000, although the United States increased Belize's sugar quota in 2006 because of shortages resulting from Katrina-related damage. Belize has had more recent success in exporting sugar within the CARICOM region, including to Jamaica and Trinidad and Tobago.

The performance of other Belizean food and agricultural exports has been mixed. Banana exports (nearly all of which are destined for the

European Union) grew at an average annual rate of 7 percent during 2000–2008 and make up 11 percent of the country's goods exports to the world. As with the case of sugar, Belize is no longer allocated a dedicated quota following the Economic Partnership Agreement, but rather accesses the European market alongside lower-cost ACP banana exporters, such as Cameroon and Côte d'Ivoire; however, the duty-free, quota-free framework for bananas took effect immediately, without the two-year delay incorporated into the sugar agreement. Belize will face still more competitive pressures in the European market following the conclusion of an agreement that would reduce EU duties on Latin American bananas (European Commission Directorate-General for Trade 2009).

The country's citrus exports have fared better in light of favorable prices. Citrus production in Belize is made up mainly of oranges (81 percent) and grapefruit (19 percent), most of which are processed into concentrate. Although severely damaged by Hurricane Iris in 2001, the industry has grown rapidly since, and total exports of orange and grapefruit juice to the world stood at US\$57 million in 2008.¹¹

Belize's exports of other traditional products have been more stagnant. Apparel exports are negligible following the 2008 shutdown of Williamson Industries, the main garment producer in Belize (Economist Intelligence Unit 2008a, 2008b; Ramos 2008). Although Belize has a history of timber production, wood exports have remained relatively flat, and Belize's forestry resources are now viewed as having more economic potential vis-à-vis ecotourism, as a result of the natural beauty of many Belizean forests (Economist Intelligence Unit 2006).

Nontraditional agricultural and marine products have played an increasingly important role in Belize's exports in recent years; seafood and fish, papayas, beans, hot sauce, toilet paper, and live animals are among the most successful of these. After experiencing strong growth in sales from the mid-1990s through the early part of this decade,

¹⁰ The ordering of countries is somewhat different as well: although Belize is found with the majority of its ACP peer group in the central flat area of costs in both cases, it is at the far right part of this zone in the LMC-Oxford analysis, right before the curve starts rising sharply for additional marginal producers.

¹¹ IDB Integration and Trade Sector calculations based on UN Comtrade database.

shrimp exports have fallen off recently as a result of increased international competition. Most of Belize's crustacean exports are to the United States. Previously rapid growth in crustacean exports destined for Mexico has reversed amid complications in exporting shrimp on ice to Mexico and a decline in the volume of shrimp production arising from financial troubles at the largest shrimp producer in Belize (Chamber of Commerce and Industry 2007; Musa 2007; Ramos 2007; Shrimp News International 2007). Fish, including tilapia, are primarily exported to the United States, with much of the remainder going to Mexico. Belize also exports smaller amounts of other crustaceans and mollusks such as lobsters and conch.

Papayas are one of the main export success stories for Belize over the past decade and continue to be a crop of increasing importance. Exports rose from around US\$0.5 million in 1995 to more than US\$15 million in 2006, but the industry has subsequently suffered in the wake of Hurricane Dean, with crop losses estimated at US\$11.25 million (Ramos 200a). Nevertheless, Belize continues to be the second-largest supplier of papayas to the United States, after Mexico.

Belize also exports beans, mainly black-eyed peas and red kidney beans, with the noteworthy development of new markets such as the United Arab Emirates and Saudi Arabia. These exports have recovered following a decline in production in 2006 resulting from adverse weather conditions and excess supply from previous years (Central Bank of Belize 2007, 2008, 2009). Some soybean production is also taking place, particularly in the north of the country. The hot sauce industry, led by export sales from Marie Sharp's Limited and Agro World Limited, has also been successful (Beltraide 2004). The industry has benefited from an increase in the world price of pepper sauces; the great majority of the country's condiment exports were to the United States and Japan.

Perhaps the development with the largest potential impact on Belize's trade is the 2005 discovery of petroleum in the Spanish Lookout area of the Cayo District, which has proven reserves of approximately 10 million barrels (Central Bank of

Belize 2007). Petroleum exports rose to nearly 1.2 million barrels in 2008 (Central Bank of Belize 2009).¹² Although Belize's petroleum exports are small compared with those of Mexico or even Guatemala, the revenues may have a significant impact on the Belizean economy, given the size of the economy and population.

The renewable fuels industry in the country also has potential, due largely to market opportunities for ethanol in the United States and preferential status for Belize's exports in this area; an international agricultural company, Blue Diamond Ventures, plans to build a 3.5 million gallon per year ethanol plant and a 5 million gallon per year bio-diesel facility in Belize (GRAINNET 2006; Blue Diamond Ventures 2006). Regardless of the level of industry growth that materializes, any potential ethanol exports to the United States rest on somewhat unstable ground: greater protectionist pressures from U.S. producers could risk the loss of existing preferences extended under the Caribbean Basin Initiative, while a more liberalized U.S. ethanol policy could mean greater competition from highly efficient countries, such as Brazil.

4.2.3 Competitiveness of Goods Sector in World and Major Markets, Including Market Shares

Belize's fertile land provides it with a broad comparative advantage in agriculture and agricultural industry and an opportunity in some cases to grow organic products at costs comparable to those of their nonorganic counterparts. Belize is thus well positioned to compete in niche markets in which consumers are developing more-sophisticated tastes and a preference for goods such as organic produce (e.g., Belize's certified organic oranges, cocoa, and rice) and fair trade products. Pursuing this avenue would help Belize escape the trap that often plagues primary goods producers by allowing the country to "brand" its exports, in a sense differentiating its products from similar goods, and thus insulating these producers somewhat from the lowest-cost competition that characterizes commodities markets.

¹² According to calculations based on data from the U.S. International Trade Commission Interactive Tariff and Trade DataWeb (US-ITC DATAWEB) (<http://dataweb.usitc.gov/>), 2008 petroleum exports to the United States reached US\$91 million, accounting for more than half of Belizean exports to that country.

Because Belize has a very small percentage of world market share, it is difficult to analyze the country's export competitiveness, and difficulties obtaining robust statistics further complicate performing some traditional measures. Aside from Trinidad and Tobago's exceptional fuel-driven export growth, Belize has generally outperformed its CARICOM peers, largely because Belize's factor endowments differ from those of CARICOM as a whole, in that Belize is land-abundant. However, Belize's Central American location limits the usefulness of comparisons solely with CARICOM. In particular, Belize has high labor costs compared with its Central American neighbors.

Belize not only has integrated with CARICOM members, but has also made efforts to integrate with its Spanish-speaking neighbors by becoming a member of SICA, the regional integration movement of Central America, in 2002. At the same time, improvements in transportation links between Belize and its neighbors should help boost intraregional trade. It currently has a partial-scope agreement with Guatemala; any future expansions of the agreement could lead to additional reductions in barriers to trade. The negotiation of comprehensive bilateral agreements with Mexico and other Central American countries might further benefit Belize.

4.2.4 Trade in Services: General Performance

Belize's net external services balance is strongly positive and has been since the early 1990s, allowing the country to run a regular merchandise deficit. Belize's services exports, led by tourism, grew at an annual rate of 12.3 percent during 2000–2008, reaching a value of US\$386 million. The services sector's share in total employment, which stood at 62 percent in 2005, gives evidence of the sector's importance in the country's economy.¹³ The vibrancy of the sector has been a contributing factor in reducing the country's

unemployment rate from in recent years (Central Bank of Belize 2007, 2008, 2009).

The travel industry, led by tourism, has accounted for about 70 percent of Belize's total services exports since the late 1990s.¹⁴ Belizean travel services exports have more than doubled since 2000, reaching a value of US\$278 million in 2008.¹⁵ Transportation, other business, and government services exports were also important; during 1995–2008, they accounted for 7.7, 9.3, and 8.6 percent of total services exports, respectively.

4.2.5 Trade by Major Services Sectors

The importance of tourism in the Belizean economy continues to grow. Belize has been able to brand itself as a unique destination with a variety of activities (Beltraide, n.d.-a), and the performance of its tourism sector has been strong in comparison with other Caribbean destinations. Its natural beauty, renowned diving areas, and archaeological sites help to explain why tourism has flourished and why 30 percent of tourist arrivals are by repeat visitors (Beltraide, n.d.-a).

The United States is the largest source of travelers to Belize. In 2008, it accounted for almost 60 percent of Belize's stopover arrivals and the vast majority of its cruise passenger arrivals. Europe provided 14 percent of Belize's stopover arrivals in 2008, Canada just over 7 percent, and other countries (mainly those of Central America) 19 percent. Tourist arrivals from the United States, the European Union, and Canada grew at respective annual rates of 4, 3, and 8 percent during 2000–2008.¹⁶

Belize is a newcomer in the field of international financial services. The country's 1990 International Business Companies Act offers benefits to providers of international financial services in the form of tax exemptions (Economist Intelligence Unit 2006).

¹³ Calculations based on data from the World Bank's World Development Indicators, the International Monetary Fund's Balance of Payments Statistics, and the International Labour Organization's LABORSTA Internet database (<http://laborsta.ilo.org/>).

¹⁴ According to the World Trade Organization, tourism/travel services consist of services provided by hotels and restaurants, travel agencies, and tour operators, tourist guide services, and other related services.

¹⁵ Calculations based on International Monetary Fund, Balance of Payments Statistics (December 2009).

¹⁶ IDB Integration and Trade Sector calculations based on Caribbean Tourism Organization data.

Belize's incipient information and communications technology (ICT) industry is also growing, notably in the fields of software development, online gaming, offshore data processing, and call centers (Beltraide 2007). The government's commitment to the development of the ICT industry is reflected in the deregulation of the telecommunications market and in its investment in the DataPro e-Business Park in 2000 to make its export services in this area more attractive (World Bank 2009).

4.2.6 Competitiveness of Services Sector in World and Major Markets

Belize's proximity to the United States and its English-speaking population give the country

a competitive advantage, in terms of its exportable services, in U.S. markets and those of other English-speaking countries. Thus, the services sector offers Belize an opportunity to diversify away from its traditional (and more vulnerable) exports. Belize's business-friendly government has encouraged the growth of services exports through investments and legislation enticing investors in these sectors. In addition, the government has restored archeological sites with the assistance of the IDB, invested in a marketing consulting company, and expanded its airport runways to accommodate the landing of larger aircraft, capable of transatlantic flights. All of these have helped to improve the competitiveness of Belize's services exports in world markets.

TABLE 4.1. CARICOM COMMON EXTERNAL TARIFF AND CUSTOMS DUTIES APPLIED BY BELIZE

(simple average, percent)

HS Section	Simple Average (%) Description	CET	Belize
01	Live Animals/Products	27.3	27.2
02	Vegetable Products	19.3	20.1
03	Animal/Vegetable Fats	26.1	22.8
04	Processed Foods/Tobacco	16.8	17.9
05	Mineral Products	4.3	6.6
06	Chemical/Industrial Products	5.0	6.7
07	Plastics/Rubber	7.3	7.8
08	Animal Hides/Skin	9.1	10.2
09	Wood/Wood Articles	8.4	11.9
10	Paper/Cellulose Material	6.5	8.2
11	Textiles	9.7	11.2
12	Footwear/Misc. Articles	15.8	16.2
13	Stone/Glassware	8.8	10.7
14	Precious/Semi-Precious Metals	12.5	28.0
15	Base Metals	5.5	6.5
16	Machinery/Electrical Equipment	5.6	7.1
17	Motor Vehicles/Vessels	4.4	10.6
18	Precision Instruments	8.1	12.7
19	Arms/Munitions	18.6	28.5
20	Misc. Manufactured Articles	14.9	15.9
21	Art/Antiques	20.0	20.0
	Average Tariff (%)	9.6	11.3
	Standard Deviation	11.0	11.4

Source: For common external tariff, IDB Integration and Trade Sector calculations using data from CARICOM's Office of Trade Negotiations; for Belize's national applied tariffs, the United Nations Conference on Trade and Development Trade Analysis and Information System (UNCTAD-TRAINS).

Note: Data on common external tariffs are aggregates of the version based on the 2002 version of the Harmonized Commodity Description and Coding System (Harmonized System 2002); Belize data are for 2006. CET = common external tariff.

4.3 Trade Policy Framework

4.3.1 Belize's Treatment of Imports

As noted earlier in the chapter, Belize became a member of CARICOM in 1974. The country is one of the 12 CARICOM member states that have enacted into domestic law the Revised Treaty of Chaguaramas establishing the CARICOM Single Market and Economy (CSME), which entered into force on January 1, 2006. Thus it has committed itself to a common market and common external tariff under the framework of the CSME, as well as trade policy coordination with its fellow CARICOM member states. Belize is considered a less-developed country and a disadvantaged country within CARICOM,¹⁷ entitling it to exemptions from intraregional liberalization in regard to selected sensitive products (IDB 2006).

Belize is in the process of putting measures in place to implement the CSME. The country is in the fourth phase in the implementation of the common external tariff, has completed action to facilitate the free movement of persons, has taken action to remove restrictions on the provision of services, and is in the process of removing restrictions on the free movement of capital and the right of establishment. Table 4.1 presents Belize's tariff profile by Harmonized System section.

Although the pattern of Belize's tariffs clearly follows that of the common external tariff, Belize's derogations from the common external tariff are also clear in the section averages. Belize currently imposes a revenue replacement duty on certain Community-originating products as well as an environmental levy, and elimination of the discriminatory application of these duties is necessary for Belize to implement fully the free movement of

goods (CARICOM Secretariat 2007).¹⁸ In addition to removing the barriers to trade and restrictions on goods, services, capital, and labor, Belize will have to put measures in place in additional areas to consolidate further the CSME, as the region plans to complete the transition to a single economy by 2015.¹⁹

According to the Customs and Excise Department, Belize also applies nonautomatic licensing on a number of products prior to import: rice; beans; eggs; flour; certain fruits and vegetables; certain meat and poultry products; sugar and molasses; jams, jellies, and pepper sauce; dry pasta; peanuts; aerated beverages; citrus and beverages containing citrus; beer; corn; milk; and animal feed; as well as some industrial goods such as wood products, fuels, and cleaning agents, inter alia. There is currently no one-stop principle with regard to import licenses, creating even more of an obstacle to trade.

4.3.2 Treatment of Belize's Exports in International Markets

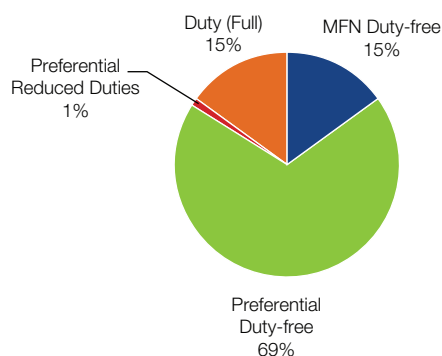
Belize enjoys generally good access to most of its major export markets, and nearly 85 percent (by value) of its exports to these markets enter their destinations duty free, as shown in Figure 4.5. However, the unilateral preferential programs benefiting CARICOM countries are subject to possible withdrawal, and Belize's trade position in three of its major markets (CARICOM, the European Union, and the United States) is susceptible to preference erosion as a result of liberalization via regional or multilateral trade agreements.

Belize receives substantial preferences in the CARICOM market. Competing imports from outside the region generally face high tariffs for the most prominent exports to other CSME

¹⁷ CARICOM's more-developed countries are The Bahamas, Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago; CARICOM's less-developed countries are Antigua and Barbuda, Belize, Dominica, Grenada, Haiti, Montserrat, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines. CARICOM also classifies some member countries as disadvantaged, for reasons of economic size, structure, and vulnerability. Belize is considered to be both a less-developed and a disadvantaged country, according to CARICOM's classification system.

¹⁸ According to the Customs and Excise Department, under the Revenue Replacement Duty (Consolidated) Order (2005), products subject to the revenue replacement duty include sugar confectionary not including cocoa; perfumery, cosmetics, and toiletries; automobiles, trucks, and tractors; cameras; watches; certain beverages; cigarettes; fuels; fertilizer; doors, windows, their frames, and hurricane storm shutters; dehydrated coconut products; certain processed meats; jams and jellies; ice cream (from non-CARICOM countries); peanut butter; building blocks; jewelry and articles of goldsmiths; and arms and ammunition and their parts.

¹⁹ See Address by the Rt. Hon. Owen Arthur, Prime Minister of Barbados and Chairman of CARICOM, at the Opening Ceremony of the 28th CARICOM Heads of Government Conference, Barbados, July 1, 2007.

FIGURE 4.5. TREATMENT OF BELIZE'S EXPORTS IN MAIN MARKETS

Sources: IDB Integration and Trade Sector calculations based on data from the U.S. International Trade Commission Interactive Tariff and Trade DataWeb (USITC DATAWEB) (<http://dataweb.usitc.gov/>), Eurostat, the United Nations Conference on Trade and Development Trade Analysis and Information System (UNCTAD-TRAINS), and the CARICOM Secretariat. Trade shares are based on data from the United Nations Commodity Trade Statistics database (Comtrade) of the United Nations Statistics Division (UNSD) of the Department of Economic and Social Affairs (DESA) and the CARICOM Secretariat.

Note: The analysis presented in the figure covers merchandise exports to the three largest export markets in which Belize receives preferences (CARICOM, the European Union, and the United States), which together account for about 77 percent of total merchandise exports and are used as a proxy for the latter. MFN = most-favored nation.

countries: citrus juice (common external tariff of 40 percent), legumes (40 percent on red kidney beans, 40 percent on fresh black-eyed peas, and 15 percent on dried black-eyed peas), toilet paper (15 percent), and crustaceans (40 percent). Whereas application of the common external tariff on sugar is suspended (i.e., each CARICOM country can apply its own tariff), Jamaica and Trinidad and Tobago, Belize's main regional export destinations, apply national most-favored nation rates of 40 percent on sugar imports originating from outside the CSME. Reductions in the CARICOM common external tariff in the course of free trade agreements or tariff concessions in multilateral fora could therefore result in preference erosion for Belize, although exports to CARICOM are smaller than those to the United States and the European Union.

Like the other African, Caribbean, and Pacific states, Belize traditionally received preferences from the European Union under the Cotonou Agreement, a broad economic and development

partnership agreement. As a result of the need to replace unilateral preferences with reciprocal trade agreements compliant with Article XXIV of the General Agreement on Tariffs and Trade (GATT), the Cotonou Agreement was allowed to expire at the end of 2007 and was replaced by Economic Partnership Agreements between the European Union and ACP regions, which entered into force on January 1, 2008 (see Section 4.2.2). Belize negotiated the Economic Partnership Agreement in the CARIFORUM framework along with other CARICOM members and the Dominican Republic.

Belize's position in the European Union market became more uncertain with the Economic Partnership Agreement, as its top two European Union exports, bananas and sugar, traditionally received more favorable benefits under ACP regimes than they are afforded under the agreement. The outcome for the sugar regime in particular has unambiguously become less promising (see Section 4.2.2). These two products respectively accounted for 40 and 33 percent of European Union imports from Belize in 2006. Rounding out the top five export goods were shrimp, grapefruit juice, and orange juice, all of which had also entered the European Union duty free under ACP and now under the Economic Partnership Agreement, compared with most-favored nation rates of 12 percent or so.

Belize currently enjoys preferential market access in the United States and Canada through unilateral preference programs. Market access to the United States is provided through the Caribbean Basin Initiative, which includes the Caribbean Basin Economic Recovery Act (CBERA) and the more recent Caribbean Basin Trade Partnership Act (CBTPA). Canada's existing preferential trading regime with the Caribbean is the Canadian Trade, Investment and Industrial Cooperation Program (CARIBCAN). As both of these countries move toward nonreciprocal trade agreements with major trading partners, however, Belize's economy, highly dependent on agricultural exports to North America, will have to make significant adjustments. Canadian Prime Minister Stephen Harper in July 2007 announced the launch of negotiations for a free trade agreement between Canada and CARICOM (Trinidad Guardian 2007).

Many of Belize's top product exports to the U.S. market enter under preferences, with varying degrees of susceptibility to preference erosion. Crude petroleum oil has become Belize's largest export to the United States, and although this product enters the United States duty free under the CBTPA, the U.S. most-favored nation tariff is a mere 10.5 cents per barrel. Given the current high cost of crude oil, these most-favored nation duties in ad valorem equivalent terms are practically negligible. Papayas, by contrast, receive a more significant preference under CBERA, as the most-favored nation tariff is 5.4 percent. Sugar exports appear quite susceptible to erosion in the U.S. market, as sugar receives a substantial preference margin. However, the U.S. sugar market has been a secondary priority for Belize, because the ACP–European Union preferential program has provided considerably more favorable preferences. Garment exports to the United States also receive meaningful preference margins, many of them upward of 10 percentage points. Belize's citrus products enter the United States duty free under CBERA. Thus, aside from petroleum, exports of Belize's major products to the United States could be jeopardized by future reductions in tariffs imposed by the United States on third parties, as such a reduction would provide increased market access to Belize's competitors. This highlights the importance of improving Belize's overall export competitiveness by addressing the challenges set forth in the next section.

4.4 Challenges and Policy Options

This section sets forth constraints on Belize's trade and export competitiveness—limitations in trade policy institutions, limited access to capital and trade finance, trade facilitation and trade-related infrastructure needs, and untapped export potential that could be addressed by stronger export promotion activities—as well as proposals for addressing them.

4.4.1 Trade Institutions and Policymaking

A number of agencies and bodies are responsible for coordinating and implementing Belize's trade

policies. The Directorate of Foreign Trade is responsible for trade policy and negotiations and is part of the Ministry of Foreign Affairs and Foreign Trade. It is currently quite small, with a minimal number of staff. The Belize Trade and Investment Development Service (Beltraide) promotes exports and international investment in Belize and oversees Belize's incentive program for investment in the country (ITC 2004; Beltraide 2007, n.d.-b). Beltraide currently has a staff of 15 and reports to the Ministry of National Development, Investment, and Culture. The Ministry of Agriculture and Fisheries has a Trade and Policy Unit, and the Belize Agricultural Health Authority (BAHA) falls under its purview as well. BAHA administers Belize's food safety certification program, based on the Hazard Analysis and Critical Control Point system, certifying agricultural products for export. BAHA also performs inspections of imported food and is the authority responsible for granting import permits for agricultural products. The Customs and Excise Department administers duties. The Belize Tourism Board (BTB) is responsible for implementing the government's tourism policies.

These institutions face a number of constraints, most notably in terms of human resources and funding. Both Beltraide and the BTB are quite proactive in promoting Belize's brand, and the BTB is well-funded, via a 9 percent tax on accommodations. However, although it is part of the Caribbean Tourism Organization, Belize's absence from the World Tourism Organization limits its ability to take advantage of the benefits offered by the latter body.²⁰

Beltraide receives government funding for salaries, and its buildings and operational expenses are funded by fees charged for its programs. Although BAHA depends for its funding on user fees, which impose an additional cost on traders, it is generally considered to be effective. Additional funding from the government might help reduce trading costs, and the amount of such funding required might be relatively small compared with that devoted to some of the government's other trade-related programs, such as the export-processing zone incentive.

²⁰ In the past, Belize also benefited from regional tourism initiatives, such as the Mundo Maya agreement.

4.4.2 Access to Trade Finance and Capital for Investments in the Export Sector

Trade financing is a major constraint on the competitiveness of Belize's exporters. Businesses in Belize face high interest rates and difficulty obtaining long-term capital for investment. Although larger firms with steady export revenues are able to borrow internationally at lower, U.S.-dollar interest rates, domestic producers must borrow at the higher local rates.²¹ This includes not only domestic producers who wish to expand production for the local market, but also those with export potential that, without access to credit, may not be able to make the investments necessary to bring their products to international markets. This is in addition to the direct effect of potentially competitive goods' lacking access to international markets as a result of difficulties in obtaining funding for export operations. The situation underscores both the importance of the external sector as an avenue for future growth, because of the government's budget limitations, and the consequent need for future fiscal restraint.

There exists some access to pooled financing in the citrus and banana industries. The Banana Growers Association provides loans, as does the Citrus Growers and Workers Credit Union (WTO 2004; Ministry of Agriculture and Fisheries 2003). Crop insurance is generally unavailable, except in the banana industry.

4.4.3 Trade Facilitation

When countries already have the advantage of favorable market access conditions, improving the efficiency of bringing goods to international markets becomes increasingly relevant, because the major constraint on exports is less likely to be the ability to access markets, but more likely the ability to supply markets. Trade facilitation is the simplification and harmonization of international trade procedures, including the activities, practices, and formalities involved in collecting, presenting, communicating, and processing data required for the movement of goods in international trade.

This definition refers to a broad range of activities, such as import and export procedures (for example, customs or license formalities); formalities relating to transport; and payment, insurance, and other financial requirements.

Inadequate trade infrastructure is a major constraint on Belize's trade competitiveness, raising the cost of conducting business. For example, the cost of export (per container) is US\$1,710, well above the regional average (US\$1,244).²²

In the next few years, Belize's Customs and Excise Department will face many new challenges to adherence to international best practices in the area of trade facilitation and will require a new approach to customs modernization. The current fiscal revenue capacity efforts will provide a solid base for moving forward with the implementation of the World Customs Organization Framework of Standards to Secure and Facilitate Global Trade (SAFE) and to strengthen logistics, licensing, control mechanisms, and risk management, among other things.

Stringent requirements coming from Europe and the United States for formalization of the electronic messaging of all trade information will require updating of the current system. Origin determinations will also be necessary to identify goods qualifying under reciprocal trade agreements, such as the Economic Partnership Agreement with the European Union.

Greater automation, streamlining, and consolidation of procedures would also be helpful (e.g., a one-stop window for import and export procedures). Exporters can now have their documents processed up to seven days ahead of time to expedite their shipments. The Customs and Excise Department is currently implementing ASYCUDA (Automated System for Customs Data) World, which will facilitate more automated procedures. Implementation of a single window in Belize will strengthen its competitiveness in a challenging global market, where marginal reductions in transaction costs could contribute meaningfully to promoting trade and international investment.

²¹ The local lending rate averaged 15 percent in 1995–2006, according to calculations based on IMF International Financial Statistics data.

²² World Bank, Doing Business database (<http://www.doingbusiness.org/>).

Physical infrastructure limitations, particularly in rural areas, also place pressure on Belize's competitiveness in terms of increased costs, and the establishment of proper road infrastructure throughout Belize is an additional component required for improving the access of its products to international markets. Furthermore, agricultural production is spread throughout the country, and as such (1) is often distant from ports, as in the cases of sugar and papayas, or (2) involves perishable tropical fruits that are more susceptible to spoilage, such as papayas and bananas.²³ The government, assisted by a number of overseas aid sources, has invested heavily in road infrastructure, the result of which has been that most of the major highways and roads in the major cities and towns are paved (Barrow and Williams 2003), and the major towns are connected by roads and by regular bus service (Economist Intelligence Unit 2006).

With three major ports (IDB 2007b), Belize has sufficient port facilities to handle trade without congestion, such that when high traffic does occur, it is due to scheduling as opposed to insufficient capacity. Most shipping services go through Miami; this places some efficiency limitations on the potential for regional integration by increasing transport costs and times to Caribbean ports. The lack of lighted runways at the country's smaller airports to accommodate night flights is cited as posing a constraint on tourism. A system of tour buses to transport visitors around the country might also help the industry by allowing some tourists to see more of the countryside.

Although utilities such as electricity, telephone, and water are relatively accessible in Belize, at least in the more-developed areas, they are expensive. Access is a more significant issue in rural areas (IDB 2007a) and in areas with rapid tourism development. In some cases, developers have to provide their own utilities. Computer and Internet usage, though relatively recent, is growing rapidly. Call center services are one area in which a sector-specific investment attraction program might prove beneficial, as such a sector might provide a nucleus for future growth in ICT ser-

vices with greater value added. General improvements in ICT availability as part of the country's overall development policy could provide spillover benefits in other services sectors by reducing costs for services providers and also could contribute to greater efficiencies for merchandise exports.²⁴

In sum, Belize's transportation-related challenges to export performance are to a substantial degree exogenous and stem from the country's geography. Belize's coast has limited areas that lend themselves to deep-water ports capable of accommodating commercial ships, especially in the north, and so goods such as sugar and papayas need to take a convoluted route to Belize City, and petroleum exports must travel from Spanish Lookout to Big Creek via Belmopan. Moreover, the prospects for major transportation upgrades are limited by the country's fiscal constraints. However, given the relatively good market access conditions available to Belize in most of its major trading partners, strengthening trade-related infrastructure has a greater potential for expanding exports than improvements to transport infrastructure, through the resulting improvements in the cost and efficiency of bringing goods to international markets.

4.4.4 Export Promotion

Beltraide's functions include, among other things, supporting exports, with an emphasis on nontraditional goods and markets; promoting international investment in Belize; and supervising fiscal incentives for investors in Belize (ITC 2004; Beltraide 2007, n.d.-b). Beltraide thus plays an important role in attracting export-oriented foreign direct investment into the country. It also assists smaller companies with technical business support in areas such as accounting and inventory control and provides advice on product development and packaging.

Belize offers various concessions to attract investment to the country. The Belizean government initiated an export-processing zone program in 1990 with the goal of creating employment. Export-processing zones are not necessarily physi-

²³ Sugar is also sensitive to internal transport inefficiencies because of its high volume to value.

²⁴ Additional investment in human capital (i.e., education) would be helpful in this area because of the interdependence between the various sectors.

cal areas or traditional maquiladora operations, but rather a designation that provides certain tax, duty, and licensing exemptions for companies producing for export. Commercial free zones enjoy similar benefits to export-processing zones and are intended to operate in border areas and outside the national customs territory (ITC 2004; Beltraide 2007, n.d.-b). Beltraide also oversees the country's fiscal incentive program for investors, which additionally includes a separate incentive for small and medium-sized enterprises. However, providing incentives for business development via reducing regulatory and institutional burdens in general might be a less costly means of attracting investment, in terms of forgone revenue, than the country's current incentive programs.

Niche products are differentiated not only by their physical characteristics and inputs, but also by the processes by which they and their inputs are created, traded, and marketed. Organic, fair trade, and ecological processes contribute to final product image and cachet and can help distinguish goods from mass-traded commodities. Two well-known examples are Marie Sharp's Limited and Maya Gold. Marie Sharp's, which mainly produces hot pepper sauces, not only has secured arrangements with major retail chains to distribute its products in the United States, but has also increased the cultivation of hot peppers in Belize and generated demand for the other agricultural products that form the base of the sauces (Beltraide 2004). Maya Gold, a chocolate bar sold in the United Kingdom by Green and Black's, is made from organically grown cacao from the Toledo District and bears the Fairtrade Foundation label, a certification that makes it more desirable among certain consumers. Cultivation of cacao is also providing positive environmental externalities and employment and income to excluded sectors of Belizean society (Guardian Unlimited 2004; Purvis 2006). Honey has been proposed as an industry with potential for Belize, particularly boutique honeys such as citrus honey, which might also serve to pollinate citrus crops, and organic honey grown on rainforest preserves, which might additionally be an environmental public good.

Belize could further improve its export performance by means of supply chain integration, particularly in agriculture. This involves the strategic management of productive processes from raw inputs through distribution to the consumer.²⁵ Focusing on the growth of the aforementioned sectors presents a significant limitation in that nontraditional niche exports are by nature small, whereas commodity trade is by nature large. Thus, it would require a number of successful dynamic niche ventures to offset declines in traditional export sectors arising from preference erosion or unfavorable price trends. Although a successful marketing strategy could help generate demand for niche goods, the size of the market for them is not infinite, and additional demand will have to be generated through other venues, such as by developing supply chains both within goods and between goods and services.

There are also potential linkages between the tourism industry and Belizean goods and services. Supply chain management in the form of ensuring predictability and certification could be explored, with the ultimate goal of strengthening links between agriculture and tourism. In a sense, Belize's tourism brand could be leveraged to promote interest in Belizean cuisine and thus its agricultural products. Whereas there is a bachelor's degree program in tourism management at the University of Belize, there is no certification program for chefs in Belize. Although whether there is a critical mass of interest in such certification is open to question, chefs with knowledge of both international cuisine and tastes and local products and cooking techniques might help further deepen the appeal of Belize's tourism brand internationally. Developing greater linkages between tourism and farming may hold similar potential as Belize attracts a more experiential tourist clientele.

Furthermore, Belize could do more to take advantage of its position at the crossroads of the Caribbean and Central America and find ways to increase exports to these markets. Although it is still small, trade with Central America has grown rapidly in recent years and could provide an avenue for product diversification in addition to

²⁵ See Wikipedia, "Supply Chain Management," available at http://en.wikipedia.org/wiki/Supply_chain_management.

market diversification, particularly if preferences erode in Belize's more traditional markets.

4.4.5 Policy Recommendations

The issues presented in the preceding section suggest a number of policy adaptations to increase Belize's capacity to grow through trade. The following discussion presents the main policy recommendations.

Belize requires improved public sector institutional capacities to manage the increasingly complex intraregional and global trade agendas and to facilitate trade. This capacity building should reach all trade-related institutions, such as the Ministries of Foreign Affairs and Foreign Trade; Agriculture and Fisheries; Finance; and Economic Development; and the tourism authorities. Fostering the capacity of the Bureau of Standards is an acute priority.

To propel trade and investment, the country needs to focus on trade-related bottlenecks that stem from both institutions and infrastructure and to make a commitment to investment in these areas. The streamlining and consolidation of export procedures—for example, a one-stop window with regard to import and export procedures—would be helpful in this area. A somewhat related option for possible consideration is the potential for the tariffication of the current licensing system. This would not only potentially provide revenue, but also reduce the possibilities for rent seeking that exist under a licensing regime.

Private sector development is key if Belize is to take greater advantage of the opportunities in the integrated regional market available via its member-

ship in CARICOM. This calls for national action to promote information campaigns, export credit assistance, and foreign direct investment. Support targeted at small and medium-sized enterprises in accessing credit, moving up the value chain, and identifying export niches is particularly important, as is promoting the development of linkages for domestic firms that provide inputs to industries that export (agricultural supply chain integration). Small and medium-sized enterprises are employment intensive and, at the same time, face greater constraints than larger enterprises in terms of access to capital and information asymmetries. Sharing or matching grants are one possible approach for providing support for these enterprises.

Investing in export promotion is also important for enabling Belize to project a positive country image and helping Belizean exporters to make business contacts, analyze markets, and identify niches in the global markets. It is all the more important in light of the efforts by several other Latin American and Caribbean countries to transform their export promotion agencies. A general demand-driven approach may be useful here, to avoid preselecting larger sectors that are already established. Small and medium-sized enterprises could derive particular benefit from initiatives aimed at developing linkages between exporters and major distributors in international markets. Consideration could also be given to developing a regional tourism route in Central America.

Belize has seen impressive growth in trade in recent years. However, despite the potential provided by its comparative advantages, continued export performance requires that it address the challenges of trade-related institutions and infrastructure, access to capital, and market penetration.

TABLE 4.2. MAIN CHALLENGES TO TRADE AND INTEGRATION AND POSSIBLE INTERVENTIONS

Issue	Constraints	Possible interventions
Trade policy institutions	<p>Limited capacity to negotiate and implement trade agreements</p> <p>Limited capacity to address technical barriers to trade and sanitary and phytosanitary standards</p> <p>Import licenses that pose an obstacle to trade</p>	<p>Support, as necessary, to the Ministry of Foreign Affairs and Foreign Trade, Ministry of Agriculture and Fisheries, and other relevant ministries and agencies</p> <p>Development of a Trade Information Center</p> <p>Instituting a functioning Bureau of Standards</p> <p>Strengthening the Belize Agricultural Health Authority as necessary, including analysis of the existing fee system</p>
Trade-related infrastructure	Inefficiencies and difficulties in bringing products from point of origin to international markets	Support for streamlining and consolidation of export procedures, for example, a one-stop window for import and export procedures
Access to capital	Obstacles, arising from the high cost of domestic capital, on enterprises with export potential in actually bringing their products or services to international markets	<p>Fostering institutions that provide credit to small and medium-sized enterprises and microenterprises, keeping in mind the importance of following best practices as well as the dangers of mission creep and institutional capture</p> <p>Hosting or supporting a trade and investment show bringing together Belizean producers and international investors</p>
Export promotion and private sector competitiveness	<p>Great untapped potential in niche markets (marketing, packaging, and cachet in addition to product quality)</p> <p>Need for greater supply chain integration, in particular, further cultivation of relationships with overseas distributors</p> <p>Lack of knowledge among the smallest producers regarding best practices for agriculture or quality control</p>	<p>Support for Beltrade in its capacity to conduct product and market studies and to attract foreign direct investment</p> <p>Hosting or supporting a trade and investment show bringing together Belizean producers and international distributors</p> <p>Promoting agricultural best practices, preferably domestically through work attachments (as opposed to having to hire international consultants), and potentially including the sharing of experiences in working to obtain organic, fair trade, or ecological certifications</p>

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Infrastructure: Current Situation and Challenges

5.1 Introduction

Belize's low population density, together with scattered production areas and low production volumes, makes the provision of infrastructure a challenge, especially in regard to the development of tourism and agriculture, the main productive sectors in the economy. A lack of economies of scale, resulting from the factors just identified, makes infrastructure provision in Belize more costly than in larger countries. In addition, factors such as public sector debt, regulation, and vulnerability to natural disasters further complicate the development and maintenance of infrastructure in the country.

Notwithstanding these difficulties, Belize has made progress in building an infrastructure network, through a combination of support from the private sector, public investment, and financing from international financial institutions and bilateral donors. These efforts have resulted in improved access to water services (91 percent coverage, around the average for Latin America and the Caribbean), near universal electrification, and paved highways connecting most major urban settlements and border areas. While at the moment infrastructure is not considered to be the binding constraint on growth (Chapter 1), niche investments to remove specific obstacles to growth (through tourism, agriculture, and petroleum) and for maintenance need to be considered. For example, lack of maintenance could lead to a deterioration of the road network and become a constraint on investment, particularly in agriculture, which is intensively dependent on rural roads; in addition, lack of sanitation and deteriorating airport infrastructure could negatively affect the tourism sector.

Infrastructure also has an important role in connecting remote communities and linking them to markets and jobs and in providing basic needs and thereby improving living conditions. A survey conducted in the context of the preparation of the 2009 *Country Poverty Assessment Report* revealed that participants considered needs related to infrastructure (particularly water supply and electricity, but also roads and garbage collection for periurban communities) a priority (Government of Belize 2009).

This chapter examines the situation and challenges in Belize's transport, energy, and water and sanitation sectors, providing policy options and recommendations.

5.2 Situation and Challenges

This section provides a diagnostic of the transport, water and sanitation, and energy sectors, including institutional and regulatory challenges.

5.2.1 Transport

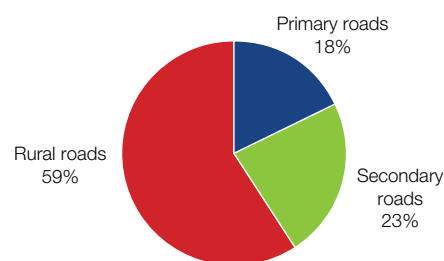
Roads

Over the past few decades, the road network in Belize has been greatly improved. The country affords acceptable ground connections within the northern and western regions of the country and with Guatemala and Mexico. This has facilitated recent surges in tourism and in agricultural production. Although the current stock of roads in Belize appears to be low relative to its surface area, it is high in proportion to the size of the country's population and level of production (Table 5.1).

The country exhibits low road utilization, given its population density and dispersed economic activity, although traffic volumes are growing in Belize City. Despite the light volumes of traffic, Belize shows one of the highest rates of road fatalities in the world (23 per 100,000 people), raising concerns about road safety (International Road Federation 2009).¹ Lack of traffic signs and pavement markings, limited enforcement of speed limits, and lack of driver education are considered to be the main contributing factors (World Bank 2008).

The country's total road network consists of 3,281 kilometers of roads, the majority of which are rural (Figure 5.1). About 20 percent of the network is paved. There are four paved highways, connecting most major urban settlements and border areas. The secondary road system consists almost entirely of unpaved roads with either gravel or marl surfaces. These roads usually serve to link smaller towns or areas of agricultural production with the main towns or the primary road system. The con-

FIGURE 5.1. BELIZE ROAD NETWORK
(kilometers)



Source: Hidalgo (2007).

dition of secondary roads varies depending on the prevailing weather conditions, the volume of traffic, and the maintenance that they receive. Rural roads were in general originally built for specific purposes connected with agriculture and agricultural products—sugarcane in Corozal; forestry and general farming in Cayo, Orange Walk, and Toledo; rice and general farming in Belize; and citrus and bananas in Stann Creek—and the condition of these roads is influenced by the situation of the industry for which they were primarily built; those roads connected with industries that are prospering tend to be in better shape. Many farm access roads need upgrading, and some of them are not usable all year round. Progress in this regard is being made in banana-growing areas under the Banana Support Program, but the roads need to be upgraded throughout the country, preferably paved when possible (Norton 2009). Without reliable access, products like milk and perishable fruit and vegetables cannot be produced, and roads in poor condition raise the cost of marketing all products (Norton 2009).

TABLE 5.1. ROAD TRANSPORT INDICATORS

Kilometers of road per	Belize	Costa Rica	Dominican Republic	El Salvador	Jamaica
Thousands of population	10.61	8.09	1.43	1.72	8.21
Square kilometers of land area	0.14	0.70	0.26	0.48	2.01
Billions of U.S. dollars in GDP	2,428	1,213	284	453	1,572

Sources: Economic Commission for Latin America and the Caribbean; World Bank, *World Development Indicators*; and International Monetary Fund, *World Economic Outlook*.

¹ The International Road Federation cites Belize as among the top 15 countries according to persons killed in road accidents (Libya is first at 35 road fatalities/100,000 inhabitants).

Already inconsistent and variable, depending on factors noted in the previous paragraph, the quality of Belize's road network is, in addition, deteriorating. The proportion of the road system considered in poor to bad condition increased from 5 to 12 percent of the total between 2004/2005 and 2007/2008. This can be attributed to a deficit in resource allocation for maintenance, both at the planning and execution stages. Historically, there has been a deficit of 41.6 percent in the financial resources needed for the execution of an adequate road maintenance program, despite the fact that maintenance has a higher economic rate of return than new infrastructure investments (Belli 2010). About 65 percent of the maintenance of the road network is carried out by private sector contractors (Hidalgo 2007).

Since the late 1990s, the Ministry of Works has had a yearly routine and periodic maintenance work program using its maintenance management system. The system establishes the annual routine maintenance resource scheduling program, generates and justifies requests for budget allocations, and prioritizes activities based on the funding received. It can also develop periodic maintenance schedules, which must be verified by on-site inspection. Although the system is installed and is being used in all maintenance districts, because of a lack of logistical equipment, the basic data (road inventory, roughness, deflections, traffic counting, and safety measures) necessary to operate the system have not been updated. The system is therefore not working as well as it should for planning activities and sound accounting of capital and recurrent expenditures (Hidalgo 2007).

Road expenditures in Belize are financed by the national government through annual budget allocations to the Ministry of Works and by grants and loans from bilateral and multilateral sources. Expenditures on roads, particularly capital expenditures, fluctuate from year to year because they are funded mainly by external financial assistance and because capital expenditures have tended to be the predominant variable for fiscal adjustment. Recurrent road-related expenditures fluctuate less, but have tended to decrease more than the expected maintenance cost savings obtained through the upgrading of the highway and rural road systems (Hidalgo 2007).

Airports

Belize's air transport system consists of an international airport and a network of domestic airstrips. The Philip S. W. Goldson International Airport (PGIA), privately managed since 2004 by Belize Airport Concession Company Limited, is said to have sufficient capacity for the foreseeable future and to generate sufficient revenue to meet its requirements, including maintenance. Seven main municipal airstrips, all government-owned, currently serve commercial air transport: Belize City, San Pedro, Dangriga, Caye Caulker, Placencia, Corozal, and Punta Gorda. Domestic air transport plays an important role in tourist traffic. Seventy-three percent of passengers who enter the country using PGIA (about 180,000 annual passengers) are overnight tourists, and it is estimated that more than 90 percent use one or more of the municipal airstrips.

No significant improvements have been made over the last 30 years to Belize's municipal airstrips, and the condition of many of them is poor and potentially life threatening. In particular, the condition of the Belize and Placencia airstrips is critical. None of the municipal airstrips meet International Civil Aviation Organization requirements for operational safety. The main concerns derive from the fact that all airstrips are uncontrolled aerodromes, there are no rescue and firefighting services available, many pilots continue to fly in low-visibility conditions (or after sunset) even though there is no effective airstrip lighting, there is no effective perimeter security fencing protecting the airfields, and pavement surfaces are often in very bad condition. The potential for private investment in the modernization of the municipal airstrips is limited by the oligopolistic business structure of the sector, based on two rival companies, both well established in the country, a regulatory environment that is extremely uncertain for the investor; and the serious weakness of the organizational structure of Belize Airports Authority (BAA), the country's aeronautical authority (Advanced Logistics Group 2009).

Ports

Belize has three major ports, all of which are privately owned. The Port of Belize, located in Belize

City, is the largest in the country. The cargo handled in the port is mainly manufactured imports and mostly containerized. Belize is also served by cruise ship service; calls have grown from 39 cruise ship calls in 2001 to 278 cruise ship calls in 2007. Commerce Bight Port in Dangriga and Big Creek Port in the Stann Creek District are primarily used for citrus and banana exports, respectively (Hidalgo 2007).

Port facilities are in compliance with International Organization for Standardization (ISO) standards and are equipped to handle trade without congestion; when high levels of traffic do occur, they are the result of scheduling as opposed to insufficient capacity. Sea transport services are provided by foreign shipping lines, since Belize does not have a nationally owned deep-sea fleet. Most of these lines operate via the United States rather than direct from Belize. There are no services to Caribbean destinations. This places some efficiency limitations on the potential for regional integration by increasing transport costs and times to Caribbean ports (Chaitram et al. 2008). The sugar industry is the country's main user of domestic sea transport services.

Institutional and Regulatory Aspects

Responsibilities for oversight of the transport sector are dispersed across several Belizean ministries, and coordination among them is almost nonexistent. In general, institutions responsible for supervising the three subsectors suffer from staff limitations and a lack of investment planning for the medium to long term.

The *Ministry of Works* is responsible for planning, construction, and maintenance of the country's network of roads and bridges, as well as maintenance of some drains and roads in towns and waterways and routine and periodic maintenance of district airfields. The ministry has good systems for supervision and monitoring of construction firms and good experience in public tendering processes. However, it has a limited number of technical personnel (Hidalgo 2007).

Air transport in Belize is administered under the Civil Aviation Act of 2000. Airports and airstrips are under the responsibility of the *Ministry of*

Tourism, Civil Aviation and Culture through the Belize Airports Authority and the Department of Civil Aviation. The BAA regulates the country's airports, including the international airport. The Department of Civil Aviation is responsible for aerodrome licensing, operating the municipal airstrips, and staffing the control tower at PGIA. It also provides aerial navigation services for the immediate area of the international airport. Regional aerial navigation and air traffic control services are provided by the Corporación Centro Americana de Servicios de Navegación Aérea (COCESNA) (Hidalgo 2007).

The BAA faces staff limitations and lack of a clear institutional structure of regulation, supervision, and commercial management for the municipal airstrips. Even if new investments raise the standard of infrastructure for the key airstrips, this will not ensure the ongoing safety of operations or the commercial viability of the network, unless it is accompanied by institutional strengthening to implement a sustainable operational model, standardized procedures, and robust commercial management (Advanced Logistics Group 2009).

The *Ministry of Public Utilities, Transport, Communications and National Emergency Management* manages the country's ports. Within this ministry, the Belize Port Authority (BPA) is responsible for channels, lighthouses, and all other navigation aids in the country. It also regulates the major privatized port facilities at Port of Belize, Commerce Bight, and Big Creek (Hidalgo 2007).

Challenges

In summary, the chief issues facing Belize's transport sector are as follows:

- Lack of allocation of resources for maintenance of the road network could lead to road deterioration and higher costs for rehabilitation.
- Dispersion of responsibilities across several ministries with involvement in the transport system and lack of coordination means that the transport priorities of key sectors of the economy are not systematically taken into consideration.
- Regulatory capacity limits the success of private investments.

5.2.2 Water and Sanitation

Belize has plentiful surface and groundwater resources (18 major watersheds and an undetermined volume of groundwater resources) and is unlikely to suffer from water supply shortages in the foreseeable future. It has one of the highest levels of per capita availability of freshwater in Latin America and the Caribbean (64,000 cubic meters per person per year). Water supply coverage in the country (91 percent) is comparable to (or better than) that in other countries in Central America and the Caribbean (Figure 5.2). However, to meet the Millennium Development Goals and achieve the government's objective of universal water access (100 percent coverage) by 2015, Belize needs to improve its water supply coverage, particularly in rural areas. The Belizean government is in the process of drafting a Bill for Water Resource Management that envisages a new Water Resources Management Plan for the country that will identify an inventory of current water resources and their uses, estimate future demand, and set out clear objectives for the country's water resources (Janson 2008).

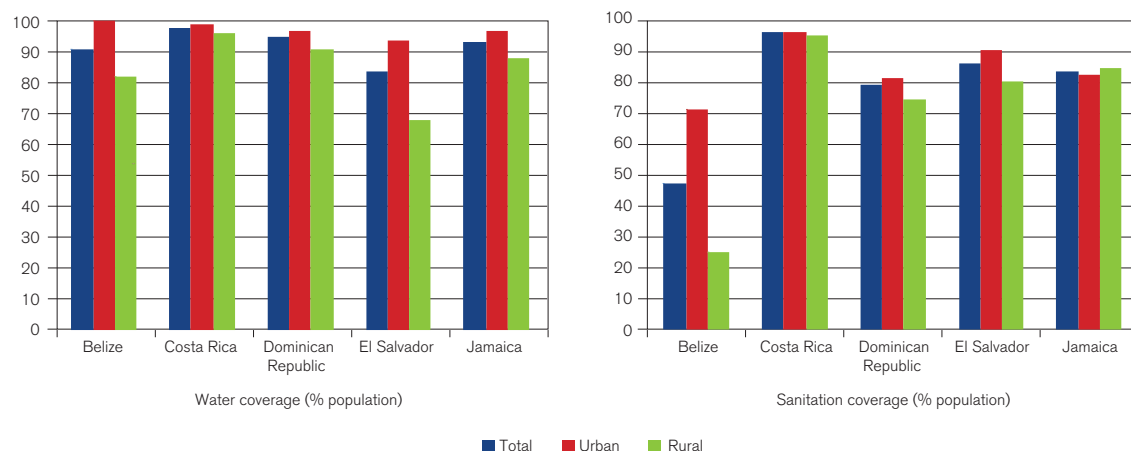
In contrast to the high rate of water supply coverage, sanitation coverage in the country is limited mostly to urban areas (which, according to the Ministry of Health, have 85 percent coverage

of sewerage services, compared with 32 percent access in rural areas).² In rural areas, sanitation primarily involves the use of pit latrines and septic tanks. Though the water coverage rate in rural areas is fairly high, wastewater treatment and collection in these areas nonetheless needs to be improved for health, environmental, and economic reasons. Sewerage is collected in only three municipal areas and is only treated to a basic level.³ Poor sanitation could also have a detrimental effect on tourism, which comprises a significant portion of the country's economy (21 percent of GDP in 2008).

Belize's low population and its fragmentation pose a challenge for water and sanitation provision in the country. More than one-third of the population lives in about 190 villages and communities each with less than 4,000 inhabitants. None of these villages and communities has network-based sanitation services because of the high costs of building and operating such small systems. The small size and number of systems also means that it is difficult to adequately staff the service providers (village water boards) with the technical and financial capacity to ensure the sustainability of the systems (Janson 2008).

The institutional structure of the sector is discussed further in the next section.

FIGURE 5.2. ACCESS TO WATER AND SANITATION SERVICES



Source: Pan American Health Organization (PAHO).

² These are 2004 estimates, quoted in Ministry of National Development, Investment, and Culture (2007). Data in Figure 5.2 are from PAHO, to allow for international comparisons.

³ Sewage treatment lagoons are used in Belize City and San Pedro, while a primary treatment plant is used in Belmopan.

Institutional and Regulatory Aspects

Water services in Belize are provided by Belize Water Services Limited (BWS) in urban areas (cities, towns, and contiguous villages, comprising 55 percent of the total population) and by village water boards in rural areas. Thirty percent of rural areas have no formal providers and rely on household provision. Only BWS provides wastewater collection services. It collects and treats wastewater in limited areas of Belize City, Belmopan, and San Pedro; as noted previously, treatment is only to a primary level. In all other areas, as mentioned, households rely on septic tanks or basic soak-away systems (Janson 2008).

Service Provision in Urban Areas

In 2001 Belize's government privatized the country's water and sewer services. BWS is therefore incorporated as a private company. Following the withdrawal of BWS's private majority owner and operator (Cascal B.V.) in 2005, however, over a dispute regarding a substantial increase in fees, the government repurchased approximately 83 percent of BWS's shares; the Belize Social Security Board holds an additional 10 percent, and private shareholders own the remaining 7 percent. Thus, the government is its majority shareholder, effectively reversing the 2001 privatization (Janson 2008).

BWS provides water services to approximately 43,000 customers in Belize's urban and surrounding areas through 10 water distribution systems. Between 2002 and 2007, the company increased its operating efficiency substantially. Over this period, nonrevenue water decreased from 52 percent to 38 percent of total water produced. This is an adequate level, but it should be reduced to somewhere in the 30 percent range. BWS has also established a high level of collection efficiency; the current collection rate is estimated at between 95 and 98 percent. Staff productivity increased from 6.7 to 5.3 employees per thousand connections between 2002 and 2007, reducing staff costs from 47 to 35 percent in the same period. Despite this improved operating performance, however, BWS's financial situation is not considered sufficiently strong for the company to obtain financing on its own to extend its sewerage services beyond the existing limited service areas or to improve its water service coverage (Janson 2008).

Service Provision in Rural Areas

Village water boards in Belize report to the Rural Development Department in the Ministry of Labour, Local Government, and Rural Development, which regulates them and provides technical support. Most water boards operate a single rudimentary village water distribution system, but a handful oversee systems in two or three villages or communities (Janson 2008).

According to the Rural Development Department, almost all village water boards cover their operating and maintenance costs and are able to fund minor extensions of their systems to serve new customers. However, they are unable to fund, with cash generated from operations, investments for rehabilitating, upgrading, or significantly expanding their systems. Most are reliant on government funding for capital investment, which is primarily channeled through the Social Investment Fund, and in some areas, private real estate developers contribute. The Ministry of Labour does not currently have a long-term plan for ensuring that water services in rural areas are delivered in a sustainable way (Janson 2008).

Regulation

Belize's Public Utilities Commission (PUC) (Box 5.1), which oversees the country's water, telecommunications, and electricity sectors, is responsible for regulating the tariffs and service standards of BWS, which is the country's only licensed water provider. Under the country's Water Industry Act, the PUC can issue a license to other water providers, but thus far it has received no other applications (for example, none of the village water boards are licensed by the PUC). Though the regulatory framework for the sector is well developed, the reversal of the privatization of BWS effectively renders it largely irrelevant. As a majority government-owned utility, BWS does not appear to have the autonomy or financial resources necessary to operate as a commercial service provider that can improve and expand the water and wastewater services it provides to customers within its service area (Janson 2008).

The Water Industry Act also allows the PUC to issue rules and regulations on areas under its jurisdiction, such as quality of service indicators

BOX 5.1 The Public Utilities Commission

Belize's Public Utilities Commission was established in 1999 when the Belize legislature enacted the Public Utilities Commission Act. This act introduced and institutionalized in Belize the first autonomous authority with responsibility for regulating the electricity, water, and telecommunications sectors.

The PUC is defined in the act as an autonomous government body. It is composed of seven members (commissioners) appointed by Belize's Governor-General, acting on the advice of the Prime Minister, given after consultation with the leader of the opposition party. The commissioners are appointed in a staggered manner for six-year terms. Under its mandate, the PUC determines and prescribes both the "standards that must be maintained" and the "rates which may be charged in respect of utility services." It also has many other regulatory and supervisory powers, such as

- Securing that all reasonable demands for electricity are satisfied
- Securing that license holders are able to finance the activities that their licenses authorize them to carry out
- Promoting competition in the generation and supply of electricity
- Protecting the interests of consumers with respect to price, quality, and continuity of supply
- Promoting efficiency in supply and consumption
- Promoting research and public security in matters of the sector

Sources: PUC and Pérez Arbeláez (2007).

and standards and utility tariff rules, and to monitor and enforce compliance with these rules and regulations. According to the Water and Sewerage (Tariff) Bylaws (Statutory Instrument No. 67 of 2002), BWS's tariffs may be set at a level that ensures a 12 percent rate of return. BWS must submit its proposed tariffs to the PUC for review and approval every five years. The PUC generally calculates allowed tariffs on a cost-plus basis, but also claims to take customer affordability into consideration. Between review periods, BWS may also apply annually to the PUC to increase its tariffs in line with inflation and other indexation factors. The company has not received any tariff increases since 2005 (Janson 2008). The next tariff review is expected in 2010.

Village water boards are regulated by the Village Councils Act and by accounting regulations issued by the village councils (in accordance with their powers under the act). The act provides for the ministry charged with the responsibility for village councils (currently the Ministry of Labour) and the councils themselves to establish village water boards as independent entities responsible for overseeing the management of a piped water supply in each village. It also provides for village water boards in each of the six districts to establish a district association. The Rural Development Department currently oversees 102 village water boards and cannot

monitor all closely to ensure that service standards are being met. In the future it would be more efficient to have fewer, larger providers offering both water and sanitation services (Janson 2008).

Evaluation of Structure

The structure of Belize's water sector is likely to change over time in response to consumer demand and government policy. For example, smaller providers (village water boards in less viable areas) may need to merge, where feasible, into regional water boards. However, significant reform does not seem necessary—the current division of provision between BWS and village-based providers (village water boards) reflects the country's urban-rural divide and is appropriate given the economics involved in serving different population centers (Janson 2008).

Challenges

In summary, the main challenges facing Belize's water and sanitation sector are as follows:

In urban areas, BWS needs to improve operating efficiency and extend service coverage. At 38 percent, nonrevenue water is at an adequate level, but this level could and should be reduced to somewhere in the 30 percent range. BWS needs

to invest in water and sewerage system expansions to make it possible to extend coverage, but without substantial tariff increases (which are not recommended), it will be unable to finance these investments, unless it obtains funding from the government.

In rural areas, the key challenges are improving service coverage and service planning and financing. Current service funding could be more reliable, transparent, and effective if the government adopted a clear policy for funding capital investments though targeted and incentivized grants and funding operations through a combination of consumer tariffs and output-based subsidies.

5.2.3 Energy

Belize's total energy consumption is one of the smallest in Latin America and the Caribbean. However, it has the second-highest per capita energy consumption in Central America, after Panama, although per capita consumption is not especially high with respect to some of the countries in the Caribbean. The country's primary energy consumption⁴ in 2005 amounted to 2.75 million barrels of oil equivalent, composed of 2.55 million barrels of imported oil products and 322 gigawatt-hours of primary electric energy (local hydroelectricity and imports).

Electricity

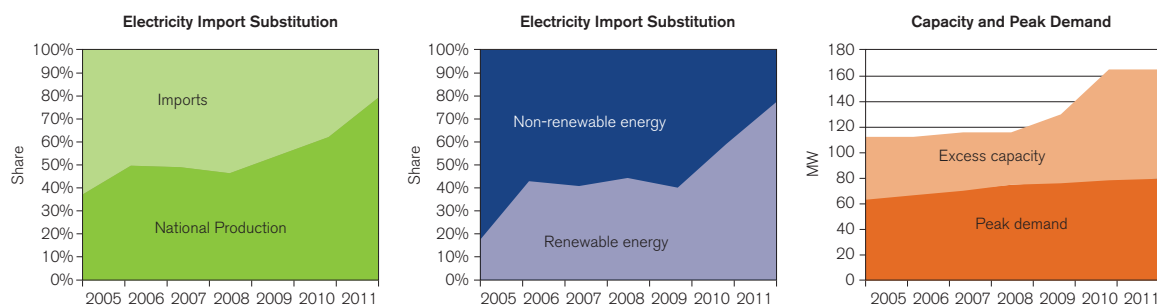
The electricity industry in Belize is currently privately owned and government regulated. Transmission, distribution, and some generation

activities are carried out by a single private company, Belize Electricity Limited (BEL). This affects competition for the market in generation, as well as the transparency of cost determination for all branches of the business. Fortis Inc. is BEL's majority owner, holding 70 percent interest. In addition, Fortis fully owns the Belize Electric Company, the major producer of hydroelectric energy in Belize (Pérez Arbeláez 2007).

Currently BEL buys 46 percent of its energy from Mexico's Comisión Federal de Electricidad and around 50 percent from local sources (the bulk of it from the Belize Electric Company); it produces the rest itself, mainly to attend to demand peaks and emergencies. Despite the substantial component of the country's energy that BEL purchases abroad (for cost efficiency reasons; see below), generation capacity in the country far outstrips demand (Figure 5.3); local generation capacity is now 117 megawatts, compared to a customer peak demand of 76 megawatts (BEL 2009). New local generation sources came on line in 2009, reducing the reliance on imported electricity and substituting renewable energy for nonrenewable.

Electricity demand in 2010 is forecast to grow at 1 to 2 percent as the Belizean economy begins to pull out of the recession (BEL 2009). As more local sources begin generating electricity, the economies of scale available, which are already very limited because the market in Belize is so small, will become even more limited. One way of remedying this would be to fully integrate the system with other Central American systems, via the

FIGURE 5.3. ELECTRICITY GENERATION



Source: IDB calculations based on BEL data.

⁴ Total primary energy consumption includes the consumption of petroleum, dry natural gas, coal, and net nuclear, hydroelectric, and nonhydroelectric renewable electricity.

Central American Electrical Integration System (SIEPAC).⁵ However, in the short to medium term, the costs of interconnection with SIEPAC may be too high to be viable, since Belize is far from the main SIEPAC transmission line (Pérez Arbeláez 2007).

It is estimated that 91 percent of the population of Belize has access to electricity, slightly below the average for Latin America and the Caribbean (93 percent). While coverage in urban areas is nearly universal, rural coverage stood at 82 percent in 2006. This implies that there are approximately 27,000 people without electricity, mostly in rural areas, where the cost of connection to the grid and remoteness are factors. Under a program created in 1999 and aimed at providing electricity to remote villages and towns throughout the country, the Belizean government provides financing (capital contributions) to BEL to carry out electrification projects in these remote villages (Pérez Arbeláez 2007).

Belize ranks among the countries with lowest electricity prices in the Caribbean, yet prices are high compared to those elsewhere in Central America (Figure 5.4). Several factors may explain why Belize's electricity prices compare favorably to those in the Caribbean. Diseconomies of scale have a big impact on the cost of generating power in small Caribbean islands. Remoteness and lack of indigenous resources are also factors, since the high cost of importing fuel adds to the cost of generating electricity (Ehrhardt and Oliver 2007). On the other hand, although the reasons for Belize's high electricity prices relative to the rest of Central America deserve further study, they may be partially a consequence of the small size of the Belizean market.

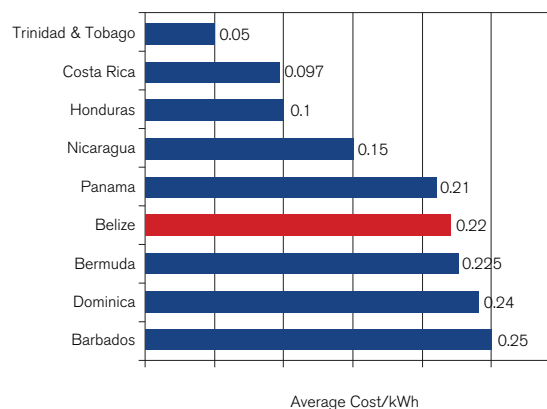
Currently the average price for electricity in Belize is BZ\$0.441 (US\$0.2205) per kilowatt-hour.

The two main drivers of this rate are two of the three components that determine the average electricity tariff in the country:⁶

- **Cost of power** (BZ\$0.312 per kilowatt-hour).⁷ There is potential for reducing the cost of power in Belize, although there is a trade-off. Belize's energy policy favors local production and aims at reducing energy dependence to ensure security of supply. Given the lack of economies of scale, electricity produced locally is bound to have a higher cost than that produced in bigger neighboring markets. Thus a reduction in cost would involve increasing the country's dependence on external sources of energy, in contrast to the policy.
- **Value added of delivery** (BZ\$0.135 per kilowatt-hour). This is the regulated component of the average price, reflecting the cost of providing transmission, distribution, and commercialization service, including an allowed return on capital. BEL's transmission and

FIGURE 5.4. ELECTRICITY PRICES IN CENTRAL AMERICA AND THE CARIBBEAN, 2008

(average residential cost per kilowatt-hour)



Sources: Caribbean Electric Utility Service Corporation (CARILEC) and Economic Commission for Latin America and the Caribbean (ECLAC).

⁵ The Central American Electrical Interconnection System, best known by its Spanish acronym, SIEPAC, is an electric transmission line project that, upon final completion, will run from Panama to Guatemala and interconnect the electric systems of all the countries of Central America. The project will consist of 15 substations and 230-kilovolt high-tension transmission lines that will allow for capacity of 300 megawatts in both directions at the outset, but will also include tower infrastructure to enable a future second circuit. Of the approximately 1,800-kilometer length of the project, the countries of Central America will have the following respective segments of the SIEPAC project: Guatemala: 282 kilometers; El Salvador: 287 kilometers; Honduras: 270 kilometers; Nicaragua: 309 kilometers; Costa Rica: 489 kilometers; and Panama: 151 kilometers (Martin 2010).

⁶ Value added of delivery (a fixed component), cost of power (a variable component that reflects the cost of electricity), and deferred cost of power recovery (or rebate component).

⁷ This is defined as a pass-through of the price of purchased energy and the cost of energy generated by BEL.

distribution business is incurring high costs, resulting in high costs of electricity (and high tariffs) in Belize as compared to other development countries.⁸

BEL's electricity losses (commercial and technical) have recently trended upward and stood at 11.7 percent of net generation in 2009 (BEL 2009). Belize is still doing better than the average for Central America (16 percent), but worse than the average for the Caribbean (10 percent). Commercial losses are already very low, and it will be difficult to bring them down much further. However, with respect to technical losses, there is a room for improvement (this is reflected as well in the recent upward evolution of total losses) (Pérez Arbeláez 2007).

Institutional and Regulatory Aspects

Responsibilities for policy and regulation of the various energy subsectors in Belize (oil, electricity, and biofuels) are currently distributed among multiple ministries. The electricity subsector is under the regulation of the Ministry of Public Utilities, Transport, Communications, and National Emergency Management. Renewables (i.e., biofuels) are governed by the Ministry of Natural Resources and the Environment. Oil exploration is also under the Ministry of Natural Resources and the Environment, but oil products are regulated by the Ministry of Finance. However, there is at present no government body in charge of overall energy policy in the country, coordinating and consolidating the various and related policy and regulatory aspects of these subsectors. There does not seem to be an integrated and explicit policy and regulatory framework for biofuels (bioethanol and biodiesel). The government has, however, taken scattered actions in this field, responding to initiatives brought so far mainly by private external actors.

The PUC regulates Belize's electricity sector, as it does the country's water and telecommunications sectors. It is mandated to determine and prescribe both the standards for provision of utility services and the rates that may be charged for them. The

PUC may grant to "any person or organization" licenses authorizing the generation, transmission, and/or distribution of electricity; Licensees are bound by a provision in their licenses that gives open access to the transmission system to entities specified in PUC bylaws. Qualified staff working on the electricity sector in the PUC are scarce.

The rates prescribed by the PUC for electricity provision in the country must be "just" and "reasonable," and it is also required to carry out its functions in such a way as to secure, among other things, satisfactory financing for the service provision; to protect the interests of consumers vis-à-vis tariffs, along with quality and continuity of service; and to promote efficiency. The PUC can make determinations (bylaws) on the process for determination of tariffs, quality-of-service standards, and the entities that may be afforded open access to the transmission system.

There are several issues that affect the capacity of the regulatory system for electricity to work effectively in Belize. They have to do with a lack of specialized personnel in the regulation area and with the integrated nature of BEL and the indirect ownership mentioned earlier (Fortis owns both a controlling majority of BEL and hydroelectric generation by Belize Electric Company).

Challenges

In sum, there are a variety of issues in Belize's electricity subsector:

- The transition towards local electricity generation.
- The fact that BEL is a vertically integrated company involved in all aspects of the electricity business: transmission, distribution, and generation.
- Ownership of hydroelectric generation, transmission, and distribution by the same parent company.
- Lack of an energy policy.
- Regulatory capacity of the PUC.
- BEL's technical losses of generated electricity.
- High electricity prices.

⁸ In regard to the distribution segment, BEL's ratios are the fourth highest among 50 utilities in developing countries and near the median value compared to U.S. utilities.

5.3 Policy Options

The linkages between long-term investment in infrastructure and growth have been identified by several scholars. For example, Calderón and Servén (2004) show that a country's growth is positively affected by the stock of its infrastructure assets and that income inequality declines with higher infrastructure quantity and quality. Although infrastructure provision in Belize is inherently difficult because of its low population density, which makes it structurally a high-cost country for infrastructure and utilities, priority investments and adequate maintenance are necessary for the development of the country's tourism, agriculture, and petroleum sectors, which are the drivers of economic growth. If left unattended, current infrastructure problems may become drags on future growth.

In addition to factors related to geography and size, Jha (2005) argues that in Caribbean countries, institutional factors—regulation, private or public operation, and the extent of competition on service provision—also explain some of the differences in performance in the provision of infrastructure services. Improving institutions can provide a way for governments to increase access, service, and efficiency in the infrastructure sectors.

Effective regulation can help address the problem of natural monopolies in provision of infrastructure services by defining price controls and setting service standards to create rules and incentives that will lead to fair and reasonable prices and services. Effective regulation can also create incentives that will lead providers to innovate, developing service delivery solutions better suited for small markets (Ehrhardt and Oliver 2007).

Conventional regulatory bodies are not suitable for small island economies, for three main reasons that could also be relevant for Belize, whose small size results in an economy with many similarities to those of small islands: (1) their cost is too high; (2) the specialized skills required for regulation are not readily available; and (3) independence of the regulatory body is difficult to achieve, given the small population and the fact that the utility is often the only source of utility skills, and naturally has a strong influence on government

thinking. Alternatives to conventional regulatory bodies include low-discretion rules, “light” national regulatory bodies, and regional regulatory bodies (Ehrhardt and Oliver 2007). Low-discretion rules can work well in small countries, since they are inexpensive to apply and reduce the need for regulatory expertise and independence. The caveat is that they are rigid, and effective utility regulation requires some discretion. Light national regulatory bodies—with limited staff performing limited functions—require less expertise and are less costly than traditional regulatory bodies and can be a good option for small economies with limited resources. Small economies can also contract regulatory expertise when needed. In Trinidad and Tobago, for example, the Regulated Industries Commission assists smaller islands on a fee-for-service basis (Ehrhardt and Oliver 2007).

Reforms in the area of regulation of infrastructure services have been attempted in the Caribbean, but there are so far no success stories. Jamaica, Barbados, Trinidad and Tobago, and Guyana are experimenting with independent regulation of state-owned utilities. This may help provide transparency in setting tariffs and stepping up pressure for efficiency, but it is not clear whether such regulation can lead to fundamental or lasting improvements.

Overall, significant improvements in sector performance are associated with private sector participation (Andres et al. 2008). Box 5.2 summarizes the accumulated lessons learned from private participation investments in the past 20 years. In Belize, the private sector plays an important role in the provision of infrastructure, yet the costs of infrastructure services are, as noted in the chapter, generally high. These high costs can possibly be attributed to a lack of economies of scale, although improvement in the management of public utilities could improve performance, as described previously.

Belize has undergone several privatizations since the early 1990s and created the PUC in 1999 to oversee the water, electricity, and telecommunications sectors. However, the country's small size lends itself to the formation of monopolies and to anticompetitive practices. The government's necessarily small size and limited resources complicate

Box 5.2 Critical Elements for the Success of Private Participation Programs

- **Improved institutional.** Projects should be selected as a consequence of countries' strategic plans and objectives and approved by an interministerial group led by the country's financial minister. Projects should be developed by an implementing agency, and regulation should be handled by a separate agency.
- **Improved contract and concession design.** Concession contracts should be awarded competitively and designed to avoid ambiguities.
- **Establishment of an appropriate regulatory framework.** The framework should be in place before the award of concessions, with sufficient autonomy and implementation capacity.
- **Provision of regulatory instruments.** Proper regulatory accounting of all assets and liabilities should be in place.
- Establishment of a conflict resolution mechanism.
- **Addressing of social issues** (e.g., establishment of mechanisms to compensate affected communities).
- **Strengthening of transparency** to provide a safeguard against corruption and communications to create popular support.
- **Evaluation of accomplishments** and communication of advances and pitfalls.

Source: Andres et al. (2008).

the task of regulation and protection of consumers. This has resulted in very high prices for utilities, especially electricity, with Belize exhibiting one of the highest electricity rates in Latin America and the Caribbean, as noted in the chapter's discussion of that subsector (Rowland 2008).

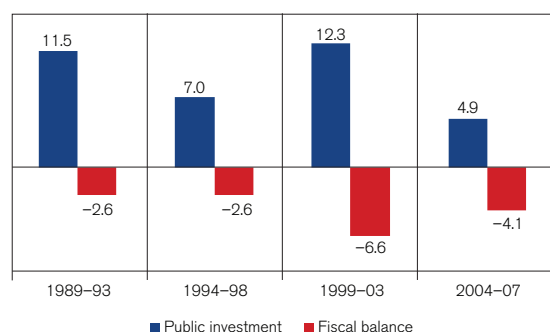
As mentioned earlier in the chapter, Belize's port and international airport, as well as the electricity and water sectors, have benefited from private sector participation. Hidalgo (2007) argues that opportunities should be explored in the road subsector, especially in regard to roads that could be linked to the tourism sector or to investment projects that benefit the public and private sectors. Hausmann and Klinger (2007) suggest that revenue bonds, used by municipalities in the United States for infrastructure investments, are an option where funds can be raised from abroad with direct claims to future flows from the infrastructure.

Low-cost multilateral finance and grants are another option for financing necessary infrastructure spending. The key consideration when seeking multilateral financing for infrastructure investments is that such financing has little to no impact on a country's publicly guaranteed debt, either immediately, or eventually, through the creation of contingent liabilities that the government may eventually have to assume.

The sectors and utilities that perform best under private provision tend to be those that can charge a cost recovery tariff and can be privately financed. However, some sectors, such as water, traditionally have encountered difficulties achieving cost-reflective tariffs and privately financing investments, and in countries with low institutional capacity, cost recovery and attracting investment may be more difficult. These difficulties seem to suggest public investment as an alternative, yet high public debt levels might make government borrowing to finance infrastructure difficult (Jha 2005).

Belize's fiscal situation severely limits the government's ability to invest in infrastructure provision. Rowland (2008) argues that it will be important for the government to provide selected infrastructure, while not compromising its fiscal goals, and it is particularly important that the government's limited resources for public investment be spent as efficiently as possible. As Figure 5.5 shows, fiscal adjustment in the country has been accompanied by sharp reductions in public investment since 2004. There has been no systematic trend in financing for public provision of infrastructure in Belize, and it is important to develop a systematic approach to capital investments in the economy. This will require a closer review of the institutional capacity to evaluate and prioritize public investment, as well as the provision of adequate

FIGURE 5.5. PUBLIC INVESTMENT AND FISCAL BALANCE
(percentage of GDP)



Source: IDB calculations using Ministry of Finance data.

tools and methodologies to carry out this type of analysis (Glenday and Shukla 2006; Shukla 2008).

5.4 Conclusions and Recommendations

Belize has made progress in developing its infrastructure, but there are issues of quantity and quality that need to be addressed. Belize's main productive sectors, tourism and agriculture, are highly dependent on good connectivity and quality services. In the case of agriculture, a lack of adequate feeder roads could limit the capacity to transport goods to market. In addition, sanitation problems, as well as domestic airport infrastructure below international safety standards, may negatively affect the tourism sector. The adverse effects of lack of maintenance are cumulative, and the result is that most roads in Belize are deteriorating at a fast pace. If left unchecked, this deterioration will lead to a substantial increase in the amount of road requiring major rehabilitation or reconstruction. The country needs to pursue a delicate balance between maintaining fiscal sustainability and providing the necessary investments to promote private-sector-led growth. It needs as well to further develop institutions to plan and organize infrastructure development, to provide a regulatory framework that encourages private sector participation, and to make priority investments to accompany development of tourism and agriculture.

In light of these challenges, recommendations for future development of infrastructure in Belize can be grouped in three areas: sector planning and

organization, regulatory capacity, and priority investments and/or improvements.

5.4.1 Sector Planning and Organization

Planning, organizational structure, and coordination issues are common to all sectors reviewed in the chapter. Specific recommendations for each subsector include:

- **In the transport sector**, a comprehensive review of the organization of the institutions responsible should be conducted, and the feasibility of creating an entity that would be responsible for the entire transport sector, with planning responsibilities (such as developing a master plan for roads and a road safety program), should be assessed (Hidalgo 2007).
- **In the energy sector**, Belize needs to formulate a coherent energy policy and analyze the best way to diminish the present dispersion by reorganizing and consolidating energy functions in a few coordinated entities (Pérez Arbeláez 2007).
- **In water and sanitation**, sector planning needs to be improved at two levels. At the provider level, village water boards providing service in rural areas need to develop multiyear business plans and budgets, to increase their ability to expand services and calculate the full cost of service provision. At the government level, objectives need to be set for expansion of wastewater coverage and water quality, and a water resources management master plan should be developed (Janson 2008).

5.4.2 Regulatory Capacity

The following improvements in regulatory capacity could contribute to improved services:

- **Strengthening capacity of the PUC.** The scarcity of human resources for the work needed in the areas of public utilities regulation could be addressed, either by training existing staff or considering options such as outsourcing some expertise, as has been done in the past in the case of rate reviews, and learning from the experiences in Caribbean countries that share similarities with Belize (Pérez Arbeláez 2007).

- **Guidelines for water sector regulation.** In reference specifically to the water sector, the government and PUC need to develop guidelines on which water and sanitation service providers should be subject to PUC regulation, as well as appropriate regulatory rules and licensing conditions for water and sanitation providers of varying sizes. It is not desirable to have comprehensive regulation for small water providers operating rudimentary water systems (such as the village water boards)—the costs of regulation for such providers often outweigh the benefits. However, in the future it will be more efficient for Belize to have fewer, larger providers offering both water and sanitation services, and to have the largest providers all regulated under consistent principles. This suggests that the sector would benefit from a clear policy on which water and sanitation service providers will need to apply for an operating license from and thereby be regulated by the PUC, and under what terms. Service standards and tariff rules may vary in detail and complexity in accordance with the size and scope of the service provider (Janson 2008).
- **Clarifying objectives for urban water and sanitation provision.** It is essential for the government to develop a clear idea of what it expects from BWS (for example, resolving the existing sanitation problems in Belize City) and providing the company's management with adequate financial resources (whether in the form of appropriate tariffs or targeted subsidies) to achieve the objectives identified (Janson 2008).
- **Modernization of domestic airstrips.** Strengthening the role of the BAA will be essential in accomplishing this. An operational model and regulatory framework for Belize's aerodromes should be developed based on the best practice of other reference countries and should include the following key aspects: procedures; services and equipment; information and communication; control, management, and implementation; and development of an aerodrome manual for each airstrip. In addition to implementing safety regulations and operational procedures, it is also of key importance that the commercial management of the network be strengthened to ensure that funds are well managed, revenues are maximized,

and any investments are financially sustainable in the long term. In particular, to avoid having short-term expenditures result in long-term insolvency, it is essential that the BAA follow a robust financial discipline (Advanced Logistics Group 2009).

5.4.3 Priority Investments and Improvements

- **Road maintenance.** The financial resources required annually for executing yearly routine and periodic maintenance of the entire road network need to be estimated, assessed, and appropriated, taking into account public debt and fiscal issues.
- **Expansion and improvement of municipal aerodromes.** Investment is necessary in order to bring Belize's municipal airstrips up to International Civil Aviation Organization standards and to meet tourism demand. Private sector participation is a very risky option, as a result of the oligopolistic business structure of the country's aviation sector and its uncertain institutional and regulatory framework. Given the limitations on public investment, any private investments should be preceded by the institutional reforms mentioned in the previous subsection (Advanced Logistics Group 2009).
- **Improvements in water and sanitation.** There is a need for investment for expanding wastewater services to ensure wastewater collection in areas where it is economically viable, and for improving wastewater treatment and water coverage in rural areas. However, BWS and the government should effectively demonstrate that the company can remain financially viable in the face of any proposed project before it is undertaken. Although BWS has achieved a level of nonrevenue water that is acceptable by international standards, if the level is reduced, this could in turn reduce the company's operating costs. Thus BWS should implement a program for reducing the amount of nonrevenue water through a contract with a private operator (Janson 2008).
- **Private sector participation in water and sanitation.** There is scope for private sector participation in both BWS and non-BWS service areas. In non-BWS service areas that are smaller and more rural, the Rural Develop-

ment Department could contract small-scale private providers to run village-based systems (as is being done on a trial basis in Jamaica). However, given that this would be a very new form of provision in Belize, it could be difficult to establish, and generating sector interest might require some time and effort. Private sector participation would be more feasible within BWS service areas and some of the rapidly growing tourist and commercial areas (such as the Placencia Peninsula and the Corozal commercial free zone). Such participation could theoretically range from the provision of specific services to full control of BWS operations. As a result of the reversal of water sector privatization in 2005, there would likely be limited interest from the private sector in owning and operating BWS at this point, unless the government could commit to a reliable and predictable tariff regulatory regime that guarantees that BWS will be able to recover its efficient costs plus a reasonable return. Accordingly, more-limited private sector participation is recommended at this time—specifically, private sector participation in nonrevenue water reduction and potentially in development and operation of specific systems such as in the Placencia Peninsula (Janson 2008).

- ***Increasing the efficiency of the electricity market.*** The chief means for increasing the efficiency of the electricity market in Belize would be through a reduction of losses and an identification of the reasons behind the current high costs of electricity. Reducing losses effectively would require a detailed independent study on the investments that would be necessary to reduce the level of technical losses. The current relatively high technical losses could be substantially decreased by investments in 34.5 kilovolt and above transmission lines, as well as by upgrades to some existing distribution-level circuits that are most heavily loaded, so that they can operate at higher voltages. Given the cost of these investments, a comprehensive cost-benefit analysis would be necessary. In regard to the high prices of electricity compared with developing country benchmarks, there is room for improvement both in the cost of power (generation) and in the value added of distribution. However, a final determination about the level of costs of delivering power (transmission, distribution, and supply) in Belize, and thus how much cost and price reduction could be attained, would require a thorough independent study of costs of service (Pérez Arbeláez 2007).

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Tourism: Achieving Balance for Sustainable Growth

6.1 Introduction

The tourism sector in Belize has evolved considerably since the first National Tourism Strategy was formulated in 1998. The advent of cruise ships has led to almost a fivefold increase in the annual number of visitors to the country, and a cruise ship port is now under consideration. New products and niches—such as cave tubing and adventure tourism—have diversified the country's tourism activities. Time-shares and condominiums are being built at several locations along the coast and in the cayes. Under these circumstances, policy issues facing the sector today are distinct from those that existed a decade ago. This chapter briefly reviews the sector's performance and discusses several policy issues relevant to achieving economic development through the sector.

6.2 Sector Performance

Tourism is one of the main engines of growth in the Belizean economy and the principal source of foreign exchange. The sector generated US\$281 million in visitor expenditures in 2008, slightly outstripping total domestic merchandise exports and corresponding to 21 percent of gross domestic product (GDP).¹ As such, tourism is the largest sector of the economy. It is also an important source of employment, with more than 25 percent of the employed labor force estimated to be related to or driven by the sector.

Belize's tourism sector has grown significantly in the past two decades. The total annual number of tourists increased from 190,200 visitors in 1998 to 842,396 visitors in 2008 (Belize Tourism Board 2009). Belizean travel service exports grew at an average rate of 13.6 percent per year between 1988 and 2008, increasing more than tenfold during this period. The global economic recession in 2009 did bring to a halt the rapid growth of overnight visitor numbers. In the first nine months of 2009, the number of overnight visitors declined by 10 percent compared with a year earlier. By contrast, cruise ship disembarkations rose by 11 percent in the first nine months of 2009. According to projections from the World Travel and Tourism Council (2007), total demand for the sector in Belize is expected to grow by 3.8 percent annually in real terms between 2008 and 2017.

Belize's tourism product is highly dependent on the country's natural and cultural heritage. In addition to many archaeological sites now recognized internationally through the Mundo Maya initiative, Belize encompasses a network of both terrestrial and marine protected areas offering a range of oppor-

¹ Data are from the Central Bank of Belize.

tunities for diving, wildlife observation, and bird-watching, hiking, and other recreational activities. Based on 2006 data, the most popular attractions are archaeological sites at Altun Ha and Xunantunich, Hol Chan Marine Reserve, the Belize Zoo, the Mountain Pine Ridge Forest Reserve, and several other natural protected areas. In addition to its unique combination of Mayan cultural sites, the world's second-largest barrier reef (a World Heritage Site), and accessible tropical forest reserves, Belize has several competitive advantages that contribute to its market share. These include a largely English-speaking population and diverse culture as well as a relatively stable political situation. It is expected that Belize will continue to offer a competitive product in several segments, including adventure tourism, ecotourism, cultural tourism, and community tourism, as well as to serve the cruise ship segment, thereby taking advantage of the growth expected internationally for these segments.

Belize's tourism sector caters to two distinct market segments: (1) overnight or "stay-over" visitors and (2) cruise ship passengers. A total of 245,000 overnight visitors were recorded in 2008, approximately 29 percent of all arrivals. This segment has shown steady growth, with arrivals almost doubling since 1995. The United States and Canada accounted for 60.7 and 6.6 percent, respectively, of overnights in 2007, and Europeans represented 13.6 percent of the market share (Table 6.1). Approximately 75 percent of all overnight

visitors stayed in Belize District; the remainder stayed in South Stann Creek (i.e., Placencia) and Cayo Districts.

The overnight segment is served by approximately 600 hotel and resort facilities offering a total of 6,075 rooms. With an average size of 10 rooms per operation (of all the hotels, only 51 have more than 20 rooms), the sector is characterized by smaller properties, many (60 percent) Belizean-owned. Occupancy rates in 2007 were on the order of 43 percent, indicating that the segment faces important challenges in offering an "export-ready" product. The highest occupancy rates occur from January to April, and the lowest rates coincide with the peak of the hurricane season in September and October. Estimates indicate that 20 percent of the room stock generates 80 percent of the occupancy. In addition to seasonality, low occupancy rates are attributed to problems in meeting product quality standards, which, in turn, are associated in part with high operating costs, supply constraints, and other business climate limitations. According to figures provided by the Social Security Board, employment in the hotel sector was up by 7 percent between 2005 and 2006. Almost all destinations showed job increases; Ambergris Caye, Caye Caulker, and Placencia had increases of 10, 17, and 26 percent, respectively.

Cruise tourism has been the fastest-growing segment of the country's tourism industry. Cruise passenger arrivals grew from 14,183 in 1998 to

TABLE 6.1. OVERNIGHT TOURIST VISITORS BY MARKET SHARE

Area	2000	2001	2002	2003	2004	2005	2006	2007	2008P
United States	53.5	54.2	52.4	57.7	59.5	61.7	61.3	60.7	60.3
Canada	4.7	4.8	4.6	4.5	5.2	5.7	6.3	6.6	7.2
Europe	14.1	15.2	14.6	15.2	14.2	14.1	13.9	13.6	14.0
Latin America	17.6	16.0	19.3	16.1	14.6	12.1	12.1	11.9	11.4
Belizeans living abroad	7.2	6.6	6.0	3.5	3.3	3.3	3.4	3.6	3.6
Caribbean	0.9	0.9	1.0	0.9	1.0	0.9	0.9	1.0	0.9
Asia	1.1	1.2	1.1	1.1	1.2	1.0	1.0	1.3	1.1
Oceania	0.6	0.6	0.6	0.6	0.7	0.8	0.9	0.9	1.0
Middle East	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Africa	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Belize Tourism Board (2009).

624,000 in 2007, or approximately 71 percent of all tourist arrivals. Belize's main attraction as a cruise destination resides in its unique combination of cultural heritage and nature-based and adventure tours. The country's relatively low head tax compared with other Caribbean destinations and the shift in cruise line itineraries following September 11, 2001, contributed to explosive growth in the sector. After a marked peak in growth in 2004, the cruise ship segment is showing signs of leveling off, with a total of 278 ship calls in 2007, a 25 percent decline in calls relative to 2005 (see Figure 6.1).

Cruise ship passengers arriving in Belize are transported from cruise ships by smaller vessels to the Ford Street Tourism Village in Belize City, where they are taken by bus to various nearby destinations. The government is currently considering proposals for the development of a new cruise ship terminal.

Belize's exposure to a range of natural hazards has direct implications for the tourism sector. The coastal areas and offshore cayes in particular are vulnerable to the effects of hurricanes and flooding.

In summary, the tourism sector's performance has improved significantly since 1995, with steady but moderate growth in the overnight segment and very rapid growth with recent leveling off in the cruise ship sector. Belize's market share of international tourist arrivals in the Caribbean region also grew from 2.8 percent in 1995 to 4.2 percent in 2005. Nonetheless, overnight visitors as a

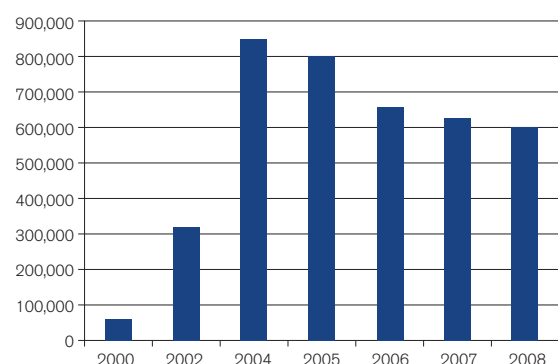
percentage of overall arrivals in Belize are among the lowest in the region, and as a consequence, expenditures by tourists in Belize on a per capita basis are considered low, with significant room for growth in the overnight segment (Chapter 1).

6.3 Legal, Institutional, and Policy Framework

There are several laws related to tourism and tourism-related activities in Belize. Those laws that speak directly to and provide guidance for activities in the sector include the following:

1. *Belize Tourism Board Act, Chapter 275(S), Subsidiary Laws (revised 2003)*. This act establishes regulations for tour guides, tour operators, local water passage, and water sports vessels. It provides for a committee, defines the powers and functions of the committee, and describes the protocol and requirements for licensing and revocation of licenses of tour guides, tour operators, and vessels. Under the tour guide regulations, all tour guides must have recognized accreditation, be a Belizean citizen or of permanent residency with tour guiding as their main occupation, and be recommended by a recognized tour guide organization. Licensed tour operators are required to utilize only licensed tour guides, maintain valid licenses and insured tour safety equipment, possess valid insurance, and take all necessary steps to safeguard the environmental, moral, historical, and cultural integrity of Belize.
2. *Hotels and Tourist Accommodation Act, Chapter 285 (revised May 2003)*. This act provides for a registrar of hotels and tourist accommodations, whose primary responsibility is to ensure the licensing of all acceptable hotels and tourist accommodations. The law defines the power and function of the licensing authority and stipulates the taxes to be paid on accommodation charges. It also requires that minimum standards be observed by hotel and tourist accommodations and stipulates notification of charges to guests, distribution of service charges, registration of guests, and the mode and manner of payment by guests.
3. *Hotels and Tourist Accommodation Act, Chapter 285(S) Subsidiary Laws (revised October*

FIGURE 6.1. TOTAL CRUISE SHIP PASSENGER ARRIVALS TO BELIZE, 2002-08



Source: Belize Tourism Board (2009).

2003). This act expands on the minimum standards to be observed by hotel and tourist accommodations to include specific, measurable requirements pertaining to registration, licensing, and operating requirements for hotels, resorts, apartments, condominiums, villas, guesthouses and lodges, community-based tourist establishments, campsites, live-on-board vessels, and research facilities.

There is no specific tourism investment incentive regime in Belize and, in that regard, the sector has succeeded in competing for investment on a level playing field with other sectors. Unlike most other Caribbean countries, where there are investment incentives specifically for the tourism sector, Belize stands almost alone as one of the few countries where such incentives are encompassed as part of the broader incentives regime related to all economic sectors. Tourism and tourism-related services are required to comply with the existing array of legislation enacted by the government to encourage private, local, and foreign investment: the Fiscal Incentives Act of 1990, the Export Processing Zone Act of 1990, the Commercial Free Zone Act of 1994, and the Retired Persons (Incentives) Act of 2003.

The institutional framework for the sector consists of the Ministry of Tourism and Civil Aviation, which is responsible for policy; the Belize Tourism Board, which is responsible mainly for implementing policy; and the Belize National Tourism Council, a coordinating body. In addition to the minister, the ministry includes a chief executive officer, an advisor, and support staff.

Established by law in 2000, the Belize Tourism Board (BTB) is a statutory body within the Ministry of Tourism that represents a strategic partnership between the government and the private sector. The partnership implements tourism programs aimed at fulfilling the emerging needs of local industries and benefiting from the international tourism market. The BTB's responsibilities include, among other functions, planning, developing, and promoting the tourism industry; promoting private investment in tourism; and vetting the standards of facilities offered by the industry. The BTB works closely with the Ministry of Tourism and Civil Aviation, the National Institute of Culture and History, the Protected Areas

Conservation Trust, and other public sector entities in the establishment of tourism policies. It also works with the Belize Tourism Industry Association (BTIA) and other private sector organizations. Its revenues are derived primarily from accommodation taxes and the cruise passenger head tax (70 and 24 percent of total revenues in 2006, respectively).

Although only recently reactivated, the Belize National Tourism Council was created by law in 2000. Falling under the chairmanship of the Minister of Tourism and Civil Aviation, it brings together the relevant actors from the public and private sectors. The Council includes among its objectives developing, establishing, and monitoring the plans and policies, procedures and guidelines, legislative measures, and educational and training programs necessary for the efficient management and development of tourism in Belize.

Local governments (city, town, and village councils) with jurisdictions in tourist destinations have had a limited role in the sector to date. However, new initiatives are emerging, such as an innovative proposal to establish the Belize City Tourism Development Fund, which would derive its revenues from the cruise ship head tax. The fund would enable the city to improve maintenance and services in downtown tourist areas. In other instances, town and village councils and local boards are responsible for administering basic services, such as water supply and solid waste management in tourist localities. However, they lack the capacity to provide the coverage and quality required by the sector. These and other local entities can play an important role in ensuring that future tourism development is compatible with the land use and social conditions of destination areas.

Incorporated under the laws of Belize in 1989, the Belize Tourism Industry Association is the country's largest private sector organization. It has evolved into an intermediary between the government and the private sector as well as between the private sector and national and international organizations. The BTIA is governed by a 19-member board of directors that includes chairpersons of the different Belizean tourist destinations—Ambergris Caye, Belize, Corozal, Caye Caulker, Cayo, Dangriga, Orange Walk, Placencia, and Toledo—and the Belize Hotel As-

sociation, Belize National Tour Operators Association, Belize National Tour Guides Association, and Belize Eco-Tourism Association. With 400 members, it boasts representation on a number of government, legislative, advisory, consultative, and licensing committees.

6.3.1 Country Strategy for the Sector

The government of Belize officially recognizes tourism as a national priority sector in its economic development agenda and has adopted the principle of responsible or sustainable tourism in developing the travel and tourism industry. As established in its 2005 Tourism Policy, the government's vision for the sector is to "develop a vibrant and progressive tourism industry through a responsible approach which embraces a strong 'eco-ethic' and effective destination management that seeks to improve the quality of life for all Belizeans." Recognizing the need for balance, the policy calls for zoning to help prevent and reduce potential conflicts between cruise ship excursions and other visitor activities. It also underscores the fact that planning and management of the tourism sector should be based on partnerships and that communities must play a meaningful role that ensures that economic, social, and cultural benefits accrue to local residents.

While calling for an appropriate balance between overnight and cruise ship tourism, current national policy recognizes that growth potential resides with the overnight segment. This is the segment for which Belize's tourism product is well matched with global market trends toward ecotourism, adventure, cultural, and community-based tourism.

The government has also approved a Cruise Ship Tourism Policy that aims to support growth in the cruise ship segment within the framework of its environmental policy and with a view to increasing the overall benefits from the industry. The policy establishes guidelines for cruise ship visitation to ensure that the carrying capacity of individual sites is respected. It also requires that an Environmental Compliance and Monitoring Plan be signed and adhered to by port agents on behalf of ship owners upon entry of cruise ships into Belizean territorial waters and at all times while vessels are in Belizean waters. In addition,

the government is signatory to a Declaration of Commitment, in which key industry stakeholders, including the cruise lines, civil society, the private sector, and government commit to sustainable cruise tourism practices, such as protecting coral reefs from anchor damage (Conservation International, Belize Ministry of Tourism, Belize Tourism Board, and Oak Foundation 2007).

Following the 2008 national elections, the government confirmed the central position of the tourism sector in its economic development strategy and reiterated that the core message for the sector remains consistent with the 2005 policy. As such, the product focuses on the country's natural and cultural heritage, an equitable distribution of benefits through promotion of the overnight segment, and the delivery of a world-class visitor experience. The government also seeks to improve its participation in regional networks as part of both the Central American and Caribbean circuits.

6.4 Issues

To remain competitive and grow, the tourism sector in Belize needs to address several pressing issues and challenges. This section discusses a few of the main issues (Belize Tourism Board 2004).

6.4.1 Visitor Experience and Resource Sustainability at Popular Destinations

Visitors tend to be concentrated in a few popular sites during the short high season. This raises concern about the capacity of existing destinations for accommodating demand without damaging the quality of the visitor experience or the associated natural and cultural resources. Congestion is reported as a significant problem at times when overnight and cruise ship passengers converge in large groups in protected areas close to Belize City, exceeding capacity for visitor services and, over time, leading to environmental deterioration of the sites. In addition, some sites—such as Placencia, San Pedro, and Caye Caulker—face severe limitations in the provision of basic services to the communities that function as staging areas for tourism. Coastal areas and the offshore cayes are particularly vulnerable to problems of insufficient potable water during peak periods, untreated wastewater and

associated contamination of nearby waters, and lack of alternatives for the disposal of solid waste (IDB 2008). In addition to the need for improved basic infrastructure, this raises the need to establish, implement, and monitor acceptable levels of visitation at those sites/attractions valuable to the overnight segment, as well as to apply measures for restoring and protecting natural and cultural resources, thereby ensuring that visitors receive quality services and attention. Although Belize has a sound complement of environmental laws, institutional capacity for enforcement and incentives for compliance must keep pace with expansion of the sector, both in the national system of protected areas and at staging areas.

6.4.2 Balancing Overnight and Cruise Ship Tourism

Balancing the cruise ship and overnight market segments is one of the main challenges the country faces. There is growing recognition of the need to manage destinations for cruise ship excursions while ensuring that these do not compromise the overnight segment, particularly in areas where Belize has comparative advantage. Important differences between cruise ship and overnight visitors have to be taken into account in future planning for the sector.

Despite their relatively small numbers, overnight visitors contributed 87.7 percent of total direct expenditures by tourists in 2006, compared with 12.3 percent from cruise ship visitors. In addition, the overnight segment has proven less volatile, rising steadily since the late 1990s. The cruise ship segment has grown faster but has been more susceptible to external events, such as natural disasters. The overnight segment also accounts for 90 percent of all employment in the industry. Spending by cruise ship visitors is heavily concentrated in Belize City; spending by overnight tourists is spread more widely across the country.

The cruise ship industry is likely to be a permanent segment of the tourism industry in Belize. Therefore, the country must address several challenges, including specific infrastructure requirements (deepwater port access), the role of government in the industry, and how to ensure that a greater number of local service providers and communities benefit from the segment.

Although significant potential for growth exists in the overnight segment, the government faces the question of how best to achieve that growth and meet the official target of 5,000 new tourism jobs in five years. Industry representatives have yet to reach consensus on which model of growth best suits Belize's circumstances: (1) steady growth achieved using the model of small "boutique" accommodation units or (2) a much faster rate of development through "flagship" properties.

6.4.3 Development of New Destinations and Products for Overnight Visitors

Increasing expenditures by the overnight segment by offering a more diversified yet sustainable product is now recognized as a cost-effective way to ensure that the tourism sector contributes to local economic development. Recent experience with the popularity of adventure and other specialty tours (e.g., cave tubing) suggests that there are untapped opportunities that could help diversify the tourism product, raise occupancy rates, and consolidate the overnight segment without jeopardizing the country's branding. However, the sector must overcome basic constraints, for example, limited access, signage, and other visitor services in geographic areas with high potential demand. Transport infrastructure (roads, rural airports and airstrips, and docks) and services, in particular, need to take into consideration land and marine corridors that link both popular and emerging destinations (IDB 2007).

Overcoming these basic constraints is viewed as an important factor given that the competitiveness of Belize's tourism product depends in large part on exploration, adventure, and experiencing the authentic culture and history of the country. Tourism circuits combining recreational activities with unique lodging experiences, local gastronomy, and indigenous culture are still incipient and need to be promoted in partnerships between central and local governments, businesses, communities, and private investors. If planned correctly, diversification of attractions and the increase of destinations consistent with the country's branding ("Belize, Mother Nature's Best Kept Secret") could also contribute to reducing pressure on congested sites and helping distribute economic development benefits to new areas.

Belize's diverse cultural experience enhances its competitiveness as a tourism destination and is likely to play an important role in the development of new or emerging destinations. Although Belize's culture, including the traditions of its two indigenous peoples (Maya and Garifuna), is often featured as part of the tourism product, indigenous communities themselves have had a limited role in the development of the sector. As new destinations are promoted, particularly in Toledo and Stann Creek Districts, expansion of the sector needs to be consistent with the process of "development with identity" and indigenous rights (over both land and resources) (Chapter 1). Along the same lines, community involvement in tourism is a fundamental policy issue for the sector. To realize the excellent potential it offers in community tourism, Belize must develop capacities as well as market distribution channels that benefit smaller and grassroots operators.

The rapid expansion of residential units as second homes (for example, condominiums and time-shares), such as that taking place in North Ambergris Caye, raises the question of how residential units compare with hotel accommodation in terms of revenue generation, economic impact, and public infrastructure requirements. Competing demand for properties with beach access and coastal land in general calls for accelerated physical planning and strengthening of development review processes.

6.4.4 Institutional Capacity for Sector Coordination, Destination Planning, and Management

Investments in tourism in Belize have been largely ad hoc, in part as a result of growth rates that have far exceeded forecasts. There has been little coordination between decisions on public infrastructure and private investments in accommodations and associated facilities, as evidenced by the significant gaps observed between the availability of services in popular destinations and demand during peak periods. Even now, there is no unified and systematic way of tracking proposals for new resorts and their implications for land use, pollution control, and other carrying capacity considerations. These problems reinforce the need for more-integrated approaches to destination planning that can address needs for physical

infrastructure in the context of coherent, locally endorsed plans for zones or regions selected as priorities for tourism development. Public institutions across a number of sectors (tourism, natural resources and environment, coastal zone management, public works, and agriculture) need to work closely with private investors, local governments and businesses, communities, and other stakeholders to achieve a common tourism strategy at each of these destinations in accordance with their role.

Management capacity in regard to the sector also encompasses the human and financial resources allocated to environmental monitoring and enforcement, either directly by government institutions or through cooperative arrangements for managing protected areas. But management capacity has not kept pace with the expansion of the tourism sector. Problems such as illegal dumping of waste, coastal discharge, logging, and overfishing pose a direct threat to the scenic quality and recreational potential of popular sites, adding to the risk that environmental deterioration at popular sites will contribute to visitor perceptions of declining product quality.

6.4.5 Business and Investment Climate

Product development and diversification require a favorable business and investment climate. Utilities such as electricity, telephone, and water, although accessible, are expensive and add significantly to the operating costs of tourism businesses. Despite the general myth that land is abundant and readily available in Belize, land suitable for development is actually limited. The country, with the assistance of the Inter-American Development Bank, has undertaken a gradual process of modernizing its land registry as a move toward secure property rights, which should contribute to a dynamic real estate market. As it addresses land rights in the southern part of the country (Toledo and Stann Creek Districts), the country should take into consideration the legal status of Garifuna and Maya lands.

Lenders in Belize carry high interest rates, chiefly as a result of low savings, which presents an obstacle to investment from local sources in the tourism sector (Chapter 1). Future growth is

more likely to result from foreign direct investment, which is not subject to these high domestic interest rates. Attracting such investment in the tourism sector will depend on the provision of complementary public infrastructure and services (road improvements and maintenance, rural airport infrastructure, water and sanitation, and solid waste management) that in some instances may offer opportunities for private sector investment.

6.4.6 Market Readiness and the Need for International Quality Standards

Developing a market-ready tourism product is crucial for the sector.² The BTB estimates that only about 105 of the more than 500 tourism accommodations can truly be characterized as offering an “international market-ready” product. Although loosely defined, the question of market-ready product standards is fundamental to sustained growth in the sector. As a service export industry, tourism in Belize must meet international market requirements.

As Belize is an ecodestination, its tourism industry includes marine (boating, cruising, fishing, scuba, snorkeling, etc.), aquatic (canoeing, rafting, swimming), terrestrial (Mayan sites, hiking, trail-ing, biking, equestrian, etc.), and subterrestrial (caving, cave tubing, cave diving, etc.) activities. As a traded product, tourism is facing increasing competition internationally and regionally. Thus, global competitiveness is critical, and Belize needs to become competitive on delivery and quality, in addition to price and product diversity. Delivery and quality are inextricably interwoven with compliance and enforcement of standards. Despite this, to date standards have been developed only for a select few subsectors of Belize’s tourism industry, and even these standards are fragmented and enforcement is selective. In addition, although existing legislation does provide for adherence to established public health and safety standards, the effect is more to subsume the tourism product within the existing regulatory framework rather than to develop a framework of standards aligned with international quality requirements.

Given the structure and nature of Belize’s tourism industry, standards need to be developed in a number of areas in addition to accommodations. In some instances, standards exist, but they are not specifically aligned with or do not serve the needs of the tourism sector. As a group these include, among others, transportation (by air and over land and water), vending, aquatic and marine-based tourism, ecotourism products and services, tourism product labeling and packaging, attractions and events (historical, cultural, and other), travel agencies and tour operators, restaurants and food catering services, tourism information services, tertiary-level tourism education and hospitality management programs, and financial services infrastructure.

6.4.7 Development of Human Resources

Through a combination of partnerships with international organizations such as the Multilateral Investment Fund and private sector initiatives, Belize has developed a strong set of skills programs and tools for the tourism sector (for example, tour guide certification). Although these programs have had a positive effect on the quality of service the sector provides, the broad consensus is that significant work remains. A number of questions pertaining to important policy issues arise from the need to meet the sector’s requirements for a diverse, skilled labor force. Are there distinctions in regional and/or destination demand for trained personnel? What is the best way to provide training services through a combination of public sector/formal education programs and private sector initiatives such as those successfully implemented by Belize’s high-end ecotourism? What should be the scope of and priorities for a human resources development strategy? And how can the country make its human resources development program financially sustainable?

6.5 Policy Recommendations

Sustainable growth in Belize’s tourism sector depends on a combination of sound public and private investments made within a policy and

² Discussion based on Belize Tourism Board (2004).

regulatory framework in which the “rules of the game” are transparent and equitable. This calls for a more-integrated approach to planning for the sector as well as development planning across sectors. This section sets out the main policy recommendations for increasing the tourism sector’s contribution to economic development and growth.

6.5.1 Integrate Responsible Tourism in Economic Development Planning

To ensure sustained growth in the sector, the objectives, targets, and requirements of tourism should be integrated into the government’s broader framework for midterm economic development planning. There should be a clear link between national and local development objectives, public infrastructure investments, and the national tourism policy. The government has taken a first step in this direction by reactivating the National Tourism Council as a mechanism for interagency coordination. This should pave the way to greater harmonization of tourism policy with policies for other, associated sectors such as agriculture, public works (particularly transportation), environment and coastal zone management, disaster risk management, and education.

6.5.2 Develop a National Tourism Master Plan

A National Tourism Master Plan for Belize should be developed through a participatory process consistent with the country’s revised 2005 Tourism Policy. Decisions on the content of the master plan should result from a prior consultation with stakeholders taking into consideration international best practice. The plan should include some basic elements: (1) a consolidated vision for the sector and its role in national and local economic development; (2) measures to promote innovation for diversifying the tourism product, focusing on the country’s natural and cultural heritage, adventure destinations, and hospitality; (3) zoning (at the scale of districts) and geographic priorities for destinations with a view to promoting alternative destinations in order to reduce pressure at popular sites; (4) provision of tools for striking a balance and managing potential conflicts between overnight and cruise ship tourism, with a view to optimizing the economic benefits and ensuring their

equitable distribution; (5) establishment of basic rules for emerging segments (e.g., time-shares); (6) priorities for institutional and entrepreneurial strengthening; (7) priorities for the human resources development strategy; and (8) shared responsibilities (national and local government and private sector).

6.5.3 Promote Integrated Destination Management

Public and private sector investments in tourism in Belize should be made within the context of a locally endorsed and integrated destination management model that should clearly define and differentiate each destination’s tourism vocation as justified by the demand and the product. It should allow for close coordination among the government institutions, businesses, and communities that form part of the tourism “cluster.” The model must provide for a land use zoning plan (consistent with the National Tourism Master Plan but more specific), an action plan for enhancing competitiveness, environmental sustainability, local economic benefits, and other considerations, such as integrated disaster risk management and climate change adaptation and a portfolio of infrastructure investments (public and private). Indicators, including environmental indicators, should be established by consensus and closely monitored during implementation. Pilot plans should be developed concurrent with the master plan process to create in-country capacity for destination planning and management.

6.5.4 Improve the Business Climate and Infrastructure

Attention must be directed at improving the overall business climate in the country for tourism and associated industries, working toward the removal of institutional bottlenecks, reduction of operating costs (e.g., utilities), and improvements in basic public infrastructure and associated services. In terms of infrastructure, priority should be given to improving corridors and circuits (road, air, and water), reducing pollution (through sanitation and solid waste management), and enhancing tourism assets (protected areas, urban cores) while giving due consideration to environmental and social impacts. Partnerships with local governments and the private sector should be pro-

moted in providing a competitive and diversified tourism product.

6.5.5 Provide Private Sector Incentives

Belize's government should provide incentives to the private sector for compliance with quality standards and technological innovation. An important aspect of the sustainability of tourism destinations depends directly on the management practices of the tourism operators. Belize should build on its successful experience with certification of segments of the industry to develop quality standards for sectors not yet regulated. It should also develop incentives for operators to comply with internationally recognized standards for industry-related facilities and services. As part of these incentives, the government should actively promote technological innovation in the use of

renewable energy, environmentally sound methods and processes for operations, and other innovations that protect and restore tourism assets.

6.5.6 Build Institutional Capacity

Belize should build institutional capacity at the national and local levels, including the capacity to manage environmental quality. This will require enhanced capacity at both of these levels. Key areas that should be strengthened include tourism market analysis, physical planning (including land use and design standards to prevent losses from natural hazards), development proposal tracking and review, monitoring of compliance with quality standards (including environmental monitoring and enforcement), and operation and maintenance of basic services (particularly water supply, wastewater collection and treatment, and solid waste management).

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Agricultural Sector: Assessment and Priorities for Public Investment and Policy

7.1 Structure and Performance of Belize's Agricultural Sector

7.1.1 *The Natural Resource Endowment and Types of Agricultural Production*

Belize is the smallest and least densely populated country in Central America. It also is the country with the highest rural share of total population in the region and, atypically, its rural population is still growing faster than its urban population (IFAD 2007). Belize was first colonized by Europeans for extracting wood from its extensive forests, and even today it remains a relatively forested country, although it is a timber importer. The government has placed about two-fifths of the total country's land in protected areas—a high proportion.¹

Belize has an excellent climate for agriculture and abundant water resources. As of 2001, the natural endowment of internally renewable water resources was about 10 times that of Central America and the Caribbean as a whole, at 67,917 cubic meters per capita, versus an average 6,645 for the region (World Resources Institute 2006). Land, too, is abundant by the standards of the region. Approximately 800,000 hectares or 38 percent of Belize's total land area is considered suitable for farming and raising livestock. But currently only 9.7 percent of the land is used for agriculture: about 78,000 hectares (193,000 acres).

The low rate of utilization of arable land can be explained mostly by the cost of developing it, including building access roads, providing potable water and electricity, constructing irrigation facilities, and in some cases clearing the land, without touching protected areas. Lack of secure markets and profitable new farming options also may be factors contributing to the apparent underutilization of the land resource.

As a result of these circumstances, many of the farms in Belize are quite small. Nationally, 24 percent of the farms have less than five acres, a percentage that rises to 35 percent in the Toledo District in the country's extreme south. Based on analysis of Belize's Farm Registry, 57 percent of farms have less than 20 acres. The International Fund for Agricultural Development (IFAD) points out that the distribution of land holding is quite uneven, with the 24 percent of farms that are smallest (those under 5 acres) hold-

¹ By comparison, Costa Rica, which is commonly recognized for its advances in this regard, has 25 percent of its land mass in protected areas.

ing only 1.4 percent of the farmland. This figure is slightly misleading, because 46 percent of the land registered to farms is unutilized, and experience in other countries shows that essentially none of the land on the smallest farms goes unutilized, so undoubtedly this idle land belongs to the larger farms. Taking this factor into account, it may be said that the smallest 24 percent of farms hold 2.6 percent of the utilized (or usable) farmland, a share that is still very small, but not quite as dramatically so.

A similar estimate may be made for the two smallest farm size classes together. It may be assumed conservatively, without introducing much error, that farms with 0 to 20 acres utilize 90 percent of their land. (The precise figure may be somewhat higher.) Applying this assumption, it can be said that the 57 percent of all Belizean farms that have 0 to 20 acres are cultivating 18 percent of the country's utilized land.

Though there may be some scope for expanding the cultivated land area, with adequate infrastructure, raising productivity on all classes of farms is going to be a prerequisite for continued sector growth. In addition to the largest farms, which have obvious commercial potential, the 2,641 farms (27 percent of the total) that have 21 to 50 acres should not be overlooked in strategic planning. The smaller farms can access opportunities to participate in high-value agriculture through effective farmers' associations or groupings, contract farming, and other forms of alliances among producers and with processing and marketing agents. These issues are discussed later in the chapter.

Overall, about 19 percent of the country's labor force is classified as agricultural (UNData 2010), although that figure could be considerably higher if informal, part-time employment were fully accounted for. In addition to the prevalence of small farms, about 26 percent of the rural population is landless. Although some of the landless households are involved in the service sector, including small tourism-related enterprises, or commute to work in urban areas, undoubtedly many of them earn their living solely by working as hired labor

on farms. As a consequence of these factors, the share of households that are poor is almost twice as high in Belize's rural areas as in its urban areas. The share of extremely poor (indigent) households is even more tilted toward rural areas: 12.7 percent versus 3.3 percent in urban areas (IFAD 2007, 16).²

The shares of the population that are poor vary considerably by district, with Toledo again standing out in this regard. By district, the percentages of the population that are classified as poor or extremely poor are as follows: Corozal, 26.1; Orange Walk, 34.9; Belize, 28.4; Cayo, 27.4; Stann Creek, 34.8; Toledo, 79.0. For the entire country, the percentage is 33.5 (Government of Belize 2002).

The dominant products of Belize's agricultural sector are sugar, bananas, and citrus. These crops are the principal sources of agricultural employment and foreign exchange earnings. The fisheries sector, traditionally based on shrimp, lobster, and conch, is another important foreign exchange earner, and papaya exports have increased rapidly to the point that papaya is the fourth-most-important crop in export earnings. Belize is now the second-largest papaya exporter in the world.

As a reflection of the importance of citrus, bananas, and sugar, permanent crops are the dominant form of land use, followed by pasture for livestock and then annual crops. Livestock, vegetables, grains, root crops, and beans are important for the domestic market and, to a much lesser extent, for exports. The principal types of livestock at present are beef cattle, dairy cattle, poultry, and pigs, although there is growing interest in sheep. There are very few fattening operations for beef cattle, with grass-fed beef being the main product.

The principal grains produced are rice, corn, and sorghum. The smallest, poorest farms typically grow corn and beans in shifting cultivation practices (*milpa*) identical to those found in neighboring countries. On more commercial farms Belize grows, in addition to the traditional major crops, a diversity of beans, and Mennonite farmers export five kinds of beans to as far away as Saudi Arabia. The main root crops are cocoyam and cassava.

² The national poverty line is taken to be \$1,270 per person.

A significant amount of hot pepper is grown for processing into hot sauces for both the domestic and export markets. Tomatoes, onions, sweet peppers, and other vegetables are important for the domestic market.

As these brief comments suggest, Belizean agriculture tends to be bimodal, divided between a commercial, technologically advanced and often export-oriented agriculture, on the one hand, and a family agriculture on small farms with lower levels of technology and producing for subsistence and for the domestic market, on the other. However, not all small farms fall in the latter category. Many small-scale sugarcane, citrus, and hot pepper farmers, for example, produce harvests for export processing and in some instances have adopted more modern cultivation practices and quality control measures.

7.1.2 Agricultural Growth and Exports

Agricultural value added has remained approximately one-quarter of total gross domestic product (GDP) for close to 40 years (see Tables 7.1 and 7.2). By standards of developing economies, the agricultural sector—remarkably—kept pace with the rest of the economy, in terms of growth of real output levels, between 1970 and 2007 and for all subperiods during that time except the most recent one. It is almost a rule that agriculture grows more slowly than the rest of a country's economy, if nothing else because of Engel's law, which states that the income elasticity of demand for food is less than unity. Evidently agricultural exports in Belize have provided an outlet for production above and beyond the needs of the domestic market and thus have sustained growth and enabled the sector to expand more rapidly

TABLE 7.1. REAL SECTORAL GDP GROWTH RATES IN BELIZE, 1970–2007

(BZ\$ millions, at constant 1990 prices)

Year	GDP at factor cost	Agriculture ^a	Manufacturing	Agriculture GDP as percentage of total GDP
1970	312	75	46	24.0
1971	325	80	53	24.6
1972	349	83	58	23.8
1973	366	88	66	24.0
1974	394	96	77	24.4
1975	394	89	71	22.6
1976	389	86	66	22.1
1977	400	99	75	24.8
1978	429	104	82	24.2
1979	443	104	74	23.5
1980	461	105	85	22.8
1981	470	107	88	22.8
1982	465	112	87	24.1
1983	460	106	86	23.0
1984	470	108	79	23.0
1985	475	109	80	22.9
1986	490	104	82	21.2
1987	545	125	87	22.9
1988	580	125	87	21.6
1989	647	132	96	20.4
1990	710	147	106	20.7
1991	729	154	106	21.1
1992	777	172	114	22.1

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TABLE 7.1. REAL SECTORAL GDP GROWTH RATES IN BELIZE, 1970–2007 *(Continued)*

(BZ\$ millions, at constant 1990 prices)

Year	GDP at factor cost	Agriculture ^a	Manufacturing	Agriculture GDP as percentage of total GDP
1993	803	171	112	21.3
1994	792	182	124	23.0
1995	816	192	130	23.5
1996	838	205	131	24.5
1997	868	218	136	25.1
1998	808	223	n.a.	27.6
1999	975	247	140	25.3
2000	1,108	276	172	24.9
2001	1,158	275	171	23.7
2002	1,223	276	173	22.6
2003	1,352	384	172	28.4
2004	1,421	420	194	29.6
2005	1,480	433	196	29.3
2006	1,553	409	265	26.3
2007	1,472	341	288	23.2
Growth rates (%)				
1970–2007	4.28	4.18	5.08	
1980–2007	4.39	4.46	4.62	
1990–2007	4.38	5.07	6.06	
2000–2007	4.14	3.07	7.64	

Source: Authors' calculations using data from United Nations Statistics Division.*Note:* The UN series differs somewhat from those of the Statistical Institute of Belize but is used here because of its greater length. n.a. = not available.^a Including hunting, forestry, and fishing.**TABLE 7.2. SECTORAL GDP IN BELIZE, 1970–2007**

(BZ\$ millions, at current prices)

Year	GDP at factor cost	Agriculture ^a	Manufacturing	Agriculture GDP as a percentage of total GDP
1970	37	9	3	24.3
1971	45	11	4	24.4
1972	58	14	5	24.1
1973	101	24	10	23.8
1974	141	42	19	29.8
1975	171	53	23	31.0
1976	166	39	19	23.5
1977	193	49	27	25.4
1978	217	55	30	25.3
1979	250	59	33	23.6
1980	352	94	81	26.7
1981	355	89	69	25.1
1982	327	71	52	21.7
1983	345	72	61	20.9

Continued on next page

TABLE 7.2. SECTORAL GDP IN BELIZE, 1970–2007 (*Continued*)

(BZ\$ millions, at current prices)

Year	GDP at factor cost	Agriculture ^a	Manufacturing	Agriculture GDP as a percentage of total GDP
1984	384	77	73	20.1
1985	377	75	61	19.9
1986	405	82	61	20.2
1987	494	109	89	22.1
1988	552	118	98	21.4
1989	644	132	106	20.5
1990	710	147	106	20.7
1991	760	142	112	18.7
1992	887	160	109	18.0
1993	925	152	111	16.4
1994	1,025	183	131	17.9
1995	1,084	203	136	18.7
1996	1,129	196	128	17.4
1997	1,152	196	126	17.0
1998	1,208	197	129	16.3
1999	1,315	221	132	16.8
2000	1,490	244	158	16.4
2001	1,562	229	155	14.7
2002	1,675	237	154	14.1
2003	1,794	284	154	15.8
2004	1,916	300	165	15.7
2005	2,032	295	175	14.5
2006	2,214	294	258	13.3
2007	2,188	254	290	11.6

Source: Authors' calculations using data from United Nations Statistics Division.*Note:* The UN series differs somewhat from those of the Statistical Institute of Belize but is used here because of its greater length. n.a. = not available.^aIncluding hunting, forestry, and fishing.

than agricultural production for the domestic market alone would have.

Manufacturing has grown even more rapidly than primary agriculture, starting from a small base, and agro-processing constitutes the largest part of the manufacturing sector. In keeping with the similar growth rates of agriculture and of the entire economy, agriculture accounted for a roughly constant share of the total economy over 1970–2007, when measured in constant prices. However, a puzzle emerges when these same data are viewed in terms of *current* prices: the agricultural share of total GDP is then seen to have diminished by about half between 1970 and 2007, with almost all of the drop occurring after 1990 (see Table 7.2).

The answer to the apparent puzzle is that the intersectoral terms of trade turned against agriculture between the early 1990s and the mid-2000s (see Table 7.3). Part of this phenomenon may be explained by trends in world market prices for Belize's export crops, but those prices held more or less steady from 1970 until 1990 and turned sharply downward subsequently. The parity between agriculture GDP and total GDP shown in 1970 dropped to 0.5 by 2005. Part of the explanation for the adverse shift in agriculture's terms of trade (i.e., in the purchasing power of agricultural prices) is found in the policy arena.

The continuing importance of agriculture in Belize's goods exports in spite of the relative decline

TABLE 7.3. GDP DEFLATORS, AGRICULTURAL AND TOTAL, 1970-2007

Year	GDP deflators		
	Total	Agriculture	Agriculture/Total
1970	0.12	0.12	1.01
1971	0.14	0.14	0.99
1972	0.17	0.17	1.02
1973	0.28	0.27	0.99
1974	0.36	0.44	1.22
1975	0.43	0.60	1.37
1976	0.43	0.45	1.06
1977	0.48	0.49	1.03
1978	0.51	0.53	1.05
1979	0.56	0.57	1.01
1980	0.76	0.90	1.17
1981	0.76	0.83	1.10
1982	0.70	0.63	0.90
1983	0.75	0.68	0.91
1984	0.82	0.71	0.87
1985	0.79	0.69	0.87
1986	0.83	0.79	0.95
1987	0.91	0.87	0.96
1988	0.95	0.94	0.99
1989	1.00	1.00	1.00
1990	1.00	1.00	1.00
1991	1.04	0.92	0.88
1992	1.14	0.93	0.81
1993	1.15	0.89	0.77
1994	1.29	1.01	0.78
1995	1.33	1.06	0.80
1996	1.35	0.96	0.71
1997	1.33	0.90	0.68
1998	1.50	0.88	0.59
1999	1.35	0.89	0.66
2000	1.34	0.88	0.66
2001	1.35	0.83	0.62
2002	1.37	0.86	0.63
2003	1.33	0.74	0.56
2004	1.35	0.71	0.53
2005	1.37	0.68	0.50
2006	1.43	0.72	0.50
2007	1.49	0.74	0.50

Source: Authors' calculations based on Tables 7.1 and 7.2.

of agricultural prices is evident in the data in Table 7.4. For most of the last decade or so, primary agriculture has been responsible for almost 90 percent of the goods exports, and more if agro-

processing is taken into account, until petroleum exports began to emerge as a substantial factor in 2006. In the century's first decade, service exports, mainly tourism and transportation, showed a sharply rising trend until the setback that began in late 2008.

Table 7.5 shows some of the commodity detail behind Belize's agricultural exports. Sugar and bananas exports have held up well considering the loss of preferential access to the European market resulting from EU reforms to the Sugar Protocol (see Chapter 5). Between 2006 and 2010 the European price for Belizean sugar declined by 36 percent, and the preferential tariff on non-African, Caribbean, and Pacific banana imports to the European Union has been slashed by about three-quarters. Belize's marine exports have dropped substantially in recent years owing to a sharp reduction in farmed white shrimp exports. New initiatives in the areas of cobia (a farmed ocean fish) and tilapia (a farmed freshwater fish) have generated hopes of a rebound in marine exports, but cobia exporting in particular will not create much employment.

Belize's major export destinations, with corresponding shares of Belizean exports, are as follows: United States, 42 percent; United Kingdom, 20 percent; other European Union, 14 percent; Caribbean Community (CARICOM), 9 percent; Mexico and Central America, 7 percent. Exports to CARICOM (mainly to Jamaica and Trinidad & Tobago) and to Central America (mainly of petroleum) have increased rapidly in recent years from a small base. As discussed later in the chapter, there are obvious opportunities in Belize for important increases in exports to Mexico and Guatemala provided that sanitary monitoring systems can be put in place and trade accords can be reached with the governments of those countries.

Overall, the picture of Belize's agricultural exports is characterized by (1) a high degree of concentration in five groups of products (citrus products, bananas, sugar, marine products, and papayas) and (2) a lack of dynamism in these products, with the exception of papaya and possibly new types of farmed fish (Roseboom 2009). The citrus industry, which employs 10,000 people, is developing new processed products, so it is likely that

TABLE 7.4. BELIZEAN GOODS EXPORTS, 1995–2006

(US\$ millions, except as noted)

Year	Food	Agricultural raw materials	Fuels ^a	Manufacturing	Miscellaneous goods	Total goods exports	Agricultural export share (percent)
1995	124	2	0	17	n.a.	143	86.7
1996	122	2	0	20	10	154	79.2
1997	136	3	0	20	0	159	85.5
1998	123	3	0	21	0	146	84.2
1999	136	2	0	20	0	159	85.5
2000	162	3	0	21	0	186	87.1
2001	144	1	0	16	0	161	89.4
2002	140	2	0	16	0	158	88.6
2003	171	2	0	17	0	191	89.5
2004	180	2	0	23	0	205	87.8
2005	176	1	0	24	n.a.	202	87.1
2006	198	1	44	7	18	268	73.9

Source: Authors' calculations based on Statistical Appendix of IDB (2008).*Note:* n.a. = not available.^aThe first fuel exports did not occur until 2006, after the discovery of the country's petroleum reserves.**TABLE 7.5. MAJOR EXPORTS AND OTHER AGRICULTURAL AND FORESTRY EXPORTS, 2000–2008**

(BZ\$ millions)

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Marine products	70.44	66.42	70.36	110.13	107.57	98.12	86.02	42.18	44.28
Sugar	74.39	59.37	65.98	71.23	81.53	69.90	100.07	88.14	71.38
Orange concentrate	95.25	68.85	53.49	65.54	56.13	87.81	86.18	101.17	99.93
Grapefruit concentrate	13.41	15.70	13.95	12.52	24.49	19.34	22.81	16.27	12.67
Bananas	65.82	42.80	33.50	52.58	52.37	48.86	50.59	41.58	65.65
Papayas	11.45	10.26	15.51	16.75	22.82	26.86	31.01	26.07	22.44
Garments	39.58	31.01	30.44	30.91	36.81	34.56	36.59	18.79	0.32
Petroleum	—	—	—	—	—	—	88.54	142.62	230.93
Pepper sauce	0.67	0.40	0.41	0.61	1.12	1.32	1.61	1.69	1.63
Orange squash	19.79	4.65	3.09	1.48	1.49	0.54	0.11	0.09	0.58
Grapefruit squash	8.09	1.95	7.08	0.38	1.79	0.30	0.03	0.01	0.26
Oranges	1.89	2.03	3.64	2.41	2.76	3.46	2.88	2.68	1.69
Orange oil	0.24	0.39	0.81	0.57	1.96	2.79	2.81	2.21	3.01
Grapefruit oil	0.23	0.10	0.31	0.02	1.57	6.08	2.85	0.68	0.75
Red kidney beans	2.43	3.28	2.44	1.66	2.38	5.22	1.91	2.88	3.45
Black-eyed peas	3.00	2.87	2.46	3.41	2.38	3.71	3.37	3.60	4.05
Cocoa beans	—	—	0.03	0.09	0.07	0.07	—	0	0
Molasses	0.27	1.65	2.68	2.47	1.77	2.82	4.20	5.50	2.82
Veneer/plywood	0.01	0.12	0.42	0.29	0.07	2.30	1.86	0.58	0
Sawn wood	4.63	2.69	2.56	3.56	2.98	2.63	1.25	1.91	2.21

Source: Statistical Institute of Belize.

this subsector will continue to register increases in exports, although they may not be large. Clearly the agricultural sector needs new export success stories in the mold of papayas, or a larger array of more modest gainers. Other needed developments in the agro-export sector are (1) products, technologies of production, and marketing arrangements that can bring small- and medium-scale producers into the circle of competitiveness and generate more income per acre for them; (2) greater development of food processing and other additions to value; and (3) products whose export success does not depend on preferential trade agreements.

In this regard, the Belize Trade and Investment Service's (Beltraide's) National Export Strategy notes that a significant percentage of Belize's exports are carried out under preferential agreements; for example, 50.3 percent of Belize's exports to the United States, including fruit juices, sugar, and melons. This combination of exports of primary, mainly agricultural, products and trade under preferential agreements has served as a major disincentive to export diversification in Belize, and the country's exports therefore remain relegated, for the most part, to the lower end of global value chains for different export sectors (i.e., fish and shrimp, bananas, papayas, and beans are all exported in their primary form) (NES Belize Design Core Team and Beltraide 2006, 23).³

7.1.3 External Cooperation in Belizean Agriculture

Belizean agriculture receives support from the European Union and some other external sources, and in fact that support represents the largest share of public capital spending in the sector. Heading the list is the European Union's commitment of 48 million euros for the Accompanying Measures for Sugar project, which is aimed at both improving productivity in Belize's sugar sector and diversifying part of the country's sugar lands to production of other crops. In a similar vein, the Banana Support Project of the European Union and United Nations Development Programme has committed 27.7 million euros to Belize. The Belize Rural Development Pro-

gramme, also supported by the European Union, has a budget of 7.2 million euros. It carries out diverse investments and training on small farms. The Agriculture Enterprise Development Project, another undertaking supported by the European Union, has a budget of 1.3 million euros, and the Food and Agriculture Organization is supporting a number of smaller undertakings. The Caribbean Development Bank has supported Belize's Social Investment Fund, which has activities in rural areas. IDB support was instrumental in the creation of the Belize Agricultural Health Authority. But after the termination of the Accompanying Measures for Sugar (in 2013) and the Banana Support Project (in 2012), the prospect is for external support to the sector to fall considerably, and consequently for capital spending in the sector to decline, unless the government increases its fiscal allocations to the sector.

7.2 The Macroeconomic and Sector Policy Framework

In all countries macroeconomic and sector policies have a considerable influence on agricultural development, principally through their effects on incentives for resource allocation within the sector and between sectors. They also can directly affect real incomes of rural households through effects on intersectoral relative prices. Five policy areas in Belize have a particularly important impact on the agriculture sector: financial, exchange rate, trade, pricing, and fiscal policy. In contrast to the usual case, in Belize all five policies work in an adverse direction from the viewpoint of economic incentives for agriculture—although they were obviously not designed with that aim—offsetting to a degree Belize's natural advantages for agriculture.

7.2.1 Financial Policy

As discussed in Chapter 1, the binding constraint on growth in Belize is the high cost of finance. Interest rates are high in Belize in comparison with those in most countries in Central America, which puts its agricultural sector at a disadvantage compared to those of its neighbors, particu-

³ This is not the case for citrus exports, most of which are in processed form, or for sugar, but the general point is valid.

larly in regard to livestock producers, producers of perennial crops, entrepreneurs in food processing, and farmers who wish to install irrigation systems, covered structures, and other types of infrastructure. Although public sector programs and international programs can provide opportunities and some funding for Belizean farmers, in most cases they will need to respond with their own investments, as described subsequently for concrete cases, but with borrowing rates running from 15 percent to 20 percent or more, including fees, it is not a profitable proposition to use bank finance for investment purposes in agriculture.

As noted in a recent IFAD study, Belize's private sector commercial banks (even those with an excess of liquidity) are not interested in the agricultural sector or in very costly small rural clients. The interest rate for production loans varies between 19 and 21 percent. The country's commercial banks are concentrated in cities and periurban areas and have no interest in expanding towards rural sectors. They allocated an average of only 9 percent of the loans they made (approximately US\$50 million per annum) to the agricultural sector between 2004 and 2008. About 50 percent of total agricultural credit has been allocated to the banana sector (three large plantations), 25 percent to large citrus growers, 20 percent to big sugarcane growers, and the remaining 5 percent to agricultural firms in the poultry sector (IFAD 2008, 8).

Credit unions and, to a lesser extent, growers' associations represent a more rapidly evolving source of finance for agriculture, although the amounts lent are still relatively small. According to the IFAD study, a number of the country's credit unions have demonstrated the capacity to increase their lending to agriculture, including Toledo Teachers, St. John's, St. Martin's, La Inmaculada, Blue Creek, and St. Francis Xavier. In the longer run, reinforcing institutions like these will ensure a sustainable mechanism for agricultural finance.

Another critical need is for trade finance (export credit). This kind of finance is less risky than production finance, because importers have signed contracts to buy the shipments whose export is financed by the loan obtained, and it is also short term, so it would appear to be attractive to banks,

but to date Belize's banks have elected not to extend trade finance.

The possibility of providing a kind of disaster insurance is being investigated. The risk mitigation provided by a disaster insurance program could help encourage further private lending in agriculture, but as farmers are unlikely to be able to pay market premiums for such insurance, the rates might have to be subsidized.

7.2.2 Exchange Rate Policy

The exchange rate for the Belize dollar has been fixed with respect to the U.S. dollar for more than 30 years, thereby providing an anchor for inflation and stability. However, the World Economic Forum (cited in NES Belize Design Core Team and Beltraide 2006, 32) concluded, in its 2005 review of Belize's international competitiveness, that there are some indications that the exchange rate is overvalued. Similarly, in 2005, the International Monetary Fund (cited in NES Belize Design Core Team and Beltraide 2006, 31) found indications of a loss of Belizean competitiveness vis-à-vis important trading partners or competitors such as Brazil, Colombia, Indonesia, Thailand, and the Philippines.

An appreciated real exchange rate causes agricultural prices to decline in relation to other prices in an economy, especially service sector prices, because agriculture is typically the most tradable sector in the economy, and hence when costs in the sector increase, it cannot raise prices in light of competition from imports and in export markets. Therefore it is possible that the strong exchange rate is one of the causes of the previously noted decline in real agricultural prices in Belize since 1990.

7.2.3 Trade Policy

Many exports and imports in Belize require licenses. In the case of a food export, the Ministry of Agriculture and Fisheries must determine that the domestic market demand for the good to be exported is satisfied before it will issue the required license. This procedure, which differs from that followed in the vast majority of Latin American countries, has a clearly negative effect on exports, because it constrains the ability

of exporters of some products to enter into contracts with buyers in other countries, out of uncertainty as to whether they will be permitted to fulfill those contracts. In addition, obliging producers or exporters to forgo exports in order to sell on the domestic market may reduce the price they obtain, further undercutting incentives to produce for export. For the most efficient allocation of productive resources, the domestic market price for a product should equal the export price (adjusting for differential transport costs and any quality differences).

Clearly the need to obtain export licenses is not a concern for exporters of products like sugar, bananas, and orange concentrate, but it can inhibit exports of products like grains, beans, mutton, and vegetables as new opportunities emerge in those areas. Overall, this export control may be another factor that helps explain the decline in real agricultural prices in Belize since 1990.

On the side of imports, the list of products for which licenses are required is quite long.⁴ On some of these products and others a “revenue replacement duty” is levied in addition to the tariff imposed by CARICOM’s common external tariff regime, and in some cases an environmental duty is also imposed. Belize’s import-licensing system creates additional levels of protection at the border beyond that provided by the common external tariff that are unpredictable and also provide incentives for possible corruption. Shipments of perishables have been known to deteriorate in the heat on the Mexican border for days while trivial and unanticipated paperwork requirements for an import license were being fulfilled.

It is not obvious that the additional protection provided by these measures is needed, unless the strong exchange rate is perceived as affording an advantage to imported products. The classic study of Jorge García García (1981) for Colombia clear-

ly demonstrated that greater border protection reduces the competitiveness of a country’s exports. Since most of Belize’s exports are agricultural, the import-licensing regime is also contrary to the country’s interests, even though it may protect producers against some of the international competition. Worldwide the trend has been to eliminate export- and import-licensing regimes because of the economic inefficiencies they generate. When more protection is sought, the transparent and economically most efficient option is to increase tariffs. Though Belize’s tariffs are substantial, in most cases they remain below the maxima (bindings) provided by the common external tariff, so there would be scope for increases if desired.

Finally, it must be observed that the trade-licensing system contravenes Belize’s World Trade Organization (WTO) commitments. As noted in a CARICOM review of Belizean agricultural policies, as a signatory to the WTO Agreement on Agriculture, Belize is required to dismantle its system of licenses with respect to both imports and exports as well as gradually to reduce tariffs. Even with due recognition of the current position to protect domestic producers from being crowded out and the importance of doing so, in the new trade policy environment (WTO, Free Trade Area of the Americas, CARICOM Single Market and Economy, etc.), a signatory cannot indefinitely pursue nontariff barrier policies that restrict trade. Thus, the more quickly Belize’s market is opened up, the better prepared will be its entrepreneurial class to compete in the market (Singh, Seepersad, and Rankine 2006).

7.2.4 Pricing Policy

Price controls are in effect in Belize for sugar, rice, flour, bread, red kidney beans, and a few nonfood products, including beer. As the experience of other countries demonstrates, price controls almost always operate in the direction of favoring

⁴ The control exerted by such licensing is quite pervasive; an abbreviated list of items requiring import licenses includes the following: rice, beans, eggs, flour, fruits, potatoes, vegetables (including tomatoes, cauliflower, cabbage, lettuce, carrots, cucumbers, shelled or unshelled string beans, eggplant, sweet peppers, and zucchini), manioc (cassava), Jerusalem artichokes, sweet potatoes and similar roots and tubers, coconuts, bananas, plantains, pineapples, avocados, guava, mangos, mangosteens, watermelons, cantaloupes, muskmelons, other melons, papayas, sapodillas, golden apples, passion fruit, soursop, breadfruit, carambolas (star fruit), christophene (chayote), pineapples, lumber and lumber products, furniture, beef and beef products, pork and pork products, chicken sausages, poultry excluding baby chicks, sugar and molasses, jams, jellies, pepper sauce, flour, dry pasta, peanuts, aerated (carbonated) beverages, citrus and beverages containing citrus, beer, corn, milk, animal feed, brooms, toilet paper, fuels, butane, bleach, soaps, matches, t-shirts, and fiberglass outboard motorboats.

consumers and penalizing producers. An alternative to price controls would be a more open import regime so that traders could respond when shortages occur, thus damping down price increases. The Belize Marketing and Development Corporation (BMDC), under pressure from various local producer groups, currently imports some basic food products, ostensibly to guard against shortages, but generally the private sector has a greater capacity to bring in imports in a timely fashion; however, the BMDC's actions in the marketplace discourage the development of the needed private trading capacity. Furthermore, price controls are yet another instrument that probably has contributed to some extent to the observed decline in real agricultural prices in the country.

7.2.5 Fiscal Policy

Belize's unintended policy biases against agriculture could be offset by greater public investment in the sector, but on the expenditure side, the country's fiscal policy assigns a very low priority to agriculture. Although the sector contains most of the country's poverty (the incidence of which is greater in rural areas) and at least a fifth of its labor force and generates the bulk of the country's goods exports, it receives only a little over 1 percent of Belize's total fiscal expenditures. In the critical area of capital expenditures from the budget, agriculture receives about 2 percent of public outlays (1.80 percent according to the 2007/2008 projected outturn). Funding from development partners partly compensates for this lack of fiscal expenditure, but the magnitude of that support may be transitory, and total public capital spending in the sector still is quite low in relation to its importance in the economy.

These are straitened times for the government budget in Belize, as they are everywhere in the world, but as conditions permit implementation of a longer-term perspective, it would be worthwhile for the country to reconsider the priority assigned to agriculture. The stock of infrastructure in the sector is a bottleneck to its growth, and the low level of fiscal support distorts operations of entities such as the Belize Agricultural Health Authority (see Section 7.4).

7.3 Products and Markets

Overall, Beltraide's National Export Strategy finds a low level of competitiveness in Belize and encourages greater product diversification (NES Belize Design Core Team and BELTRAIDE 2006, 33). The European Union's Belize Marketing Study (SCANAGRI Denmark Consortium 2007, 28–31) looks into the issues surrounding a few promising products. However, as markets determine the products that can be competitive, it is difficult to specify them in advance in a strategy, although some possibilities that are worth trying out at the field level may be mentioned. Nevertheless, interest has arisen in Belize in a number of products that are new or have so far been produced in relatively small quantities. These products hold out the promise of greater diversification of the country's export basket and of raising farm incomes, in some cases significantly.

Trials are underway on *pitahaya*, a fruit that has export potential, especially in the European market. It is used as an ingredient for flavoring and coloring prepared foods and in fresh form is in demand as a decorative item. Guava (*guayaba*) is another fruit that has attracted attention and commentary; its main use would be for processing into paste for export, though there is demand for it in fresh form as well. Both *pitahaya* and fresh guava would require sanitary control and monitoring regimes in order to be exported. *Pitahaya* is plagued by a fly—different than the Mediterranean fruit fly, which is already being controlled for the papaya subsector—so new sanitary measures would be required for it.

Citrus, bananas, papayas, and guava illustrate Belize's apparent comparative advantage in tropical tree crops. Another tree crop that has had commercial success and is being exported on a small scale is cashew.⁵ It grows well in the less humid parts of the country, from Cayo District northward, and the world demand is substantial and expanding. In addition to being grown on plantations, cashews can be collected from scattered trees on smaller farms, but the latter operation requires investment in small-scale structures for controlling humidity. The seeds (nuts) can be kept

⁵ Cashew is mentioned as a crop with potential in Beltraide's National Export Strategy (NES Belize Design Core Team and BELTRAIDE 2006, 42).

under low-humidity conditions for many months in order to spread out the processing over a longer period of time. The juice of cashew's false fruit is consumed locally in Central America, but its potential for export is limited by its short shelf life.

Belize's citrus subsector has the potential to increase its exports of orange juice, and the Belize Citrus Growers Association is working on new processing methods for that purpose. Contraband export of oranges to Guatemala is fairly extensive, but sanitary and phytosanitary issues prevent the formalization of that trade. Likewise there would be a significant market for limes in Mexico, but again sanitary and phytosanitary issues pose a barrier, especially because many Belizean citrus plantations are infested with the tristeza virus, which can be transmitted via fruits from infected trees. In light of this problem, hot water treatment or waxing of the citrus would be a requirement for export to Mexico. Cuba (which has a management program for tristeza in place and does not protect against entry of citrus from areas with tristeza) is interested in limes from Belize, but transport is the obstacle.

Beans grown in Belize—including black-eyed peas, light red kidney beans, black beans, small red beans, and cranberry beans—are currently being exported to the CARICOM countries, the Middle East, North America, Australia, Europe, and South and Central America, in spite of port limitations that necessitate having bean shipments go out on smaller boats to Jamaica initially, where they are transferred to larger vessels. Interest has been expressed in increasing bean exports to other countries in Central America substantially, but market conditions make this a remote possibility. Although Central America imports significant amounts of beans in some years, its import requirements depend heavily on the weather that affects bean harvests in Central American countries, and in other years imports are minimal. Hence Belizean growers cannot predict the magnitude of that market with any confidence in advance of planting decisions, making it unlikely that Central America will increase in importance as a destination for Belizean beans. However, prospects are encouraging for increasing those exports to other parts of the world.

The farmers and managers of the BEL-CAR cooperative have largely generated the country's export success in beans so far. Some obstacles will

have to be overcome to replicate their experience with other farmers. The Belize Marketing Study comments that "key limiting factors on the production side which have been identified are the web blight disease, lack of adequate storage space and inadequate drying facilities. Availability of suitable land for farmers to expand production is becoming a constraint as well. Limited access to feeder roads has negative impact on cost structure and therefore it is difficult to remain competitive. . . . [There is an] absence of local standards for beans in Belize" (SCANAGRI Denmark Consortium 2007, 29). It may be added that the bean varieties grown in Belize could be improved with research, but Belize's Central Farm is not yet providing assistance in this.

Perhaps surprisingly, corn has potential in Belize, especially for export to elsewhere in Central America. Although U.S. yellow corn is available much more cheaply, its quality also is lower, since it is destined for feed concentrates and what is available tends to be older grain that has been stored for a while. For human consumption, especially in fresh form, Belize appears to be able to produce corn at an acceptable price for nearby markets and in fact has recently produced a surplus, but marketing arrangements and trade agreements are not yet in place that would allow it to be exported.

Corn also lends itself to processing. The Caribbean consumes a great deal of cracked corn, and a feasibility study on the equipment required to process Belizean corn for this market would be worthwhile, as would such a study in regard to corn meal.

Another tree crop, plantain, has not been exported in recent years, but potential markets exist for plantain chips in Mexico (particularly Chetumal), the United States, and Jamaica, and in the Miami area for fresh plantains (SCANAGRI Denmark Consortium 2007, 29). For these markets to be exploited, obstacles involving lack of consistent quantity and quality need to be overcome. Additionally, growers are not linked with processors and marketing agents, so the supply chain needs to be developed.

Belize produces honey of high quality, and both Europe and the United States offer strong markets

for good organic honey. Inconsistency of supply, in large part from the lack of producer organization, is the chief source of the country's problems in regard to exporting honey. Many hives are widely scattered, and theft of honeycombs is a major issue. Realizing the market potential for honey would require work in organizing both producers and communities and also in developing appropriate labeling and obtaining organic certification. Some observers feel the introduction of the more aggressive Africanized bees via Brazil also has affected the country's honey supply, and this factor would have to be evaluated.

Sauces, jams, and jellies also hold promise for future increases in exports. Currently Belize exports a significant amount of hot sauces and other sauces, with Japan the main market, although the U.S. market has been penetrated as well. For these products, forging links with long-term buyers, instituting quality control measures, and introducing good labeling are some of the keys to success. Lack of compliance with regulations regarding labels has been an important reason for rejection of Belizean exports upon arrival in the United States.

Both the National Export Strategy and the Belize Marketing Study point to the potential in yet another tree crop, cacao, especially in organic form. Belizean organic cacao is of high quality and also is fair trade certified. It is grown mostly by small farmers in Toledo District. All organic cacao exports currently go to the United Kingdom, through Green & Black's, and some organic cacao is processed locally. The main issues to be resolved in regard to cacao exports are low productivity on farms and inadequate crop management practices for control of *Monilia* disease. Proposals have been made to introduce higher-yielding cacao varieties, but their flavor and aroma characteristics may differ from those of the existing variety, potentially making them less viable commercially.

In the livestock subsector, both beef and mutton have considerable potential for export expansion provided that (1) genetic herd improvement programs can be implemented on a wider scale, (2) surveillance programs for brucellosis and tuberculosis can be put in place with the aim of eventually obtaining certification that Belize is free of those diseases, (3) a capacity for testing

for residues (heavy nickel) and antibiotics in these meat products can be developed, (4) livestock farmers can gain access to credit on more reasonable terms for pasture improvement, fencing, and other investments, and (5) adequate programs for livestock traceability can be established. Traceability is in place for a limited number of cattle ranchers who sell their animals to the only Hazard Analysis and Critical Control Points–certified slaughterhouse in the country, but it needs to be extended to other farmers who wish to produce for export, and it needs to be established for sheep. Cattle crosses between the native Brahman breed and Hereford and Brown Swiss have proven to be very productive (in terms of increasing yields) in Belize. The Ministry of Agriculture and Fisheries has brought in about a dozen breeding bulls, but about 15 times that number would be needed to ensure a breeding stock that could satisfy the national demand. Equally, crossing Blackbelly sheep with the Darfur breed has provided good results in regard to yields, adaptability to local conditions, and consumer response, but so far that type of crossing has been undertaken only on a private farm on a limited scale.

Live animals are exported extensively to Guatemala, informally, and some of the exported animals go on immediately to Mexico. However, a formal trade accord on livestock with Guatemala is still pending. If such an accord were in place, exports of cattle in simple processed form (carcasses) could be made. Cattle also cross the border into Mexico informally. An accord with Mexico would open the door to livestock exports of both beef and mutton. In addition to the certifications regarding brucellosis and tuberculosis mentioned above, another sanitary requirement for the Mexican market would be for Belize to declare itself free of mad cow disease, which would require implementation of a monitoring system to certify that the disease does not exist in the country. Mexico has a potentially large mutton market, from Belize's perspective. Domestic demand for mutton in Belize is also currently outpacing supply increases, and this is a product in which small farmers can readily participate.

One of the potential advantages of Belizean beef in the marketplace is that it is grass fed, which both makes it cheaper to produce than grain-fed beef and increases its marketability (through its

suitability for the lucrative market for grass-fed beef). Livestock producers express concern about the high cost of supplementary feeds in the dry season. However, at least one successful producer is basing his feed mixes on molasses, which is readily available from Belize's sugar industry and is very cheap, reducing dependence on expensive imported feeds. Stronger extension efforts in the area of research and development in supplemental feed production and feeding strategies and stronger veterinary services are needed for small- and medium-scale livestock producers, who are generally not as familiar with these approaches that can make them more competitive, and it would be worthwhile to strengthen the Belize Livestock Producers Association for that purpose. Following new trends in extension services, the association could select and hire its own extension agents, and the public treasury could support the association on the cost side. With appropriate training and technical support, the association might also acquire the capability to extend credit lines to producers as a financial intermediary.

In the area of fisheries, new investments in ocean farming of cobia hold promise for creating a significant new export industry, albeit one that is not intensive in regard to employment. Greater amounts of employment are being created in the emerging tilapia industry, which also should be able to add significantly to the country's export earnings. One urgent need of tilapia producers, which are often small in scale, is a better cold chain from ponds to processing plants. Another is a system of sanitary monitoring and controls for tilapia, above all to ensure that the fish arrive at the processing plant in sanitary condition.

More than two dozen species of wood are currently harvested from Belize's forests. Pine is the main species in volume, and the three main hardwoods are mahogany, Santa Maria, and *yemerí*. Wood products are exported from Belize only on a very small scale, however. Currently Belize exports only sawn lumber, but the country's substantial forest endowment and the potential for cultivating fast-growing hardwood species such as Spanish cedar would appear to indicate a potential for more value added in the wood products industry. Beltraide (2004, 1) has noted that "growth in demand for wood products has been substantial over the past 30 years. As the number of countries that import

and export forest products grow, forestry is becoming increasingly global. A large contributor to this growth is in the secondary processed products, such as moldings, doors, furniture, etc., and those of non-wood forest products, such as rattan."

Timber management in Belize is largely sustainable, but controls in this regard would have to be reinforced to ensure rigorous sustainability and ensure the possibility of sustainability certification, and planting of suitable species, such as the aforementioned Spanish cedar, on a reasonable scale could be one part of the country's forest products strategy. Developing the potential for more value added in the forest products industry and fostering export earnings from wood products would require sustained technical assistance, particularly in regard to cutting the wood and finishing the products. Design is important as well. For these purposes, an alliance could be forged with a North American company. A group of Nicaraguan furniture makers entered into such an alliance with the Berkeley Mills in California, for the purpose of receiving technical assistance with designs and with production practices.

In sum, there exist real possibilities for diversifying exports in Belize. What is needed is a concerted export development program. Some of the cross-cutting obstacles that would have to be overcome are described in the following sections.

7.4 Sanitary and Phytosanitary System

Belize's sanitary and phytosanitary system has a sound technical base in the Belize Agricultural Health Authority (BAHA), which was established pursuant to legislation approved in 2000. The IDB provided key support for BAHA's establishment, and the regional sanitary and phytosanitary entity Regional Organization for Plant and Animal Health (OIRSA) has provided continuing support to its operations.

BAHA operates the country's quarantine facilities. It has modern capabilities in the Central Investigation Laboratory, although it does not yet have International Organization for Standardization (ISO) 17025 certification (the main international standard for testing and certification laboratories),

and it monitors food safety issues as well as sanitary and phytosanitary concerns. Its staff makes field visits to agro-processors and producers and monitors their practices closely. BAHA also carries out pest risk analyses and issues export certifications. It has special surveillance programs for the Mediterranean fruit fly and the pink hibiscus mealybug. In the area of animal health, BAHA provides veterinary diagnostic services and conducts epidemiological risk analyses. It monitors rabies cases and levels in the country and provides vaccinations against the disease.

In regard to food safety, BAHA, among other things, verifies the application of Hazard Analysis and Critical Control Points (HACCP) procedures and the associated Good Agricultural Practices, Good Manufacturing Practices, and Standard Sanitary Operating Procedures. It has a nascent capability for investigating outbreaks of food-borne diseases. Its HACCP certification and monitoring was instrumental in facilitating fish products exports to the European Union and United States, but it needs to develop a capacity in aquatic health analysis to support the expansion of effective risk management for a competitive aquaculture sector.

BAHA faces a number of issues, largely falling into three main categories: (1) its physical and human capacity needs to be enhanced in some critical areas, (2) it receives inadequate funding from the government and hence is overly dependent on the fees it charges for its services, and (3) its operating procedures need to be reviewed and revised from the viewpoint of good governance.

7.4.1 Increasing Physical and Human Capacity

BAHA has well-trained staff, but it needs more of them in order to be able to carry out the kinds of livestock health surveillance that are prerequisites for exporting meat, and it needs more veterinarians. The existing preslaughter inspections of livestock in informal slaughterhouses (“slaughtering under the mango tree”) are insufficient from the standpoint of hygiene and health control. BAHA also needs more staff trained in plant health, as the specialists currently on staff have to work in too many different areas to enable BAHA to offer effective coverage of veterinary control services.

The entire staff needs training in statistical sampling procedures, since they are the basis for the kinds of monitoring and surveillance acceptable under World Organisation for Animal Health (OIE) standards, and they are also required in quarantine work. The existing capacity in aquatic health analyses would benefit from a sanitary and phytosanitary project in aquaculture.

As mentioned, a traceability system needs to be implemented in Belize, starting with livestock. The basis for such a system is a unique identification number for each farm in the country, an alphanumeric identifier that includes symbols for districts. This would have to be provided by the Registrar of Lands or the Ministry of Agriculture and Fisheries, as the point of departure for traceability systems, and then BAHA would need staff trained to oversee the implementation. Such an identification number would also assist efforts to collate the beneficiaries of government and international programs.

BAHA’s most urgent priority in regard to physical capital is to relocate the Central Investigation Laboratory from Belize City, where it is in a vulnerable area and has suffered hurricane damage, to Belmopan. Other needs include more vehicles for surveillance, monitoring and traceability work; an information system that includes computers with geographic information system capabilities, an X-ray machine (which could be shared with other agencies) and incinerators with high capacity, a holding facility for live animals that includes a sanitary dip, quarantine facilities for pet birds, a cold facility in quarantine stations, and an expanded building on the Central Farm premises (BAHA currently makes outlays for rental of facilities for meetings and conferences).

7.4.2 Addressing Inadequate Government Support

Services in support of an agricultural sanitary system are partly public goods, and therefore the current level of government budget support to BAHA (only BZ\$1.2 million in fiscal 2008–2009) is far too low. The low level of government support forces BAHA to rely excessively on fees, which are therefore high and charged for too many activities. These fees have become a burden on producers, especially but not exclusively

those who wish to export. To increase funding for BAHA, a 2007 study by the Animal and Plant Health Inspection Service of the U.S Department of Agriculture (USDA-APHIS) recommends new or increased fees for other activities, such as charges on tourist arrivals and for the Protected Areas Conservation Trust (PACT).

7.4.3 Resolving Governance Issues

BAHA's governance issues arise in part from its excessive dependence on fees. In addition, BAHA staff members tend to visit processing facilities more often and for longer durations than required under international inspections standards. In the field they insist on payment on site when services are delivered. These modes of operation provide obvious incentives for corruption, and they increase production and processing costs in an environment in which Belize is struggling to be competitive. In the latter regard, the excessive burden they impose has made them an obstacle for progressive farmers. Hence an overall review of BAHA's operations and governance would be in order, as part of an integrated program to enhance its capacity. For that purpose, comparisons can be made with how sanitary and phytosanitary entities in other countries operate.

7.5 Infrastructure Issues

A review of infrastructure for Belize's agriculture sector reveals a number of investment priorities. First and foremost, it is estimated that only about 2 percent of Belize's cultivated land is irrigated. Even though annual precipitation is moderate to heavy in Belize, from 40 inches in the north to 200 inches in the far south, irrigation is important to ensure adequacy of the water supply for crops in the dry season and during dry spells in the rainy season. It is a vital factor both for increasing yields and for improving product quality. So far the little irrigation that is available is mostly directed to traditional plantation crops such as sugarcane and citrus.

Recognizing this gap, the Ministry of Agriculture and Fisheries funded 35 small-scale irrigation projects in fiscal 2007–2008, mostly through the Belize Rural Development Programme. However, these projects represent only the beginning of

making investment a priority for the agriculture sector.

One of the first steps toward a priority investment plan would be the formulation of a medium-term irrigation strategy and training ministry staff in irrigation management. The experiences of the Belize Rural Development Programme would provide useful inputs into such a strategy. In the southern part of the country, drainage is needed as much as or more than irrigation, but adequate drainage systems should in any case be a part of all irrigation projects. In the north, wells are generally feasible and require depths of as little as 10–20 meters to ensure a year-round supply of water. However, attention should be paid to the pumping costs associated with wells, given the country's high electricity prices. Also, although groundwater may be abundant for the country as a whole, that is not necessarily the case in each underground basin. As no national groundwater survey exists, at present well-digging permits are being issued with no idea of the extent of aquifer resources available in the area where the well is to be located.

River intakes and catchment dams are also feasible in many parts of the country, and in some particular cases short interbasin water transfers may reasonably be considered. Above all, a strategy for organization of producers into water users associations and training them in irrigation management will be important. Legislation will be required to define water use rights and the ownership of irrigation systems, along with responsibilities for system maintenance and, when necessary, rehabilitation. Rules must be in place to define where the state's responsibility for gravity-fed systems ends and that of the users begins, that is, should the state deliver water to the head gates of the main canals and leave to users the water distribution in secondary and tertiary canals, or should some other system be devised? Clarity will be needed on this topic and others related to it.

Along with irrigation, greenhouses or simple covered structures are effective ways to increase yields. Typically covered structures increase yields several-fold; trials in hot pepper fields have shown that yields increase to 2.5 times their previous levels. Panama has established, under an IDB project, a mechanism (ProCompetitividad) through which

farmers and entrepreneurs may apply for nonreimbursable support under a number of headings, including adopting new technologies, exploring markets, improving enterprise management, and obtaining certifications. The applicant must put up a share of the costs, but the program provides most of the funding. Groupings of farmers also may apply for support from the program. A similar kind of mechanism might be worth exploring in regard to financing both greenhouses and small irrigation systems in Belize.

Belize is well endowed with highways that are in good condition. However, many farm access roads need upgrading, and some are not usable year round. Progress in this regard is being made in banana-growing areas under the Banana Support Program, but access roads need to be upgraded throughout Belize, and preferably paved when possible. Without reliable access roads, products like milk and perishable fruit and vegetables cannot successfully be produced for export, as the unreliability of access makes it difficult to preserve the cold chain for dairy products and increases spoilage and postharvest damage in the case of perishable horticulture. Furthermore, roads in poor condition raise the costs of marketing all products.

Adequate crop storage and drying facilities are generally in short supply in Belize, more so in the north and the south than in the center of the country. Such facilities help ensure a higher-quality product and reduce postharvest losses. Consideration should be given to relatively inexpensive hermetic storage facilities for grains and beans that have been used to good effect in some countries in Africa and elsewhere, substantially reducing postharvest losses due to insects.

Cold chain facilities are needed for aquaculture products and fruit and vegetables, including cold storage at the Philip Goldson International Airport outside Belize City. The latter can be simple, such as one or more reefer containers connected to power sources, but it is important to have it. Facilities of this kind can be made available through a public-private partnership or provided on a fee basis by a private enterprise or organization of producers.

Development of a new deepwater port could be important for the promotion of Belizean agri-

cultural exports. The main seaport at Belize City charges very high fees for handling cargo, up to three times the fees of the most efficient ports in Central America. Also, it has only one crane and no bulk loading facility. The new port being explored in the vicinity of Dangriga, mainly by private sector groups, appears feasible and would be considerably less expensive for users than the port in Belize City. Potentially it would also have the bulk loading capacity that the Belize City facility lacks.

7.6 Issues Concerning Institutional Capital

Apart from the question of reviewing the operating modalities of BAHA, the main institutional issues in the sector concern the cooperatives and the marketing board (Belize Marketing and Development Corporation). Cooperatives can play a useful role in organizing farmers for the purpose of developing alliances with other segments of the agriculture value chain, and in some countries, such as Denmark and the United States, they have a distinguished history, especially for milk marketing and processing. The top brand of ultra-high-temperature milk for all of Central America is produced by a cooperative in Costa Rica. However, less than 20 percent of the agricultural cooperatives in Belize are functioning entities, a level typical of most developing countries. Because the country's cooperatives are evidently not playing the role typically expected of them, legislation governing cooperatives is currently undergoing review and revision.

In regard to the BMDC, the Belize Marketing Study (SCANAGRI Denmark Consortium 2007) observed that significant human and financial capacity constraints prevent the institution from carrying out its mandate. The study cites lack of focus and the absence of a proper management system (including a monitoring and evaluation system), as well as a need to enhance management skills among the institution's top management.

Of the issues the study cited, the institution's lack of focus is perhaps the greatest concern, because the other constraints can be ameliorated through funding and training. The institution's objectives are unclear: does it aim to make food more affordable for consumers, or does it aim to offer higher prices to farmers for their harvests? The two aims

are incompatible unless the institution receives a large fiscal subsidy, and that does not appear to be the case. Throughout the region, agricultural marketing boards like the BMDC have been found to be inefficient in their operations and to distort market incentives and have therefore been closed.

The institution's interventions to purchase food imports are equally questionable. If the government were to send clear, unambiguous signals to the private sector that it would not intervene in domestic or international commerce in food products, then the private sector would respond to temporary food shortages through imports. Often when parastatals try to play that role, as a result of bureaucratic inefficiency they end up receiving food imports after the shortages have passed, exacerbating the downturn in farm gate prices that always occurs at harvest time. A more appropriate role for the institution, as discussed later in the chapter, might be to manage a fund to contract with private marketing experts who can advise farmers' groups and agro-processors and put them into direct contact with markets. Equally appropriately, it could construct infrastructure such as the necessary facilities for cold chains mentioned previously and lease them on a long-term basis to the private sector.

7.7 Agricultural Services

7.7.1 Research and Extension

In light of concerns raised in regard to Belize's agricultural sector and to enable it to reach its identified potential in any substantial degree, applied research has to have a priority, particularly varietal adaptation trials for nontraditional crops. Plant-breeding efforts may be needed in regard to beans and rice, although it would be important to adapt results from elsewhere for those crops as well. For fruits and vegetables, strengthened research in pest control is urgently needed, in particular for citrus crops, hot peppers, and tomatoes. Researchers should also address questions of cultivation under irrigation and covered structures and postharvest management issues.

The Caribbean Agricultural Research and Development Institute continues to have a crucial role in agricultural research in Belize, and by the

same token, the national research capacity should be strengthened. Collaboration with the private sector will be the key to successful research, as budget constraints limit severely the scope of research issues that the public sector can address, and consideration should be given to a competitive mechanism for allocating research funds on a project-by-project basis. Under such a mechanism, private enterprises, farmers' associations, and the national research service all would apply for funding on an equal footing. The private sector's success in research for papaya (varietal trials) and citrus (including development of new formulas for animal feed based on citrus by-products) provides ample evidence of private entities' ability to utilize public research resources effectively.

Extension services in Belize have been provided through projects, by agro-processors and exporters, and by the Ministry of Agriculture and Fisheries. The commitment of the country's extension agents is impressive, but funding shortages weaken their ability to get into the field as often as farmers need them. In light of recent international trends, it would be worthwhile to explore a model of more systematic extension offered through multiple providers. In some countries, for example, farmers' associations select and hire extension agents, and the cost is partially or fully reimbursed from the government budget. For export crops highly specialized technical assistance is required, and under the Panamanian program ProCompetitividad, mentioned in Section 7.5, a special fund defrays part of the costs to farmers' groups and entrepreneurs of hiring such assistance. In these cases, the important principle is that the *extension agents are chosen and contracted by the clients*, rather than by a public sector agency. This approach provides institutional incentives for extension workers to respond to clients' priorities and satisfy their concerns, rather than aiming to satisfy superiors in a governmental hierarchy.

Where the public sector still provides extension services directly to farmers, as in the case of scattered smallholders who are not well organized, an important principle is to make the extension as participatory as possible, so that extension agents become *facilitators* rather than channels for delivering technical messages in a top-down form. In addition to farmer field schools, used to aid cocoa farmers in improving their productivity

and fighting *Monilia*, another successful example of this approach has been the Comités Locales de Investigación Agrícola (CIAL) pioneered by the International Center for Tropical Agriculture (CIAT) and now adopted in at least eight countries in Latin America. Enhanced farmer participation can go hand in hand with the farming systems approach developed in the 1970s, working with groups of farmers. In addition, it is important that extension, research, and market development be coordinated more closely. In the CIAL model, researchers join farmers on farmers' experimental plots, and the role of extension agents is that of facilitating the search for new findings and knowledge, including about markets and input supplies.

One area in which it is especially urgent to strengthen Belize's extension services is veterinary medicine. Cattle and poultry diseases exist that need to be eradicated, and nationally the rate of vaccinations of animals still is quite low.

7.7.2 Seeds and Breeds

Belize still has a low rate of use of certified seeds, as do many developing countries. The country's seed system needs strengthening, which involves a number of elements: (1) contracting arrangements with farmers for seed multiplication, including providing them with the necessary equipment (such as dryers) for proper seed management; (2) development of a private network for seed distribution; (3) a supervisory role for the government regarding the quality of multiplied seed and labeling requirements for seed distribution; (4) a long-term educational campaign for farmers regarding the value of certified seeds; and (5) local demonstration plots, operated jointly with farmers, to test new seeds against traditional varieties and explore appropriate fertilization formulas.

Development of a private seed distribution network will require that programs designed to distribute seeds free or at subsidized prices should be discontinued. In addition to discouraging the development of viable private distribution networks, such programs are not sustainable, because they depend on international or government funding.

Improving cattle and sheep breeds and strengthening veterinary care are among the highest pri-

orities for the agriculture sector. Belize's Ministry of Agriculture and Fisheries is giving priority to breed improvement, starting with beef cattle. However, as mentioned in Section 7.3, to date only about a dozen breeding bulls have been imported, and the country needs closer to 200 bulls to meet the national demand. As noted previously, crosses have been shown to perform very well in Belize, and in combination with the tradition of raising cattle on grass rather than in feedlots, better breeds can lay the foundation for a successful export industry in beef cattle.

Equal priority should be given to developing cross-breeds of sheep, especially the Darfur-Blackbelly cross. Again, the relevant experience has been accumulated in Belize, and it is a question of disseminating that experience more widely.

7.7.3 Export Development Services

Agriculture increasingly is becoming a knowledge-intensive sector, and nowhere is this more evident than in the export subsector. Belize's experiences with exports of citrus, beans, and papaya illustrate the importance of acquiring up-to-date technical knowledge and developing mechanisms to ensure that it is applied at the farm and post-harvest levels. Given the highly technical nature of managing many nontraditional crops, even farmers with export experience frequently employ specialized advisors to review their field operations. This is not the kind of service that is easy for the public sector to supply, so the normal procedure is to make use of private advisors. For this purpose it can be valuable to set up a fund that reviews farmers' proposals and business plans (and those of farmers' groups and processors) and on that basis provides matching funding for the hiring of specialist advisors in crop cultivation and postharvest management, for exploring external markets and bringing in marketing advisors or buyers as needed, and for obtaining the certifications necessary to realize the great potential for added market value (and in some cases even to enter the market). An investment in this kind of facility can be a key element in the promotion of a more diversified array of agricultural exports from Belize. The natural conditions for such diversification exist, and what needs to be added, at least in some cases, is human capital in the form of specialized knowledge.

7.8 Strategic Issues

Belizean agriculture has significant strengths in a number of areas, and over the decades it has been able to expand apace with the rest of Belize's economy in spite of facing disadvantages in the policy arena. This chapter has outlined a number of issues that are central to the sector's further development and to unleashing its considerable potential in new areas.

One of the general strategic issues in regard to developing the sector is how to initiate value chains for new export products. Clearly, farmers should not start planting a crop, or raising a livestock species, unless a market for the crop or livestock is assured. But do farmers start with an idea about a product and then seek markets? Or does an exporter, processor, or investor identify a market and then seek out farmers to produce for it? There can be various starting points for value chains, and four key items facilitate the emergence of such chains: (1) a supportive policy environment for the sector that does not distort or suppress markets, (2) physical infrastructure adequate to underpin a competitive system, (3) availability of funding for obtaining specialized technical expertise and knowledge of and market linkage, and (4) availability of credit for covering production and processing costs.

In the case of Belize, one avenue for developing a value chain relating to a new export product, or strengthening an existing one, could be to target the export to the tourist trade, while applying international quality standards to the export, then expand sales of the product to the near abroad—the tourist trade in Quintana Roo and Yucatán as well as the Guatemalan market—and then finally export the product to the rest of the world. The most appropriate path will depend on the product. A critical aspect of the development of a value chain for any new export product would be carrying out varietal trials on Belizean farms, in coordination with private sector experts who know the demands of international markets. For a product already produced for the domestic market, production issues may be simpler, but often quality concerns will have to be addressed before successful entry can be made into export markets.

Another strategic issue for the sector is determining how wide a range of products Belize should

aspire to produce for export. Should it concentrate on only one or two new products, or should the aim be to develop several more export success stories?

To the extent that private technical assistance is employed for both quality control and improving productivity at the farm level, as well as for forging links to external markets, it is not unrealistic to expect development of several new Belizean export products, even with the country's small size. Cobia and tilapia, for example, are already well along that path, the former with the impetus of a single private investor. Section 7.3 mentions a number of other possibilities for a stronger menu of export products. Peru has developed a long list of nontraditional agricultural exports in the last 20 years, headed by asparagus, and Costa Rica's agro-export bundle is quite diverse. In Africa, Kenya is another example of a country with several different horticulture export products, and Uganda and Ethiopia are advancing in the same direction. If the four conditions mentioned earlier in the section for emergence of value chains are satisfied, then it is not unreasonable to expect that Belize could develop at least four or five significant new export products, if not more, from the cropping and livestock subsectors over the next five to seven years, starting with beef, small ruminants, and new processed forms of citrus, and perhaps including one or more crops like *pitahaya*, guava, or cashew. The prospects for success of this kind will depend to a large extent on how well some of the policy issues reviewed in the next section are addressed and the extent to which key investments in infrastructure can be realized. Eventually Belize's territorial extent will limit the diversity of its agro-export bundle, as compared with larger countries, but at this stage it is important to support various initiatives, given the impossibility of predicting with assurance which will turn out to be viable over the longer run.

7.9 Policy Recommendations

A variety of potential policy interventions in Belize's agriculture sector could increase the competitiveness of Belizean agriculture and prepare it to respond rapidly and efficiently to new opportunities for generating increased employment, income, and foreign exchange earnings. New

sources of rapid growth in the sector are mainly to be found in export-oriented production areas.

As discussed in Chapter 1, the major constraint on productive development in Belize, including in agriculture, is the scarcity of affordable credit for private investment. A key public policy priority will therefore be sustained fiscal discipline to address the underlying causes of the high cost of domestic finance. This rules out significant fiscal stimulus, either directly or through tax concessions for the agricultural sector. Fortunately a range of policy reforms could improve the incentive framework for agriculture at little or no fiscal cost.

However, there are also a number of strategic interventions that could pay off fairly substantially in terms of agricultural growth but would require fiscal support. Although fiscal constraints will circumscribe the extent to which fiscal support can be provided to the sector, there are strong public policy rationales, in terms of high benefit/cost ratios and public good/positive externalities, for limited public expenditure interventions. These interventions are included in the policy recommendations presented in the following subsections and have been ranked on the basis of (1) the magnitude of the potential payoff from additional dollars of investment and (2) the degree to which the underlying problem or issue that the intervention would address is a limiting factor for the sector's development.

7.9.1 Improve the Functioning of the Agricultural Credit System

There is a consensus that improving the functioning of Belize's agricultural credit system, to increase the volume of credit available and make it more affordable on a sustainable basis, is one of the more urgent priorities for the agriculture sector. The government is already taking steps to address this concern. However, there are multiple kinds of credit needs in the sector, and credit lines only for producers will not be sufficient to address the problem. Some additional priority needs in the financial area are the following:

1. *Trade credit.* This is an urgent requirement and could be addressed by, for example, offering through the central bank a rediscount line⁶ for this purpose. In the current world financial circumstances, importers in industrialized countries are less willing than before to offer short-term finance to exporters in developing countries, and so the lack of a trade credit facility can seriously impair Belize's export development.
2. *Legislation and regulations* to establish the basis for using stored commodities (through warehouse receipts or crop liens), processing inventories, and invoices as collateral. Having these options for collateral encourages input suppliers, product buyers, and processors to extend credit to producers, indeed, to activate financing throughout the value chain. Hence this is a key element for financing agricultural development.⁷
3. *Risk management instruments*, such as disaster risk insurance, whose potential is currently being investigated. It should be noted, however, that it is unlikely that small-scale producers would be able to pay full market premiums for this kind of insurance, so some element of subsidy probably would be required. In some cases, experiments are being developed with loan guarantee programs for banks that lend in agriculture, though care needs to be taken to avoid the moral hazard that would be associated with high levels of guarantee.

Contract farming offers additional opportunities for providing finance to farmers (as well as technical advice and inputs), but it has pitfalls and warrants a discussion of its own. Successful contract farming represents an *alliance* between farmers and the buyer that is long term and multidimensional. Contracts (oral or written) between seller and buyer that consist only of an agreed spot price for purchase of a harvest are the most likely to fail, because the two sides are necessarily adversarial on that issue. If a rural trader comes in at harvest time and offers a slightly higher price, small farmers sometimes break the contract, even though

⁶ This refers to the establishment of lines of credit to banks at rates that in turn allow them to onlend to consumers (in this case, exporters) that will prove competitive in the financial marketplace.

⁷ A classic work that summarizes the issues related to these kinds of collateral and other topics is Yaron, Benjamin, and Piprek (1997).

honoring it would mean a stable market for their produce in the longer run.

The incidence of this kind of problem can be reduced if (1) the buyer provides effective technical assistance, so that farmers see concrete benefits from it; (2) seller and buyer negotiate a flexible price with a floor and a mechanism for increasing the payment to farmers if the market price rises; (3) the buyer offers other kinds of support to farmers, such as support for local health care clinics or providing sewing machines or other means of earning income to women in the community.⁸ Some coffee cooperatives make two payments to their growers: one at the time of collecting the coffee berries, and another after the processed coffee is sold on world markets; the amount of this second payment depends on the export price received.

The Ministry of Agriculture and Fisheries can have a role in facilitating these kinds of alliances, as long as it does not try to dictate the terms. It can go as far as guaranteeing reimbursement to farmers for the first year or two of a particular contract, if the buyer does not uphold his or her end of the bargain, and providing partial compensation to the buyer if the farmers sell their harvests elsewhere, with appropriate monitoring provisions, as transitory incentives to both sides to cement a new alliance.

It should not be overlooked that grants and equity also can play a role in financing agricultural value chains, though in most developing countries, equity is a trivial source of new finance (Stiglitz 1998, 3). Grants can be extended in a manageable way via the well-established model. Equity is rarer, but venture capital funds for innovative agricultural projects have been discussed. Keys to the success of a venture capital fund for Belizean agriculture would be (1) having an external board of experts to select the eligible projects, (2) limiting the fund's equity stake in the venture to a certain percentage of total capital, and (3) having an exit strategy, for example, a rule that the fund will dispose of its shares at the end of five years, giving first purchase option to the new enterprise itself and otherwise selling them at open auction.

7.9.2 Eliminate or Greatly Simplify the Licensing System for Exports and Imports

The operations of Belize's present system of licensing for exports and imports present serious obstacles for agricultural exporters and other economic agents, including causing difficulties for exporters to obtain their imported inputs in a timely fashion. Eliminating these obstacles could go a long way toward unleashing the creative energies in the sector, and in any case, it is required under the WTO accords to which Belize has subscribed.

7.9.3 Redefine the Role of the BMDC and Reduce the Use of Price Controls on Food Products

Redefining the BMDC's role and reducing the use of price controls on food products would support simplification of the country's trade-licensing regime. Both the licenses and the actions of the BMDC impede the functioning of agricultural markets, affecting the timeliness of food imports, creating price disincentives for farmers, and making it more difficult for them to compete in export markets. Most countries of the region have closed their counterparts to the BMDC. More appropriate roles for the organization might be to fund construction and leasing of storage facilities, including cold stores, and to educate and inform farmers about quality standards and market opportunities.

7.9.4 Make Strategic Investments

A number of strategic investments could have substantial payoffs:

1. *Expansion of the country's irrigated area*, along with formation of water user groups and associated training. For the cropping subsector in general, no single intervention improves productivity per hectare more than irrigation, properly managed. The fact that so little of Belize's agricultural land is irrigated, along with the requirements of export agriculture, argues for giving a high priority to this activity, replicating the country's recent experiences with small-scale irrigation proj-

⁸ The example of providing sewing machines is taken from the practice of the tea factory SORWATHE in Rwanda, which produces some of the most highly rated teas in the world.

ects. Management of large-scale irrigation systems presents a different set of challenges, and therefore it is recommended that the focus remain on relatively small systems in which farmers can participate not only in system operation and maintenance, but also in design of the systems. It will be important to codify water use rights in legislation.

2. *Investments in genetic improvements of the country's livestock herds*, including both cattle and small ruminants. This is another type of investment that yields very substantial increases in productivity, and the results have already been demonstrated on a small scale in Belize. If the trade-related issues can be resolved with Mexico and Guatemala, exports of beef (carcasses to start with) and sheep could become important sources of farm income and foreign exchange.
3. Investments in programs to bring in *specialized technical expertise in production for export, postharvest handling, and making links to export markets*. This kind of assistance is critical for launching new value chains. One model for supplying the expertise is to respond to farmers' requests through a model like that of ProCompetitividad in Panama, mentioned in Section 7.5. But regardless of the model used, it is important that this expertise be made available, because export agriculture is an increasingly specialized field, and importers' requirements are increasingly strict. The expertise often will bring with it knowledge of new varieties and how to adapt and manage them and will emphasize intensive and continuous technical assistance at the field level on all relevant topics, including product quality and sanitary and phytosanitary and food safety standards.
4. In coordination with the private sector, investments in *expansion of the country's storage facilities and cold chain*, including at the international airport, as mentioned in Section 7.5. These facilities should include simple evaporative coolers at the farm level to take the field heat out of products before they begin their journey to the next stage in the value chain. Probably one regional cold store, privately operated, is needed in the northern part of the country and one in the south, and their management should be in private hands,

but a feasibility study should be carried out before making the decision to go ahead with these investments. The program can also include dryers (solar or otherwise) at the farm level for some products such as hot peppers.

5. *Scaling up of the recent experiences with production under covered structures*, for the domestic market as well as for exports. This is another area of investment that has very high returns in terms of increased productivity, in this case for vegetables.
6. *Improvements in rural roads*, especially in zones of concentration for production of perishable crops. The aims should be to make the roads passable year round, to speed up transit times even in good weather, and to reduce significantly the wear and tear on trucks and damage to cargo. In a broader context, economic studies have consistently shown that investments in better rural roads generate high returns in terms of the economic well-being of rural populations.

7.9.5 Redefine and Strengthen BAHA

Strengthening BAHA is a high priority, because reforms in this area will facilitate agricultural exports of all types over the longer run. It is perhaps less urgent than irrigation and genetic improvements of livestock, because considerable expansion of exports could take place with the present BAHA system, provided that trade negotiations can be concluded successfully and productivity can be increased, but it is nonetheless important. The institutional structure, funding, and operating procedures for BAHA need to be redefined. The institution's governance issues need to be addressed head on, and its structure needs to be made consistent with its role as a public sector institution that provides services that are substantially public goods, while of course allowing it to charge fees as appropriate for its certifications and other services. These governance reforms should be accompanied by additional investment in BAHA, in both physical and human capital, including the relocation of the Central Investigation Laboratory from Belize City to Belmopan, purchase of an X-ray machine, and installation of livestock holding facilities with dips.⁹ It will

⁹ Moving the Central Investigation Laboratory to Belmopan is also advisable on disaster risk management grounds (see Chapter 9).

be important to reduce the fees to users and the degree of imposition on producers that BAHA inspections currently represent. In the context of strengthening BAHA, priority should also be given to implementing a system for monitoring and controlling brucellosis and tuberculosis in herds, with the aim of eradicating those diseases in Belize. After that is achieved, it will be important to control and eradicate Newcastle disease in poultry as well. At the same time, priority should be given to developing conditions for sanitary approvals of *pitahaya* for export. Food safety is as important as sanitary and phytosanitary standards, both for exports and the domestic market, including the local tourist market. In that area, laboratory capacity is needed for residuals analysis, along with training for farmers in management of pesticides and in integrated pest management. International experience suggests that the sanitary and phytosanitary concerns should be tackled first, without understating the importance of food safety. Sanitary and phytosanitary issues are first-order priorities in international trade, and they go deeper at the farm level and can be more difficult to resolve without the requisite technical capacity.

7.9.6 Make Agricultural Research More Participatory and Competitive

Belize should institute *a competitive mechanism for allocation of agricultural research funding*, for at least part of the budget for such research. Private sector entities have demonstrated their capacity to carry out agricultural research and sometimes are more attuned to the issues that represent priorities for producers and processors. Competing for research funding also tends to improve the research proposals of public sector research entities, above all making them more relevant to farmers' most pressing needs.

Schemes should also be developed to *apply participatory approaches to agricultural research and extension*, for example, farmer field schools for cacao

and livestock management. For research, the key is to develop mechanisms to make the research agenda more demand driven, or client oriented, rather than supply driven.¹⁰ For extension, the key is to provide extension agents with incentives to respond to farmers' concerns, that is, to satisfy the client, rather than to see the role as one of delivering technical messages developed at a central level. Implementing participatory approaches invariably requires a fundamental review and restructuring of the research and extension systems and retraining of technical personnel.

7.9.7 Formulate Alternative Institutional Structures for Agricultural Cooperatives

Alternative institutional structures should be formulated for Belize's agricultural cooperatives *before* the present review of legislation governing cooperatives is concluded, with the aim of incorporating more entrepreneurial options in the amended legislation. The new options should be reviewed with a sample of farmers' groups to solicit their inputs into the formulation process. Cooperatives and other forms of organization are vital for enabling small farmers to participate in more-sophisticated markets, but the structure of cooperatives must be compatible with entrepreneurial decision making.

7.9.8 Strengthen the Statistical Framework for the Sector

Belize's current system for gathering statistical information on its agriculture sector is outdated and should be improved through the introduction of scientific sampling methods. The current system is based on opinions, and as informed as they may be, they are no substitute for observations of what farmers actually do. As a consequence, it is not possible to assess the potential range of error in estimates of crop production and areas planted, which would be possible under a more rigorous system.

¹⁰ A number of examples of this approach are presented in Chapter 8 of Norton (2004).

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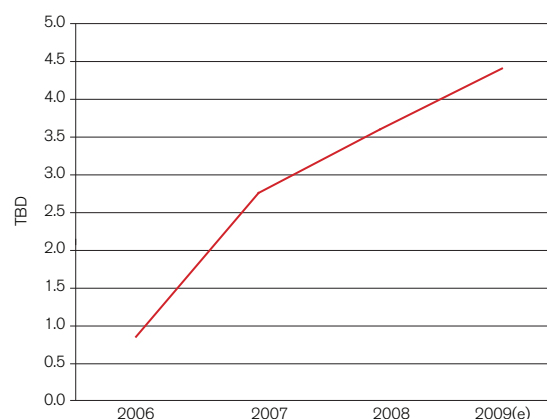
The Challenges of Managing the Oil Sector

8.1 Introduction

After years of unsuccessful exploration activities, Belize discovered oil in 2005 and is now producing it commercially (Figure 8.1). So far, the country has only one producing oil field, which produces 4,400 barrels a day. The industry believes that Belize could have 10 fields that could produce similar amounts of oil.

Oil production has made important contributions to Belize's fiscal account and to growth in its gross domestic product (GDP). Although production was relatively low in 2006 and 2007, it has grown and generated important fiscal revenue. Its contribution in the future could be significant.

FIGURE 8.1. OIL PRODUCTION



Sources: EIA (2008) and IMF (2008).

Table 8.1 presents some sample indicators on the size of Belize's oil sector, based on the most recent IMF staff reports. The expected size of the sector is estimated based on actual production data. The table includes values for the potential size of the sector—a “feasible” scenario—which implies two more fields in production. In addition it includes an “oil industry scenario” that reflects the belief within the sector that there could be up to 10 fields similar in production capacity to the one currently in operation. It is important to bear in mind that these statistics do not take into account the current price of oil; they represent only the impact of production.

It is evident from the figures in Table 8.1 that even when only the current production figures are considered, oil has become a substantial merchandise export and a substantial fiscal contributor as well. In fact, it has become the main merchandise export of Belize and the main fiscal contributor.¹ However, it could still be argued that the oil sector in Belize is “manageable.” Figure 8.2 compares the statistics in the last two lines in Table 8.1 with comparable ones for other countries, in the table's “feasible scenario” of two more fields being brought into production. Under the scenario, the relative size of Belize's oil sector could be similar to that in some net oil exporters, like Bolivia and Ecuador in Latin America, or Algeria and Cameroon outside the region. Therefore, it may be useful to examine and perhaps learn from the experience of those countries.

¹ Tourism is Belize's leading export.

TABLE 8.1. POTENTIAL SIZE OF OIL SECTOR

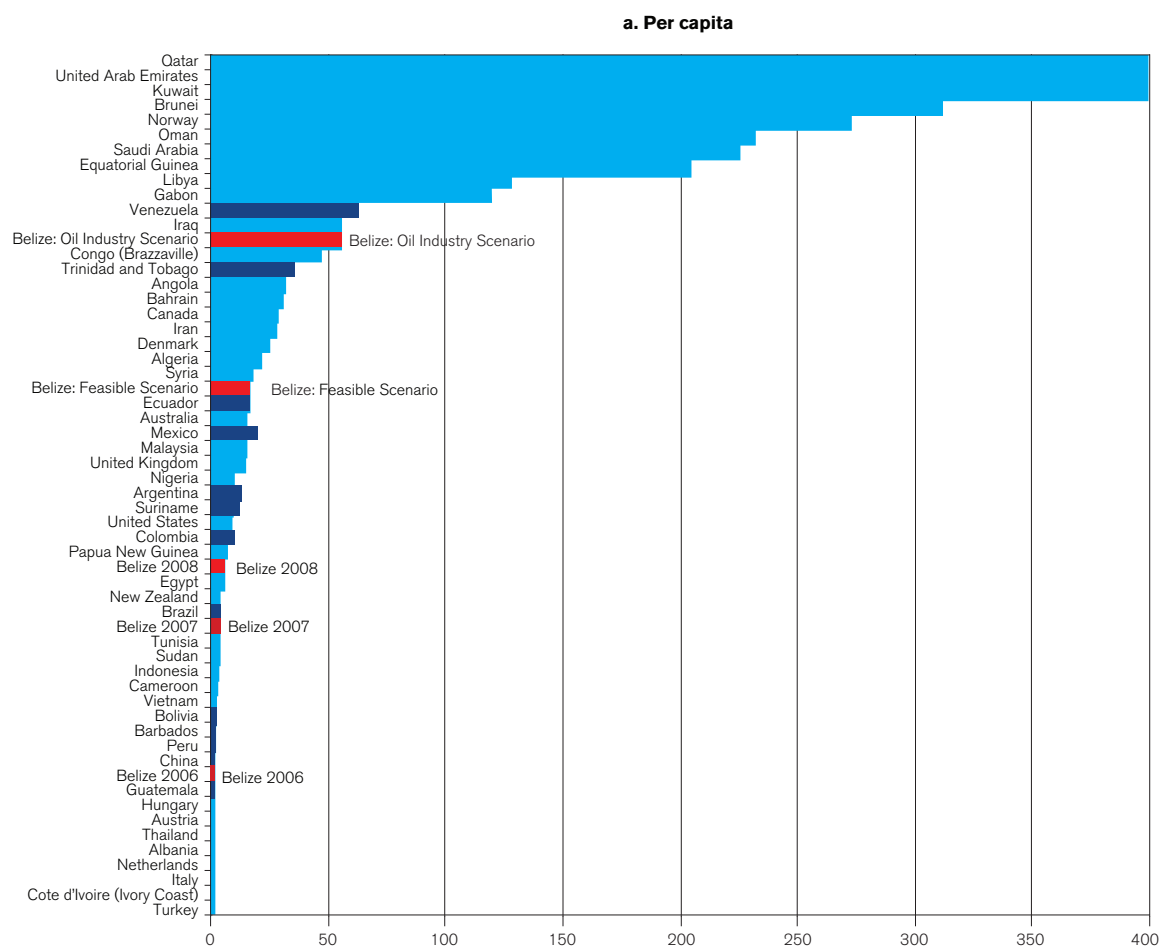
Indicator	2006	2007	2008 at 2007 prices	Feasible scenario	Oil industry scenario
Oil production (thousands of barrels per day)	0.839	2.740	4.400	13.200	44.000
Oil as percentage of GDP	2.87	3.83	6.08	17.20	47.75
Oil exports (millions of \$US)	41	57	91.54	274.63	915.42
Oil as percentage of exports	9.60	13.73	18.74	40.89	69.75
Oil revenue as percentage of GDP	0.30	1.50	2.41	7.23	24.09
Oil as percentage of fiscal revenue	1.23	5.81	8.11	20.93	46.88
Oil production per capita	1.065	3.397	5.455	16.366	54.554
Oil production per thousand dollars of GDP	0.249	0.782	1.241	3.510	9.745

Source: IMF (2008).

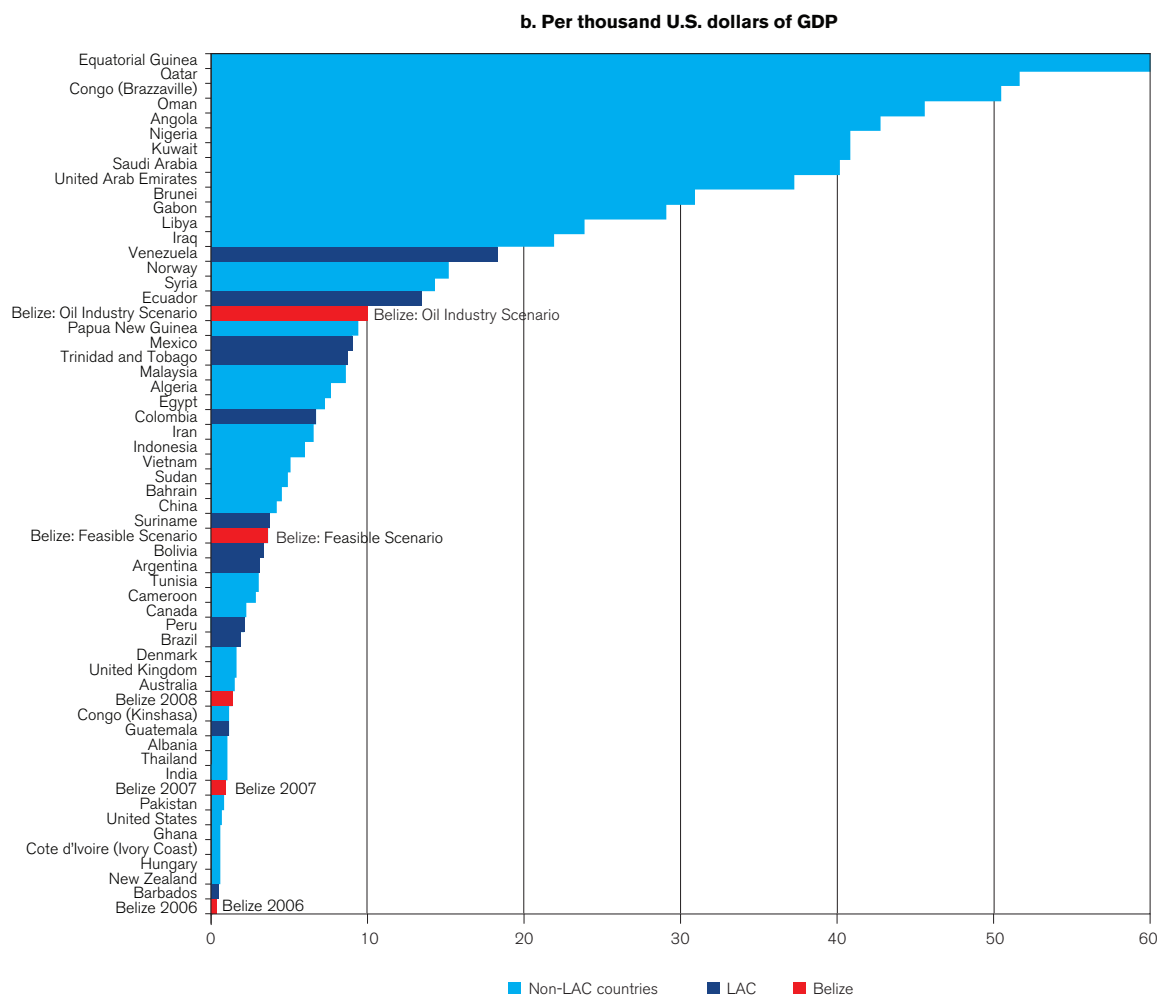
The objective of this chapter is to address the challenges facing Belize's oil sector and the implications for policymaking in Belize if the sector

should expand. The next section reviews the prospects for the sector. The chapter's third section discusses the macroeconomic issues that arise in

FIGURE 8.2. OIL PRODUCTION



Continued on next page

FIGURE 8.2. OIL PRODUCTION (Continued)

Sources: EIA (2008) and IMF (2008).

oil-producing countries. The fourth section considers wider development issues associated with oil exploitation, and the last section offers some conclusions.

8.2 Prospects for the Oil Sector

Belize has had a long history of oil exploration, dating to the 1950s, but oil in commercially exploitable quantities was not found until 2005. Because only one field seems to have yielded commercially viable production so far, most forecasts have predicted peak production around 2008 and a decline from then on. The discovery of a new field in the last quarter of 2009 seems to suggest that a decline after 2008 is no longer likely to occur.

What are the prospects for Belize's oil sector? This section argues that much depends on the policy decisions of the country's government.

8.2.1 Background

Policymaking in the oil sector has for a long time been dispersed among various government bodies, in particular, the Ministry of Natural Resources and the Environment for oil exploration and the Ministry of Finance for regulation of oil products.²

The main law that frames activities in the sector, the 1991 Petroleum Act, vested all property relating to and control over petroleum and petroleum products in Belize's government. Under

² Part of this section is based on Arbelaez (2008).

the act, however, the government can contractually cede these property rights to a private economic agent (such as an exploration/production company).

Control of the country's petroleum resources has been a contentious issue. Although Belize's Constitution did not include a provision covering the country's underground resources, because Belize became independent (in 1981) after the nationalization of coal royalties in the United Kingdom in 1938 and nationalization of the coal industry itself under the National Coal board (later British Coal) in 1946, it was widely assumed that underground resources were owned by the state and not by the owner of the land on which the resources were located. This is what the 1991 Petroleum Act reaffirmed, and because oil had not yet been discovered in Belize at that time, ownership rights were not an issue. However, when the government tried to pass a constitutional reform in the first half of 2008 to ensure that it would own and control petroleum and petroleum products, it encountered unexpected opposition from landowners, who assert that they are entitled to some benefits and are opposing the inclusion of state control in the Constitution.

Beyond the issue of property rights, exploration for and production of crude oil in Belize are mainly regulated by a 73-page Production Sharing Agreement, which provides a model contract. It follows the framework established by the 1991 Petroleum Act and its associated 1992 regulations. The Production Sharing Agreement specifies in detail all aspects of the contract, such as duration, minimum work and expenditure required, valuations, royalties, production sharing, taxes, exemptions from customs duties, and arbitration and termination conditions. The contract is administered by the Petroleum Inspector, who is also the Director of the Department of Geology and Petroleum at the Ministry of Natural Resources and the Environment. The government has also established a board to advise the ministry in all

matters related to the administration and development of the oil industry.

After having drilled 52 exploratory wells in Belize since 1956—most of them unproductive and a few showing some oil but not enough for commercial exploitation—a small Irish-American company, Belize Natural Energy Limited (BNE), discovered oil in a field near Belmopan in 2005. The field is currently producing 4,400 barrels per day of very-good-quality oil (40 degrees API³ and with a low sulfur content, which makes it easy to refine). Currently proven reserves are estimated at 7 million barrels. BNE has obtained a syndicated loan (in the form of a US\$30 million credit facility) from the financing firm Corporación Interamericana para el Financiamiento de Infraestructura, S.A. (CIFI) for further development of the field. Soon after the oil discovery, the Belizean government passed legislation increasing the income tax on petroleum profits to 40 percent, resulting in an estimated increase in the total government take from 30 to 60 percent. This produced dissatisfaction among the oil investors in the country, who perceive it as an *ex post* change in the rules of the game and argue that the high tax rate may discourage future investors.

In 2008, when oil prices surpassed the US\$100 per barrel threshold, the government wanted to increase oil taxes again. This time the process involved a negotiation between the government and the oil firms, leading to an eventual agreement that included price contingencies in oil taxes. When oil prices reach any of the thresholds specified in the agreement, tax rates on oil will increase; when the prices fall below the thresholds, the taxes will fall as well. The agreement also incorporates differential tax treatment for BNE and the firms that have not yet discovered oil. Taxes for BNE are also higher than those for other firms, based on the assumption that it has benefited from low geological risk (in a country where the risk level is considered high, based on its oil production history) and a period of high oil prices.⁴

³ API stands for American Petroleum Institute, which designed a scale measuring the weight of petroleum liquids compared to water; it is thus used to measure the relative density of petroleum liquids. Though the measurement is in reality unitless, the units are conventionally referred to as degrees. Oil with an API rating between 40 and 45 degrees is the most sought after by refineries and commands the highest prices.

⁴ There was also the issue that BNE sold part of its production in future contracts. The price of those contracts was clearly below the market price. The change in the tax code included provisions for this issue.

Oil production depends on other factors in addition to the natural endowment of the sector (Manzano and Monaldi 2008). The expansion of oil production in Belize seems to be driven by the competitiveness of the sector under the current market conditions. Therefore, Belize needs to attract investment for oil exploration and production. In order to accomplish this, the government should handle with great care the way it introduces modifications to its taxation (and other) laws in the wake of oil discoveries. Changes in the rules of the game that affect the expected cash flow of companies after a contract has been signed, based on different expectations, are likely to have a negative effect on the investment climate. They will also affect the prospects for smooth growth of exploration activities in a country still perceived as having high geological risk.

The companies currently conducting oil exploration efforts in Belize are relatively small, independent oil companies. The regular big players in the oil industry may not be willing to expand into Belize (the country's area is too small); independents, who are more willing to go, may not have the financial wherewithal to develop a field, once oil is found, and thus need financial resources to develop any fields they discover (and likely for exploration as well). This situation has worsened as the global financial crisis has cut lending around

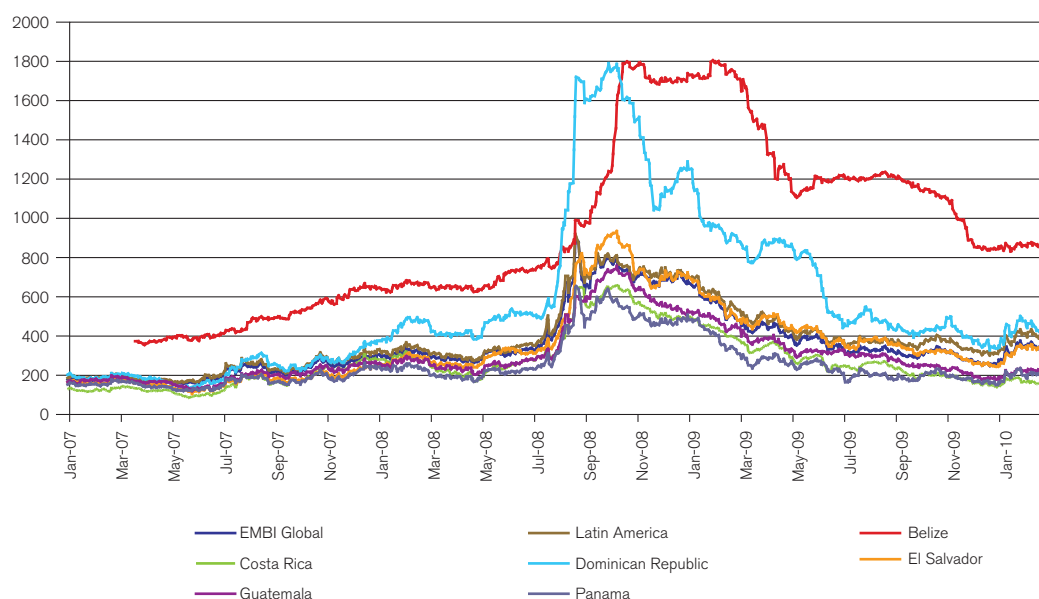
the world. As shown in Figure 8.3, this contraction of credit is especially affecting countries that are not considered investment grade (including Belize). Latin American bond spreads have increased substantially in 2009, making credit basically too expensive for most firms that would likely be interested in exploring for oil in Belize. Similarly, credit has contracted for sectors considered high risk and those in which current prices are low (both of which apply in the case of oil). Therefore, the oil sector is facing a potentially important credit crunch, even if its prospects for the medium and long run are good.

8.2.2 Policy Options

Certain structural features of the oil industry greatly influence the way the institutional framework and the political economy of the sector evolve (Manzano and Monaldi 2008). First, oil extraction generates important rents, and governments naturally attempt to appropriate a significant share of those rents. Second, oil extraction requires sunk investments of major proportions. Once assets are deployed, the government can change the rules of the game, leaving the investor with little option but to acquiesce. Third, oil exploration involves high geological risks, whereas in the field development and production phases, these risks significantly decline. As a result, con-

FIGURE 8.3. EMERGING MARKETS BOND INDEX

(basis points)



Source: Bloomberg.

tractual frameworks designed to promote investment in exploration have often been ill suited for the later phases if significant oil reserves have been developed. Finally, the price of oil in the international markets has been volatile, especially since the 1970s, and as a result oil rents have also been quite volatile, making it challenging for fiscal systems to capture the oil rents under different price scenarios. The way oil-dependent countries manage the ensuing fiscal volatility can also affect the contractual framework.

As argued in Manzano and Monaldi (2008) for Venezuela and in Hogan and Sturzenegger (2010) in general, the above characteristics of the oil sector, combined with the lack of effective progressive tax systems and a weak institutional framework, have generated episodes of contract renegotiation, especially whenever oil rents increase significantly. These renegotiations affect investment decisions and production. Consequently, the main challenge is to create an appropriate institutional framework that attracts foreign investors but at the same time generates a fair share of revenues to the government.

Johnston (2008) argues that the type of contractual relationship between oil companies and governments matters less than other elements of the contract and of contract performance. In particular, he argues that there are other issues that also matter, such as government participation, incentives to keep costs down, the responsiveness of any deals made to changing economic conditions, provisions to minimize risks, and provisions to allow companies to “book barrels.”⁵ Based on his analysis, the author argues that in cases in which governments are in a weak bargaining position—which could characterize Belize, given that it is a “frontier area”—negotiated deals are better, in terms of the conditions given to the host country, than competitive bidding.

This opens the door for a discussion of two important issues. The first is taxation, which has to be flexible in regard to various contingencies that affect oil exploitation: oil prices, geological risk, type of field, etc. However, when governments lack a strong collection agency, they may find that

royalties may be easier to pursue and manage than income taxes. For that reason, Rigobón (2010) argues that royalties contingent on prices are a good “second-best” option for generating government revenues from oil production.

The second issue, no less important, is the political economy concerns around negotiated deals. In negotiated deals, governments have to keep both oil companies and the public happy. Therefore, transparency is crucial. Radon (2008) argues that there are many factors that have to be negotiated, and sometimes the factors that matter most to the people are impacts on the environment, social conditions, the economy, and politics. The fundamental issue is determining what constitutes a “fair outcome,” and this requires a substantial amount of information, such as oil quality, field characteristics, required investment, and expected costs. Ideally, governments that have state-owned companies have the necessary information. However, running an efficient state-owned company that will generate the required information is feasible only for large oil producers that can also force the state-owned company to compete with other independent companies. Other countries might want to get information from these larger producers to improve their negotiating positions.

Clearly, the two renegotiations of the oil tax regime that have already occurred in Belize might have reduced either the disposition of oil firms to invest in Belize or of private capital to finance oil projects in Belize. It is important to keep in mind, however, that as noted above, the last renegotiation (in 2008) was part of a dialogue between the government and the oil companies; furthermore, it took place in a global context in which such renegotiations were taking place in most producing countries. Therefore, the last renegotiation might have had less impact. In this regard, little investment took place in the beginning of 2009, when oil prices fell. However, investment seems to have recovered with the oil prices and, as already mentioned, even a new discovery has been announced.

Looking forward, the important issue for policymakers in Belize is to avoid further renegotiation

⁵ “Booking barrels” refers to including them in the balance sheets of oil-producing companies.

of the oil tax regime. As this chapter was written, the oil market had experienced record high prices, which later fell almost 70 percent. In this context, oil firms are being careful in regard to where they invest. Additional legal uncertainty will only make them more reluctant to invest in Belize.

Beyond this issue, if more oil is found in Belize, a next step would be to design institutions to deal specifically with the country's oil sector. In this regard, it would be important to consider the recommendations made above regarding transparency, taking into account the factors that matter most to the people, along with other issues.

8.3 Macroeconomic Management of Oil Revenues

If more oil were to be found, the main challenge for Belize would be to manage the sector's various impacts. One of the main areas of policymaking that is affected by the oil sector is macroeconomic management. The economy of Belize is based on natural resources. In this context, petroleum has become an important source of growth for the country.

In terms of macroeconomic policy, Belize has a pegged exchange rate that has contributed to low levels of inflation in recent years (except 2008, with the rise in the price of commodities). Belize has also achieved important results in the fiscal sector.

The country's public debt stock rose rapidly between 1998 and 2006, reaching approximately US\$1 billion—around 102 percent of GDP—in 2003. Faced with limited access to financial markets, the government undertook a significant fiscal adjustment, derived from both the revenue and expenditure sides. The primary balance shifted from a deficit of 6.9 percent of GDP in 2003 to near balance in 2005 and a surplus of 4.1 percent in 2007. The overall fiscal deficit declined from -10.8 percent of GDP in 2003 to -1.1 percent in 2007. Nevertheless, in spite of the impressive fiscal adjustment, an upcoming bunching of debt service payments in 2007 forced the government to reschedule the country's debt service in late 2006. Belize undertook the exchange of its commercial debt, which reduced debt in net present value terms by approximately 20 percent through an extension

of the principal repayment (via a 12-year grace period) and a reduction in the interest rate.

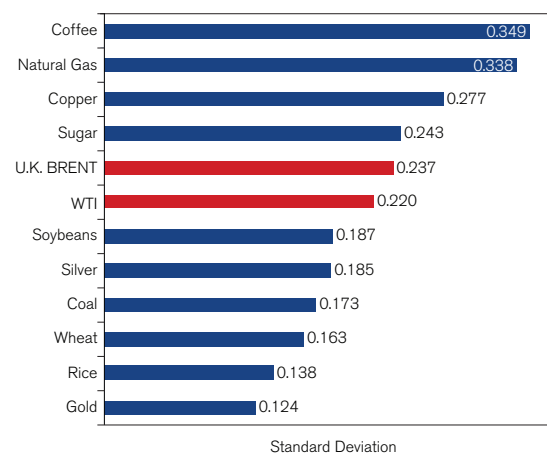
According to the IDB (2007), it is especially important that the country's external debt stock be reduced prior to 2012, when the interest rate on the superbond issued after the debt restructuring of 2004 will increase to 8.5 percent, making the debt increasingly costly to service (see Chapter 2). Furthermore, after 2019, principal repayments on the superbond are scheduled to begin. For this reason, the government's medium-term economic program consists of continuing the adjustment process to stabilize the fiscal and external debt situation and to place public sector finances on a sustainable path. The oil sector could play an important role in helping or destabilizing the macroeconomic environment.

8.3.1 Background

Looking at the poor performance of Latin American and Caribbean countries, Manzano (2002) argues that volatility of the terms of trade in the region is one of the main causes of the high volatility of output growth. Oil is one of the commodities with the highest price volatility (see Figure 8.4), raising concerns about the impact of oil on the Belizean economy.

As argued by Manzano (2002), based on work by others, the first impact of terms of trade shocks is capital flows volatility. In countries like Belize,

FIGURE 8.4. COMMODITY PRICE VOLATILITY



Source: Authors' calculations based on data from the International Monetary Fund's *International Financial Statistics*.

Note: Based on annual prices during 1987–2007.

which are non-investment-grade, capital flows are procyclical. Therefore, when export prices are high, capital flows into the country, and when these prices are down, there is a reduction in inflows or even an outflow of financial resources. Consequently, oil prices could have a double impact on external volatility: through exports and through capital flows.

In this regard, Belizean exports are relatively diversified. Nevertheless, they are highly dependent on commodities. Eighty percent of the exports are commodities,⁶ and 93.5 percent are primary products.⁷ Furthermore, the share of oil is increasing.

All the same, the fact that a country faces higher external volatility need not necessarily translate into high domestic volatility. Therefore, Manzano (2002) discusses some of the channels that transmit this volatility.

One channel through which the effect of external vulnerability passed on is fiscal policy. Following a procyclical fiscal policy has both a *transmission* effect and an *amplifying* effect on a country's external vulnerability. Furthermore, those countries with a public expenditure highly and positively correlated with their terms of trade tend to have capital flows that are also highly and positively correlated with their terms of trade.

Countries that have more difficulty accessing international markets tend to behave procyclically. This could be a concern in the case of Belize, which has practically no access to external financing, except from multilateral sources. The recent increases in government expenditure could signal procyclical behavior, although it is too early to tell.

A second channel through which the effect of external vulnerability is passed on is the financial

sector. There is evidence that in some countries the financial sector might induce a volatile economy, even when the fiscal authorities are behaving prudently.⁸ In these cases, commodity price booms induce an expansion of credit to the private sector. However, the opposite happens when commodity prices fall.⁹ Manzano (2002) provides an explanation of the channels for these credit booms and crunches.

Furthermore, monetary policy might not be relevant. As argued in Caballero and Krishnamurthy (2001), in countries where the financial sector is underdeveloped but integrated with world capital markets, foreign assets become the "hard collateral" of the economy. Therefore, when there is a commodity price boom, there is an expansion of credit, and the opposite happens when prices fall. In this situation, if the monetary authority tries to curb the credit expansion through higher interest rates, this might trigger higher capital inflows and fuel the credit boom.

In the case of Belize, the financial sector might not yet be a source of concern. Because of the collapse of the Development Finance Corporation¹⁰ and the restructuring of the country's foreign debt, Belize's financial sector is still small and relatively isolated from external financial markets. However, it will be important to take this variable into consideration in the future, because the experience of other countries shows that the expansion of the financial sector "on the wings" of the oil sector could have negative effects.

For countries that export primary products, the managing of macroeconomic stability should be a key policy priority. Recent literature has argued that macroeconomic instability could affect a country's pattern of specialization (see Hausmann and Rigobón 2003), an argument that has been

⁶ These include sugar, orange concentrate, bananas, and petroleum.

⁷ These include marine products, sugar, orange concentrate, grapefruit concentrate, bananas, papayas, and petroleum.

⁸ See Barandiarán and Hernández (1999) for the case of Chile and Esanov and Kuralbayeva (2009) for the case of Kazakhstan.

⁹ Braun and Hausmann (2002) find that terms of trade shocks increase the probability of a credit boom or crunch. Similarly, for the case of Venezuela, Figueira and Padua (2004) find that provinces that saw an increase in oil activity also witnessed a credit boom, and the opposite occurred when oil production fell.

¹⁰ From 1998 to 2002, one of the policies used by the Belizean government to bolster the economy was to fund credit and investment projects through the Development Finance Corporation (DFC). This caused an expansion of the DFC's loan portfolio, which was financed with public debt, which the DFC was in no position to repay. To solve this problem, the government decided to assume responsibility for the repayment of some of those obligations, generating serious problems for the country's public finances, because the obligations represented an important proportion of the fiscal deficit. Eventually, the government had to shut down the DFC to ensure that it did not cause any more quasi-fiscal deficits.

backed up by empirical evidence (see Lederman and Xu 2002 and Manzano 2002, 2007). Therefore, managing the volatility of oil prices not only is important for macroeconomic stability, but could also have long-lasting effects on development.

8.3.2 Policy Options

Fiscal management of oil resources is key for Belize to continue working to achieve fiscal sustainability and stability. The traditional view is that countries where an important part of fiscal revenue depends on a commodity should employ some form of revenue stabilization fund (Hausmann, Powell, and Rigobón 1993; Engel and Valdés 2000). Nevertheless, some have raised concerns about the feasibility of this solution to the problem of revenue volatility for two reasons. First, the optimal stabilization fund might imply rules that are difficult to implement administratively. Second, there is evidence that as resources accumulate in such a fund, there are political incentives to “raid” it (Clemente, Faris, and Puente 2002).

For this reason, there is a new view on how to handle revenue volatility. Hausmann (2001) offers three suggestions on how to avoid volatility: be solvent, be liquid, and be credible. To achieve the objectives of being solvent (having the ability to borrow in bad times) and being liquid (being prepared in case of not having access to debt roll-overs), “contingent policies,” such as stabilization funds, have traditionally been the main suggestion. Hausmann argues that this solution raises three problems: (1) money is fungible; (2) stabilization funds constrain liquidity management more than the deficit; and (3) as money in the fund grows, so does the incentive to spend it.

Therefore, according to Hausmann (2001), a stabilization fund is not as important, as a remedy for revenue volatility, as a country’s budget rules and institutions (numerical and procedural rules, and rules that affect budget transparency), which play a key role. Hausmann’s recommendation is that the rules and procedures be biased in an antideficit way, taking into account the importance of political will.

Furthermore, in a recent work, Van der Ploeg and Venables (2008) examine alternative uses of reve-

nues arising from a temporary windfall of foreign aid or natural resources. Such a windfall has many different potential uses: investing in public infrastructure; reducing government debt and thereby lowering interest rates and boosting private sector investment; providing more education, health care, and other public goods to improve quality of life or transferring resources directly to citizens through tax cuts; or transforming exhaustible resource assets into interest-earning foreign assets by setting up a sovereign wealth fund for future generations.

Van der Ploeg and Venables (2008) analyze how to address the policy choices associated with these different potential uses for the windfall in relatively poor countries with less-than-perfect access to capital markets. The authors focus on three government options for maximizing welfare: using the windfall for private (or public) consumption, spending on public assets that raise income and the marginal productivity of private investment, and altering the country’s foreign asset/debt position.

The results are as follows. When only the government can borrow, at the world interest rate:

- If the windfall is small:
 - The government immediately raises transfers to its citizens and boosts private and public consumption. Nevertheless, the increase in transfers is less than the increase in revenues.
 - The government pays off debt relatively rapidly, because the jump in consumption is less than the flow of revenue.
 - The windfall raises consumption, but does not raise the long-run level of consumption to which the economy asymptotically converges.
 - There is no sovereign wealth fund.
- If the windfall is larger:
 - It is associated with a larger initial jump in consumption.
 - It is optimal to repay all debt before the resource is depleted.
 - A higher initial debt and a smaller and less-protected windfall reduces the size of the terminal sovereign wealth fund.

When only the government can borrow, with an interest premium on foreign borrowing:

- More resources are devoted to reducing the domestic interest rate.
- A sovereign wealth fund is accumulated only if the resource windfall is temporary and large enough to move the economy out of the regime in which it faces a premium on its foreign debt.

When there is private and public investment and a class of domestic capitalists with access to credit markets:¹¹

- Public and private consumption increases ahead of resource revenue flow, but to a lesser extent than would be the case under the permanent-income hypothesis;¹² nevertheless, this increase leads to an increase in domestic interest rates and consequent reduction in the growth of the capital stock and income.
- During the period of revenue flow, there is rapid debt reduction, private investment, and investment in public infrastructure, which cause wages to rise and make the optimal consumption trajectory consistent with much lower transfers (or higher taxes) for workers.
- This investment accelerates the asymptotic growth trajectory followed by the economy once resource revenues have terminated and—only if the windfall is large relative to the economy's state of development—may also be associated with a sovereign wealth fund and permanently higher consumption level.
- The government finds it more attractive to invest in public infrastructure rather than a sovereign wealth fund because the former is more difficult for future political rivals to raid than foreign assets held in such a fund.

Van der Ploeg and Venables (2008) conclude that governments of developing countries face trade-offs among using the windfall for debt reduction, boosting private or public consumption, and investing in public infrastructure. The size of the windfall is important in regard to the accumulation of a sovereign wealth fund. When the

windfall is small, the government uses it to reduce foreign debt and interest rates, so that little remains to build up such a fund, and the long-run level of private and public consumption remains the same. By contrast, when the windfall is large, it is possible to accumulate a sovereign wealth fund, so the long-run level of private and public consumption is higher than it would have been in the absence of the windfall.

On August 31, 2007, Belize's Parliament approved a bill establishing a Petroleum Revenue Management Fund. According to the law, government revenues from oil would be invested in the fund, and the budget would receive an amount that is calculated as "permanent sustainable income." Under the law, the Prime Minister will decide when to implement the fund, and this has not yet been done.

The fund has a number of positive aspects, but it also raises some concerns. First, such a fund will be relatively complex to manage, which can impose a burden in a small country with a small bureaucracy. This is particularly relevant for a country such as Belize where the windfall from oil revenues is still small. Second, there are concerns that the fund will restrict the government in regard to how it can use oil revenues, given the fact that the government just underwent an important debt restructuring and has an important target of fiscal surpluses. In light of the findings in the recent literature, postponing the implementation of the fund may turn out to have been a good decision. Nevertheless, it is important that Belize dedicate resources to repaying its external debt. Furthermore, the signal that the fund can be implemented if the oil sector becomes larger is also important to show the country's commitment to macroeconomic stability.

Further down the road, one of the main challenges for Belize, even beyond the issue of revenue volatility arising from its oil resources, will be the strengthening and development of the country's financial sector.

¹¹ For simplicity, the authors suppose that the "capitalists" receive no labor income; workers remain credit constrained; and the government invests in public infrastructure, has at its disposal various tax/transfer instruments, and has access to international capital markets.

¹² In its simplest form, the permanent-income hypothesis, developed by Milton Friedman (1957), states that consumption patterns are determined not by current income, but by longer-term income expectations.

8.4 Local Impacts of Oil Activity

8.4.1 Environment

Hydrocarbon exploration and extraction lead to negative environmental effects that range from the change in the use of soil to diseases of the respiratory system in humans. A number of oil industry processes have direct impacts on the environment, such as effluent discharges, gaseous emissions, and the generation of solid waste.

Water is the largest-volume liquid waste generated during the production of oil and gas, and the volume typically increases as oil and gas fields age. This wastewater has a larger impact on the environment in the case of onshore production and may impact potable aquifers. The IFC (2007) therefore advises that “produced water discharges to surface waters or to land should be the last option considered and only if there is no other option available” for disposing of the wastewater.

Gaseous emissions from oil and gas production processes, such as carbon dioxide (the largest gaseous release), methane, and nitrogen oxides, contribute to the greenhouse effect and to diseases of the respiratory system in humans. In regard to these emissions, IFC (2007) suggests that

- (1) All reasonable attempts should be made to maximize energy efficiency and design facilities to minimize energy use. The overall objective should be to reduce air emissions and evaluate cost-effective options for reducing emissions that are technically feasible.
- (2) If flaring [burning of the emitted gases] is necessary, continuous improvement of flaring through implementation of best practices and new technologies should be demonstrated.

Solid wastes generated in oil production can be divided into two main groups: those specific to onshore oil and gas development activities, and the typical nonhazardous and hazardous wastes routinely generated at onshore facilities. The first

group includes drilled cuttings (which depend on the location),¹³ produced sand, and naturally occurring radioactive materials. The second group consists of general office and packaging wastes, waste oils, paraffins, waxes, oil-contaminated rags, hydraulic fluids, used batteries, empty paint cans, waste chemicals and used chemical containers, used filters, fluorescent tubes, scrap metals, and medical waste, among other things. Both kinds of solid wastes should be separated according to whether they are nonhazardous or hazardous previous to their treatment and disposal (IFC 2007).

Among the other effects of hydrocarbon exploration and exploitation are noise and the potential for spills of oil or refined petroleum products. The sound and vibration propagation arising from seismic operations may affect human populations or wildlife. Spills have a significant and visible impact on the environment; the degree of environmental impact is highly dependent on the nature of the release, where it occurs, and how it is managed.

In addition to its other effects, hydrocarbon extraction dramatically changes soil use in the area where it occurs. The soil in the affected area becomes contaminated by water discharges, drainage, accidents, and spills, so that it can never again be used for certain activities, such as agriculture. Erosion caused by water discharges and changes in land slope resulting from extractive activities also dramatically changes soil use in the affected area.

The institutions required to manage hydrocarbon exploitation and its effects on the environment vary among oil-producing countries. In some countries, one institution takes care of both regulation of the industry and promotion and application of the environmental laws concerning the industry. For example, Canada has its National Energy Board,¹⁴ and Kuwait has its Ministry of Oil.¹⁵

Most countries, however, separate the responsibilities between a petroleum institution and an environmental institution. For example, Russia has the Committee on Geology (for hydrocarbon

¹³ These are small pieces of rock that break away while petroleum wells are being drilled.

¹⁴ Canada's National Energy Board regulates international and interprovincial aspects of the country's oil, gas, and electricity industries. It also promotes safety and security, environmental protection, and efficient energy infrastructure and markets within the mandate set by the Canadian Parliament.

¹⁵ Kuwait's Ministry of Oil participates in the works and programs of the Environmental Public Authority, reviewing the operation and projects of the oil sector to ascertain that they are fulfilling environmental requirements.

matters) and the Ministry of Natural Resources (for environmental concerns). Norway has the Norwegian Petroleum Directorate to handle matters related to hydrocarbons, and on the environmental front three institutions are involved: the Norwegian Petroleum Safety Authority, the Norwegian Pollution Control Authority, and the Norwegian Social and Health Directorate.¹⁶ The United Kingdom recently created a Department of Energy and Climate Change for resource management issues, and environmental concerns are addressed by its Energy Efficiency Office, located in the Department of the Environment. Finally, Saudi Arabia has both a Ministry of Petroleum and Mineral Resources and an Environmental Protection Department, which ensure that the state-owned national oil company (Aramco) operates in an environmentally responsible manner.

8.4.2 Local Development

Hydrocarbon exploitation can have different effects in different localities. Generally, the oil sector has been seen as an enclave. However, recent evidence points to different conclusions in the case of onshore exploitation. In this context, like any other economic activity, oil demands labor and services from the local economy.

Therefore, recent work has found that increases in oil production expand labor market participation in the municipalities where oil is produced,¹⁷ generally due to an increase in wages.¹⁸ These higher wages have an impact on other tradable sectors, which see their competitiveness reduced as a result. Therefore, this is another channel through which Dutch disease operates.¹⁹

Data limitations preclude testing whether these effects are present in Belize. Nevertheless, anecdotal evidence seems to suggest that they already are, at least in some form. Local agricultural pro-

ducers have complained that they have to pay temporary workers twice as much as they used to pay before oil was produced. Therefore, if the petroleum sector continues to grow, the increased wages it generates in the localities where oil is produced could be an issue.

Furthermore, if oil is affecting the relative price of labor in the localities where it is produced, it should be expected that it is also affecting other decisions by households, like education. Here the evidence is mixed. From a cross-country point of view, resource exploitation could actually increase human capital, through better health and education.²⁰ Most probably this is due to greater resources for the state, which can then provide higher levels of these services.

Nevertheless, there is evidence that the production of resources has a negative impact on schooling at the local level.²¹ This is directly associated with higher wages, which reduce the incentive to get more education.

Given that they affect both firms and households, it is important to take these impacts into consideration at the time oil is developed in a particular locality. Evidently, some of these effects can be mitigated if the central government has sound macroeconomic management and an appropriate tax schedule. Nevertheless, because most of these impacts are due to decisions by oil-producing firms, these government interventions are not enough.

There is little or no evidence, at the global level, of successful management of these impacts. In any case, any successful intervention has to take into consideration three factors:

- Generation of the appropriate incentives for both firms and households to continue their productive behavior (either producing goods

¹⁶ The Norwegian Pollution Control Authority and the Norwegian Social and Health Directorate are responsible for legislation on health, environment, and safety.

¹⁷ See Manzano (forthcoming) for the Venezuelan case.

¹⁸ See Herbertson, Skuladottir, and Zoega (1999) for the case of Iceland and Fuenmayor and Rivero (2002) for Venezuela.

¹⁹ See Fuenmayor and Rivero (2002) for Venezuela and Stijns (2001) for a cross-country study. It is important to mention that Dutch disease does not have a negative impact on welfare, unless one assumes some type of dynamic process of “knowledge.” In this case, there will be social losses, because firms are losing “knowledge capital” if they stop producing a particular good for a period of time. See Krugman (1987) and Sachs and Warner (1995, 1997).

²⁰ See Stijns (2001) for a panel study of the world.

²¹ See Black, McKinnish, and Sanders (2005) for the case of coal in West Virginia and Badiola and Esquivar (2007) for the case of oil in Venezuela.

- or developing human capital, depending on the case) as oil production begins or increases.
- Ensuring that measures taken are state-contingent, so that if the circumstances that prompted the interventions disappear, the interventions end.
- In the context of a country, such as Belize, where the public finances are weakened, ensuring that interventions are revenue-neutral.

Finally, the relationship between the oil sector and local communities is also a matter of concern. In the case of Belize, this is an important issue, particularly because it is interwoven with the issue of resource ownership. There are three important factors: the political economy of the sector, the relationship between the central government and the local authorities, and the behavior of the oil firms.

Karl (2008) argues for a transparent fiscal social contract: an implicit agreement and explicit regulation that create incentives for all agents—international firms, central government, local governments, and communities—to change rent-seeking behavior. The type of dialogue that takes place between the various actors changes when the incentives for rent seeking are removed. As Karl argues, the removal of the rent-seeking incentives is not an easy task, because the presence of democracy alone does not ensure it. Karl provides a series of recommendations to include in the proposed social contract:

- Government monitoring of the oil sector, and disclosure of that monitoring should, be transparent.
- Oil companies should publicly disclose all payments to the government and to communities. They should also pledge to respect internationally recognized environmental and health standards.
- International financial institutions should condition any assistance on transparency.
- Nongovernmental organizations should help disseminate information on oil revenue, profits, tax payments, etc They should also form “umbrella” coalitions, to avoid dispersion of interest around the oil sector and better coordinate the dialog.

In the case of Belize, the issue of transparency in regard to oil sector matters has been raised on several occasions, and the government has committed itself to having greater transparency in this area. BNE has received funding through the Multilateral Investment Fund and therefore adheres to international standards on environment and health. Therefore, the main challenge is to increase the flow of information between different actors.

8.4.3 Land Rights

The issue of land rights for indigenous communities in Belize is still being discussed. On October 18, 2007, Belize’s Supreme Court ruled that indigenous villages and their members hold collective and individual rights over the lands and resources they have used and occupied according to customary practices and that these rights constitute “property” under the Constitution of Belize. A legal framework must now be developed to implement this ruling.

Belize is practically on the frontier in these areas. The issue of indigenous rights is beginning to draw attention, and consequently legislation, even in developed countries. Canada, for example, is exploring the issue.²² In Canada, legislation on land rights for indigenous peoples refers to “individual land rights on reserves.” One of the major challenges for Canadian policymakers is ensuring that the underlying jurisdiction over land titling provided by the British Crown, which is the umbrella framework for the Canadian legal system, would remain. Conceptualizing this compromise between the current legal system and the First Nations system and designing legislation that would allow for the creation of a First Nations land title system comparable to the existing municipal, provincial, and federal land systems is challenging. In Belize, it could be argued that the same challenges will arise, with the chief issue being the viable coexistence of indigenous land rights with the national land system.

A consequence of such legislation is the question of jurisdiction over oil activities. In Canada, this issue has not yet been included in the legislation be-

²² For the Canadian experience, see Indian Taxation Advisory Board (2007). In particular, from that compilation, it is relevant to mention the work of Cragg (2007) and Fiscal Realities Economists (2007) for the description of best practices for land titling to indigenous communities and the fiscal and economic impacts of such titling on those communities.

ing discussed. However, the issue of increasing the generation of revenues is being explored through additional sharing of fiscal powers. Currently, indigenous communities are entitled to generate revenue by raising property taxes on their reserves, and some can also raise the tax on fuel, alcohol, and tobacco. However, discussions are underway about the extending these revenue-sharing activities to include the goods and services tax.

The case in Australia is similar (see Leshy 1985). There, some indigenous land rights have a statutory origin (Northern Territory, South Australia), whereas others are derived from recognition in the common law (although the latter have been modified somewhat by federal legislation). In general, however, the position in Australia is that indigenous land rights do not confer ownership of oil and gas resources. That ownership is vested—usually by statute—in the state or territory in which the land is located, not in the Commonwealth. Indigenous land rights do confer a measure of control over access to the land to which they apply, and that control allows the holders of the land rights to negotiate with oil and gas explorers and producers. But that control over access is not absolute; it is qualified by federal or state legislation.

Thus, how Belize manages any compromise between indigenous people and the Constitution on the forms of land and property rights is an important issue. Another important issue, in the case of oil, is whether land rights translate into ownership of oil and gas reserves. For Belize, this issue has not been fully resolved even for nonindigenous land. Therefore, it is important to develop a clear legal framework on the ownership of oil resources generally, and then on what that ownership implies in regard to indigenous lands. In addition, clear rules on the powers to generate revenues for the indigenous communities on their land will be needed.

8.5 Final Remarks

Belize is a relative newcomer to the oil business. Therefore, it might seem that the fundamental challenge is to set up the sector and deal with it institutionally. This might prove not to be a challenge, however, should oil production begin

to decline. Consequently, the first challenge for Belize in regard to its oil business is to define the horizon of that business in the country.

The country might not have full control of the variables that affect that horizon, however. Some of them are institutional. For example, the changes in the taxation rules for the oil sector have negatively affected its attractiveness for investors. In small-frontier oil-producing countries such as Belize, the appropriate solution to this issue seems to be direct negotiation between the government and oil firms. The last compromise between the government and oil firms in regard to taxation of oil revenues seems to have eased some of the concerns of the private sector. The introduction of contingent rules in the tax code also seems to have reduced the risks of further changes to that code.

A further issue, beyond the rules for the sector, is the nature of oil activity in Belize. Because Belize is a frontier province, it faces two particular challenges. The first is that the costs associated with exploration and production are higher than comparable costs for countries with developed oil industries or better geology. The second is that oil producers in Belize tend to be small, independent oil companies, which tend to finance themselves through the use of their cash flow as opposed to borrowing or raising capital. Therefore, oil activity in the country might become highly procyclical with respect to oil prices. When oil prices are high, the sector will be profitable, and oil firms will have greater cash flow. When oil prices are low, the sector will be less attractive as an investment option and oil firms will have fewer resources. In this area, there is little the government can do.

Beyond the issue of development of Belize's oil sector, there are challenges to its very existence. In all the issues discussed here, the common factor that emerges is the need to set up the appropriate institutions for the multiple challenges that arise with the exploitation of oil. As has been argued in this chapter, from the macroeconomic management of the sector to the issue of land rights for indigenous people, the key step in the Belizean case is to establish the appropriate institutions and rules that will ensure the proper management of the issues that will arise with the exploitation of the resource. Therefore, this is the second area of action for the government of Belize.

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Part III

Environmental Sustainability

Integrated Disaster Risk Management— Challenges and Opportunities

9.1 Disaster Risk Profile

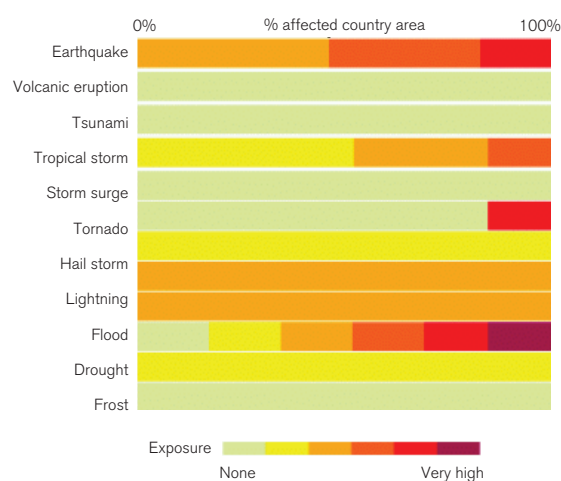
9.1.1 Natural Hazards

As a result of its location, climate, and topography, Belize is exposed to a range of natural hazards. Figure 9.1 shows the country's high level of exposure to floods, storm surge, wind hazards (tropical storms), and earthquakes, as well as its general exposure to tornadoes, drought, hail, and lightning. The country's location in the Caribbean Basin, bordered as it is on the east by the Caribbean Sea, exposes it to frequent hurricanes and tropical storms, and its low elevations and coastal population centers render it particularly vulnerable to storm surge and coastal flooding.

Belize ranks 16th among the world's countries in the degree to which it is affected by hurricanes and tropical storms (UNDP 2004). Exposure to storms has resulted in damage due to high wind speeds, as well as heavy rainfall and coastal storm surges that lead to river flooding, landslides, and coastal flooding, affecting housing, crops, infrastructure, and clean water supply. Wind hazard is greatest in the country's north (Figure 9.2). Belize City, the most-populated area, lies in hazard zone 3, indicating that there is a 10 percent chance it will experience hurricane wind speeds between 178 and 209 kilometers per hour during any 10-year period. Figure 9.3 shows that over the period 1998 to 2005 most coastal areas were affected by flooding. The district of Corozal is prone to rain inundation, and the districts of Orange Walk, Belize, Cayo, Stann Creek, and Toledo are prone to river flooding and/or rain inundation (IDB 2000).

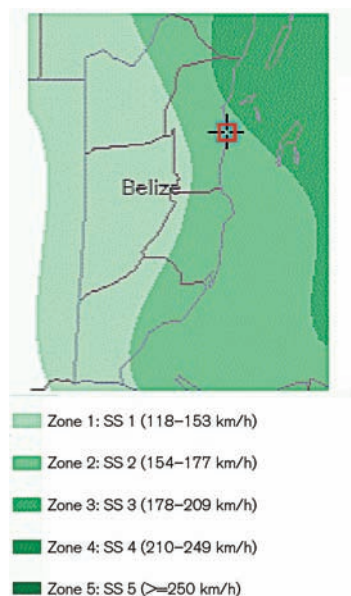
Belize is located near the eastern boundary of the Caribbean and North American tectonic plates. Seismic hazard is low to moderate in the south of the country and almost nonexistent in the north, as shown in Figures 9.4 and 9.5. There are no records of major earthquake activity, though minor seismic events have occurred (Figure 9.4). Although the country's seismic hazard is fairly low, strong earthquakes with

FIGURE 9.1. NATURAL HAZARDS AFFECTING BELIZE



Source: Munich Re (n.d.).

FIGURE 9.2. WIND HAZARD MAP

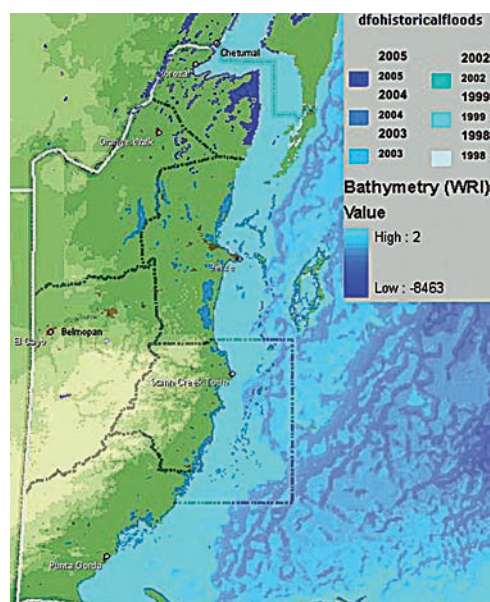


Source: Munich Re (n.d.).

Note: Map shows range of highest sustained wind speeds that have at least a 10 percent probability of being experienced in a particular location in any 10-year period.

epicenters near Belize, for example, in Guatemala or Honduras, can significantly affect the country. There are no active volcanoes in Belize, and there is no historical record of tsunamis affecting the country.

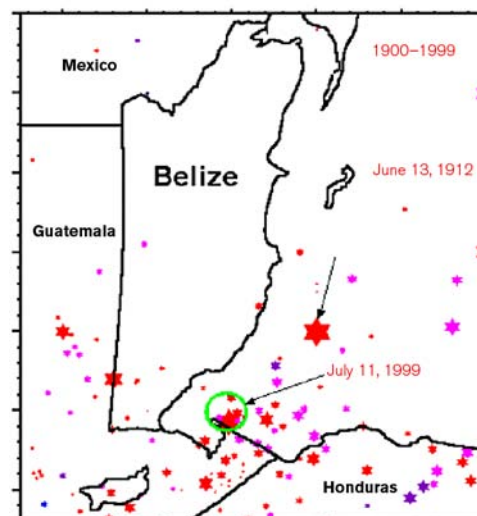
FIGURE 9.3. FLOOD HISTORY, 1998–2005



Source: SERVIR map maker.

Note: Bathymetry values show depth of water body.

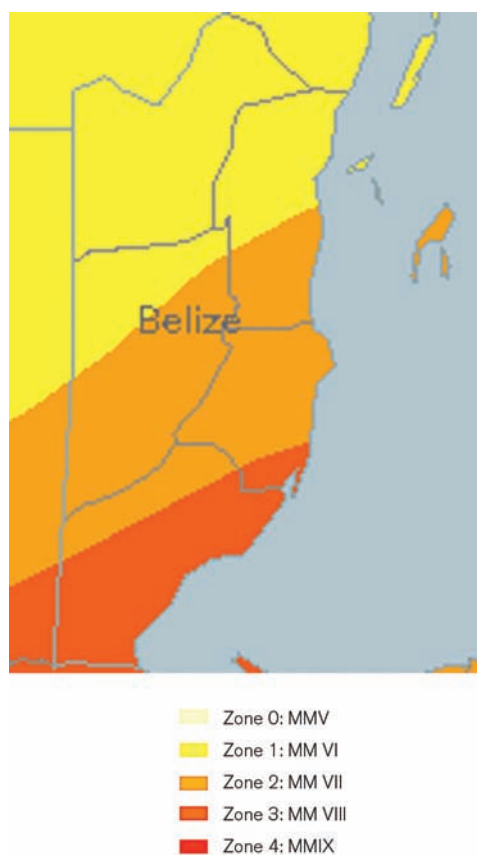
FIGURE 9.4. EARTHQUAKE HISTORY, 1900–1999



Source: Ministry of Works, Belize.

Note: Star size is proportionate to earthquake magnitude.

FIGURE 9.5. SEISMIC HAZARD



Source: Munich Re (n.d.).

Note: Map shows 10 percent probabilities that locations will exceed the specified maximum intensity on the Modified Mercalli scale in any 50-year period. Ground acceleration is greatest in southern Belize. The Modified Mercalli scale ranks earthquake intensity, from I (not felt except by a few) to XII (total damage), based on observed effects at a given location.

9.2 Disaster Vulnerability

9.2.1 Population

In 2008, Belize had a total population of 322,100 (SIB, n.d.) and a population density of 14 inhabitants per square kilometer. The most populated districts are Belize (with 30 percent of the country's total population) and Cayo (23 percent), with the most substantial population concentration in Belize City. Despite government efforts to relocate housing inland because of hurricane vulnerability, nearly half of the Belizean population lives in the coastal area (six of the country's ten major towns are situated on the coast) in locations that are at high risk of flooding due to storm surge, heavy rainfall events, and/or strong wave and wind action associated with tropical storms and hurricanes.¹ As the population of coastal towns increases as a result of rural to urban migration, there is additional pressure for development in flood-prone locations.

Although the Corozal District in the north is associated with moderate poverty levels, poverty is concentrated in the Toledo District in the country's south. These areas are primarily inhabited by Maya communities, which are the least integrated into Belizean culture, the most impoverished, and the most vulnerable, with little access to education, services, communications, and transport.

9.2.2 Productive Sectors and Infrastructure

The Belizean economy's dependence on natural-resource-based activities exacerbates its vulnerability to natural hazards and disasters. Tourism accounts for 22 percent of gross domestic product (GDP) and is the main foreign exchange earner. The most important tourist centers are situated in flood-prone areas. Among the country's principal merchandise exports, the sugar cane crop in the districts of Orange Walk and Corozal is exposed to rain inundation and river flooding, as are the citrus and banana crops in Stann Creek District, and the generation of marine products may be affected by tropical storms, storm surges, and floods.

Access to electricity, telephone, and water services is relatively good in Belize, although the country has the most expensive electricity in the region. Some roads, including sections of major highways, are subject to damage or closure during the rainy season (June to November).

9.2.3 Historical Disaster Impact

Among the natural hazards that Belize has experienced, tropical cyclones have historically had the greatest impact (Table 9.1) and are responsible for all of the country's fatalities from natural disasters between 1980 and 2000 (UNDP, n.d.). In 1931, Belize City was devastated by an unnamed hurricane that attained Category 3 wind speeds and resulted in 2,000 deaths among the population of 16,000. A number of hurricanes have affected the country in the last decade. For example, in October 2000, Hurricane Keith crossed the northern parts of Belize, affecting the cayes principally; heavy rains resulted in more than 14 deaths and US\$280 million in damage. In 2001, Hurricane Iris struck southern Belize, one of the poorest areas in the country. The country sustained losses from these two hurricanes equivalent to 40 and 25 percent of GDP, respectively. Belize City has frequently been evacuated in response to hurricanes. In 1998, Belize City, San Pedro, Caye Caulker, Ambergris Caye, and Dangriga were evacuated ahead of Hurricane Mitch; large stretches of coastline and many cayes were evacuated in 2000 prior to Hurricane Keith; and Placencia, Monkey River, and Bella Vista were evacuated in 2001 as a result of Hurricane Iris (NEMO, 2003).

Recurrent flooding is also a major problem. In 1979, Belize District was flooded as a result of heavy rains associated with a cold front, and the road between the airport and Belize City was destroyed in several places. In August 1995, San Ignacio was flooded as result of a tropical system, and in 1995, flooding associated with Hurricane Roxanne affected the Rio Hondo and Corozal areas.

Natural disasters in Belize can also result in damage that is concentrated in particular sectors. Ta-

¹ The relocation of the government's main administrative center to Belmopan after Hurricane Hattie in 1961; the threat from Hurricane Mitch in 1998, which resulted in the development of plans for a satellite city at Mile 31 on the country's Western Highway to relocate coastal residents; and the impacts of Hurricane Keith in 2000 are salient reminders of this vulnerability.

TABLE 9.1. NATURAL DISASTERS, 1931–2005

Year	Disaster ^a	Maximum winds (kph)	Landfall location ^b	Population affected ^c	Damage (US\$ thousands) ^d
1931	Hurricane (3)	N/A	Belize City	16,000	7,500
1951	Hurricane Anna (1)	130	Stann Creek	N/A	N/A
1955	Hurricane Janet (4)	241	Corozal	N/A	5,000
1960	Hurricane Abby (1)	121	Punta Gorda	N/A	N/A
1961	Hurricane Hattie (4)	222	Belize City	N/A	60,000
1974	Hurricane Carmen (4)	222	Corozal	70,000	4,000
1978	Hurricane Greta (2)	175	Stann Creek	6,000	6,000
1979	Flood			17,000	N/A
1990	Cold wave			N/A	2,250
1990	Flood			N/A	2,200
1995	Flood			2600	500
1998	Hurricane Mitch (5)	N/A		60,000	N/A
2000	Hurricane Keith (4)	296	San Pedro	62,570	277,460
2001	Hurricane Iris (4)	232	Stann Creek	20,000	50,080
2001	Tropical Storm Chantal	111	Corozal	N/A	N/A
2005	Hurricane Wilma (3)	201		N/A	N/A
2005	Tropical Storm Gamma			N/A	N/A
2007	Hurricane Dean (2)	161	Mexico	2,000	107,000 ^e

Source: EM-DAT, Belize Meteorological Service (except as otherwise noted).

Note: N/A = not available.

a For hurricanes, Saffir-Simpson category is provided in parentheses.

b Landfall location is given only when storm made landfall in Belize.

c Total affected: Persons that have been injured, affected, and/or left homeless after a disaster. Statistics in this column provide information on the number of persons affected in Belize only.

d In nominal terms for year of loss; for example, Hurricane Hattie caused \$60 million in damage in 1961 U.S. dollars, equivalent to \$413.6 million in 2007 U.S. dollars (Wikipedia, "Hurricane Hattie," available at http://en.wikipedia.org/wiki/Hurricane_Hattie). Statistics in this column provide information on damage in Belize only.

e Damage figure for Hurricane Dean is from "Hurricane Dean Costs Belize \$107 Million," San Pedro Sun, August 30, 2007, available at <http://www.sanpedrosun.net/old/07-342.html>.

ble 9.2 summarizes the main impacts of natural hazards and disasters for each of Belize's productive sectors.

9.2.4 Impacts of Climate Change

The Intergovernmental Panel on Climate Change has concluded that the global mean temperature will rise by 1.5 to 6 degrees Celsius during the next 100 years, producing a rise in mean sea level of 18 to 95 centimeters. The increase in global mean temperature will also affect the hydrological cycle, leading to changes in evaporation and precipitation patterns. The effects at the regional and national levels are uncertain. However, the United Nations Framework Convention on Climate Change recognizes Belize as one of the countries

most vulnerable to the adverse impacts of climate change as a result of (1) its long, low-lying coastline, (2) its more than 1,000 small islands, (3) its having the second-longest barrier reef in the world and more than 17,000 square kilometers of forest cover, both home to fragile ecosystems, and (4) its susceptibility to natural disasters, especially hurricanes (Government of Belize 2002).

Climate change is predicted to alter the natural hazard dynamics of Belize in three main ways. First, it will shift the average values of meteorological characteristics. For example, it will increase average day and night temperatures, affecting sea surface temperatures, which are significant in regard to hurricane formation, and also in regard to the spread of disease vectors. Second, it will affect the range of likely climate extremes, for ex-

ample, causing more episodes of intense rainfall and more droughts. The anticipated precipitation change is of the order ± 20 percent, which may increase the number of forest fires and pest outbreaks. Third, it will present new hazards, such as sea level rise, which may exacerbate the existing storm surge hazard, as well as new phenomena such as coral bleaching.

Table 9.2 summarizes the anticipated effects of climate change on Belize's productive sectors.

9.2.5 Disaster Risk, Belize City

Belize City lies entirely at or below sea level. The city, including approximately 70,000 inhabitants, is particularly vulnerable to the impacts of hurricanes and tropical storms. As noted above, in 1931, an unnamed hurricane caused widespread destruction, killing 2,000 of the town's population of 16,000. The city was struck again in 1955 by Hurricane Janet, which made landfall in the northern district of Corozal as a Category 4 storm and also caused major damage to both Corozal town and San Pedro on Ambergris Caye. In October 1961, Hurricane Hattie, another Category 4 storm, struck the city, killing 275 and causing more than US\$413 million (in 2007 dollars) in damage. Hattie destroyed an estimated 40 percent of all buildings in Belize and damaged half of those that remained, leading the government to take the bold step of relocating the country's capital 80 kilometers inland to the less-exposed town of Belmopan. The town of Hattieville, near Belize City, grew from temporary shelters erected to house refugees and still bears the storm's name. However, much of the population and many of the businesses remained in Belize City, and today it continues to be one of the most vulnerable communities in the country.

Due to the coarse resolution of available elevation data, accurate flood hazard or storm surge hazard maps for the city do not exist. However, it is estimated that storm surge from a Category 5 hurricane would likely range between 15 and 20 feet.² Flood risk in the city has been exacerbated in recent years by continued development in low-lying, flood-prone areas surrounding the city. In

addition, the flood risk to other parts of the city has increased as new development has blocked natural drainage channels and overflows. As a result, heavy rains cause rapid water accumulation, which discharges at lower rates. Although artificial canals and new drains have been constructed and have significantly improved storm runoff following torrential rains, a lack of effective drainage maintenance limits the sustained reduction of flood risk. In a low-lying area, such as Belize City, there are limited other cost-effective measures that can be implemented. The city therefore faces a geographical/environmental barrier to further lateral expansion and may have to consider alternative options, such as building upward (with appropriate construction standards), investing in (relatively expensive) levee systems, and/or curbing urban growth.

The population of Belize City has traditionally benefited from a 72-hour early warning system for approaching hurricanes, facilitating evacuation to Belmopan. The very rapid buildup of storm intensity is a new observed trend in storm development, potentially due to higher sea surface temperatures associated with climate change. That is to say, tropical storms have recently been observed to develop into Category 5 hurricanes within 24 hours and also to travel across the sea surface with forward velocities in excess of 40 kilometers per hour, in contrast to typical historical speeds of 29 kilometers per hour. These changes in observed hurricane development and movement patterns have recently forced Belize's National Meteorological Service to fast-track many of its early warning alerts, reducing the overall warning time to the population and hence increasing their vulnerability.

9.3 Disaster Risk Management

9.3.1 Policy, Institutional, and Legislative Framework

Policies, Strategies, and Plans

Belize currently does not have a national disaster risk management policy, strategy, or plan. In

² Personal communication, Ramon Frutos, Acting Chief, National Meteorological Service, 2007.

TABLE 9.2. IMPACTS OF NATURAL DISASTERS AND ANTICIPATED EFFECTS OF CLIMATE CHANGE ON BELIZE'S PRODUCTIVE SECTORS

Sector	Impacts from natural disasters
	Anticipated effects of climate change
Agriculture	Sugarcane crop is exposed to flood damage in Orange Walk and Corozal. Citrus and banana crops are especially vulnerable to wind and flood damage in Stann Creek.
	Expected increases of 1–2 degrees Celsius and rainfall changes of ± 10 percent are predicted to lower productivity by 10 percent in beans, corn, and rice. Banana, citrus, sugarcane, and emerging vegetable crops could face similar threats.
Tourism	The high season in Belize is limited primarily by the hurricane threat. Hurricanes both cause direct damage to lives and property and impose indirect costs on the economy and competitiveness.
	Most tourist attractions—coastal islands, reefs, and Mayan heritage sites—are expected to be threatened by increased flooding, stronger wind storms, and the higher energy costs related to emissions controls imposed as a result of climate change mitigation efforts.
Water resources	Saltwater intrusion during storm events affects Belize City, as well as offshore islands and coastal plains. There is inadequate drainage and sanitation around Belize City during heavy rain.
	Sea level rise has intensified the saltwater intrusion problem, particularly on offshore islands and coastal plains. Changes in evaporation rates and rainfall are affecting water resources in the country's interior.
Energy	Droughts affect hydropower availability. Excess rainfall at Chalillo dam catchments poses significant flood risk to San Ignacio.
	Hydropower availability will most likely be affected by changing water resource availability.
Forestry	Pine bark beetle outbreaks and forest fires threaten the timber industry.
	Pests and fire hazards will increase as a result of higher temperatures and longer dry periods.
Coastal zone	Tropical storms and hurricanes require frequent evacuations and provision of shelter. High winds/debris, coastal flooding, battering waves, and heavy rainfall result in loss of life and property damage. Belize City is highly vulnerable; it has experienced three major hurricanes in the past 100 years.
	Coastal erosion will have a greater impact: 100 percent of Belize's beaches are expected to disappear within the next 50 years. A one-meter rise in sea level would transform the country's wetlands into lakes. Storms are expected to develop faster, be more intense, and last longer, with increased coastal wind and flood damage.
Health	Heat waves can provoke severe stress in vegetation and humans (especially the elderly) and increase the risk of epidemics of vector-borne disease. Floods also trigger outbreaks of waterborne disease.
	New vector-borne diseases will be observed, as well as the reemergence of those such as malaria, cholera, and yellow fever. Increased incidence of respiratory illnesses should also be expected.
Fisheries	Exports of shrimp and other marine products are at risk from tropical storms and storm surges. Habitats such as sea grass beds, mangroves, and coral reefs are vulnerable to storm damage and silting.
	Traditional catches are expected to migrate as Belizean waters warm. Sea level rise and coral bleaching also threaten habitats for fish nurseries, such as mangroves and coral reefs.
Transport infrastructure	Transportation infrastructure is frequently inaccessible as a result of flooding, which also raises road and bridge maintenance costs and makes the airport inaccessible.
	Flood and drought events related to climate change are expected to increase these periods of inaccessible transport infrastructure.

Continued on next page

TABLE 9.2. IMPACTS OF NATURAL DISASTERS AND ANTICIPATED EFFECTS OF CLIMATE CHANGE ON BELIZE'S PRODUCTIVE SECTORS *(Continued)*

Sector	Impacts from natural disasters
	Anticipated effects of climate change
Urban areas	<p>Any further expansion of Belize City would infringe on flood plain and drainage channels, increasing flood risk. Dangriga, Corozal Town, the Placencia Peninsula, and Ambergris Caye are extremely vulnerable to coastal erosion and flooding.</p> <p>These same localities are extremely vulnerable to the projected sea level rise. Protecting these urban areas may require the construction of sea walls and dikes to withstand its impacts.</p>

2004, the government adopted a National Hazard Mitigation Policy that has two goals: sustainable social and economic development and environmental management through the integration of hazard risk reduction into national development processes, and national institutional strengthening for disaster risk reduction. A 10-year National Hazard Mitigation Plan, emphasizing a multisector, integrated, coordinated approach to hazard mitigation, was adopted in 2007. Several other key national policy documents explicitly promote the integration of disaster risk management into planning processes. For example, the National Coastal Zone Management Strategy emphasizes cross-sector coastal area planning and development and includes confronting coastal vulnerability as a component of one of its strategic objectives to support planned development.

Legislation

Belize's Disaster Preparedness and Response Act (2000) is the primary legislation governing disaster risk management in the country.³ The act established the National Emergency Management Organization (NEMO) as a government agency, headed by a National Emergency Coordinator, to whom it assigned broad responsibilities for "coordinating the general policy of the government related to the mitigation of, preparedness for, response to and recovery from emergencies and disasters." The act is skewed toward preparedness and response and is silent on financial protection and risk transfer.

Other relevant legislation on disaster risk management includes (1) the Belize Building Act of 2003 (amended in 2005), which provides for the regulation of building operations, including building standards, in the country⁴ but has limited provisions for monitoring and enforcement (Caribbean Disaster Emergency Response Agency and Caribbean Development Bank 2006); (2) the Land Utilization Act (revised 2000), which provides for the National Emergency Coordinator to be a member of the Land Subdivision and Utilization Authority; (3) the Environmental Protection Act, which assigns authority to the Department of the Environment to approve environmental impact assessments, subject to consultation with the National Emergency Coordinator; (4) the Coastal Zone Management Act of 1999 (supplemented in 2000), which mandates that the Coastal Zone Management Authority and Institute address cross-sector sustainable development of coastal resources; and (5) the Reconstruction and Development Corporation Act, which facilitated the 1970 relocation of the government's main administrative center from Belize City to Belmopan, following damage from Hurricane Hattie in 1961, but has not been applied since and has no currently functioning administering unit.

Institutions

NEMO is the national coordinating and implementing entity for disaster risk management. It consists of a Secretariat and a network of 12 na-

³ The Disaster Preparedness and Response Act was established with IDB financing under Belize's Hurricane Rehabilitation and Disaster Preparedness Project.

⁴ The act supersedes the Housing and Town Planning Act, which regulated development in Belize City and Belmopan only.

tional-level operational committees and nine district and special committees. NEMO's national and district committees consist of representatives from public sector ministries and institutions, private sector agencies, nongovernmental organizations, and community organizations. These committees are responsible for discharging the functions of the National Emergency Coordinator as described under the Disaster Preparedness and Response Act, including review and assessment of programs that have an impact on disaster management; policy development and recommendations; disaster risk data collection and analysis (including preparation and review of disaster risk maps); public education and information; information exchange with national, regional, and international agencies and harmonization of policies; technical advice on draft government legislation relating to disaster management; and the conduct of research studies and surveys on disaster risk as they relate to changes in the natural environment.

NEMO's technical and financial capacity to implement its mandate is generally weak. The NEMO Secretariat functions primarily as the organization's coordinating agency, although it does undertake some project implementation (e.g., training). The Secretariat has a core staff of three, with a high turnover rate, and is underresourced. Although staff members are generally well trained in emergency preparedness and response, the organization's capacity for mitigation and prevention is limited. The Secretariat's annual budget is approximately US\$320,000, primarily allocated to staff salaries.

9.3.2 Disaster Risk Management Practice

Risk Identification

Risk identification is in its incipient stages in Belize; few hazards have been appropriately assessed, and vulnerability and risk maps are limited. Some community-level vulnerability mapping has been completed, and maps of wind, wave, and storm surge hazards are available for coastal

towns, villages, and cayes in nine municipalities and six districts. The Land Information Center of the Ministry of Natural Resources and the Environment, which has primary responsibility for natural resources data, has in its geographic information system (GIS) detailed hazard maps of San Pedro town and Caye Caulker, including a wind atlas and maximum coastal flooding atlas for storm events with a 50-year and 100-year return period, and flood risk maps for the entire country. However, the resolution of the flood risk maps (much of it 90 meters in the horizontal, and with contour lines every 20 meters of elevation) is too coarse for accurate detailing of flood extent.⁵ The current GIS also includes topographical maps of Belize, including land use and cadastre information for all urban areas to the village level. The data underlying most of these maps are in need of updating.

Expertise in risk identification in Belize is limited, and NEMO relies on external support to develop risk information products. The SERVIR program is currently the sole source of both data and potential funding for training in hazard assessments. None of the Land Information Center's information is available online. Although it provides the public with maps at cost of reproduction, there is no clear policy or established practice to promote the use of map data in public sector administration. Notwithstanding, the center's database has the potential for the development of a national risk information platform in which disaster risk data could be routinely collected and manipulated to inform development decision making and risk education.

Belize's National Meteorological Service, which is part of NEMO, is responsible for monitoring all water resources in the country and maintains a weather database that includes stream flow data, which is required for use in flood mapping and early warning. Because of the persistent problem of the unavailability of high-resolution digital elevation models, country-wide flood or storm surge maps do not exist. Flood data gathering in Belize relies on manual collection of rainfall or stream flow data. Unfortunately, this means that

⁵ Flood mapping requires a baseline map with detailed elevation data, as flood heights are then superimposed on the map to visualize the flooded areas. An ideal resolution for Belize would be the 30 meter Shuttle Radar Topography Mission data available from NASA (with special approval) or 5 meter SPOT Image data available commercially at higher cost.

during a storm or flood emergency, the data are unlikely to be gathered.⁶

The Caribbean Community (CARICOM) Climate Change Centre, located in Belmopan, is beginning a series of climate impact studies in CARICOM member countries, with much of the data expected to be useful for flood risk and storm surge mapping. One project under development is to gather bathymetry data using light detection and ranging (LIDAR),⁷ which would yield the accurate maps of Belize's coast that are needed for precise storm surge and flood modeling.

Risk Reduction (Mitigation and Prevention)

Primarily as a result of the impacts of Hurricane Mitch in 1998 and other recent national, regional, and international disaster events, over the past decade awareness has grown within the public and private sectors and among the general population of the need to incorporate disaster risk reduction as an element in planning processes, and important advances have been made. In 1999, Belize's Physical Planning Section developed guidelines for design criteria for piers. The mandate of the Coastal Zone Management Authority and Institute, established that same year, includes risk reduction. In addition, in response to the explosion in construction in the country over the past decade, the Belize Building Act, which regulates building operations and building standards, was adopted (2003), the Central Building Authority was established to monitor and control building development throughout the country, and a draft building code is currently under review. However, the existing capacity for enforcement of building codes and standards is weak.

According to the law, disaster risk is to be included as a criterion in the process for approval of the siting of structures as well as in environmental impact assessments for planned buildings. However, hazard prevention and mitigation are not systematically mainstreamed in the national and local planning process, because effective de-

velopment planning and control are constrained by a number of factors: lack of a land use policy, lack of technical and financial capacity in the key public sector line ministries, and conflicts in the existing legislation regarding the jurisdiction of various public sector agencies in permitting and regulating development, among others (Caribbean Disaster Emergency Response Agency and Caribbean Development Bank, 2006). The Physical Planning Section, for example, resides in the Lands and Surveys Department of the Ministry of Natural Resources and the Environment. It is a fledgling unit that is highly underresourced and currently has no qualified planning staff. There are also well-known examples of private sector development that are exacerbating disaster risk, indicating that the mechanisms in place to ensure that risk considerations are taken into account in planning processes have been ineffective in multiple instances.

Existing laws, regulations, standards, and guidelines governing risk reduction need to be strengthened and harmonized to facilitate the routine integration of disaster risk reduction in public sector administration. Progress in this area could also be achieved with effective enforcement and a greater level of public awareness of and education in ex ante risk reduction. The NEMO Secretariat also needs to adopt a more proactive and visible role in hazard prevention and mitigation.

Nevertheless, a number of best practices are being applied at the community level. For example, disaster risk is routinely considered as part of the approval process in the siting, design, and construction of small-scale social infrastructure projects that target poor communities in southern Belize and south Belize City.

Financial Protection and Risk Transfer

The government of Belize has not articulated a comprehensive national strategy for financing disaster risk. The country's laws do not require insurance for financed infrastructure and personal

⁶ Ideally, flood hazard data from monitoring stations would provide information on the extent and location of flood-prone areas; depth and duration of floods; velocity of water flow; rate of river rise; water level; and discharge, frequency, and timing of occurrence and rainfall.

⁷ LIDAR is light detection and ranging, a technique similar to radar. LIDAR uses laser light rather than radio waves to detect distance accurately. By combining green-wavelength and blue-wavelength lasers, an airborne platform can measure the difference in distance from the aircraft to the sea surface and to the sea floor, thus giving accurate measurements of the subsurface topography.

property beyond the duration of the financing period. In addition, the domestic insurance market appears to have minimal involvement in improving the general public's limited awareness of the existence and benefits of postmortgage risk coverage. It is estimated that 50 percent of the country's housing stock is underinsured and that the majority of low-income housing is either uninsured or uninsurable.

Belize's government, along with those of 15 other member countries of the Caribbean Community (CARICOM), participates in the Caribbean Catastrophe Risk Insurance Facility (CCRIF), established in 2007. Through risk pooling, the CCRIF provides catastrophe insurance (against hurricane and earthquake catastrophes) with low-cost pricing. Premiums are determined according to the estimated risk facing each country in order to minimize cross-subsidization. CCRIF insurance contracts are parametric, that is, payments in response to claims are based on the intensity (wind speed and earthquake intensity) of the event that triggers the claim.

Notwithstanding Belize's insurance through the CCRIF, alternative and more cost-effective instruments for financing disaster risk, such as budgetary provisions and contingent lines of credit, need to be considered.

Preparedness and Emergency Response

Following international support provided between 1999 and 2006, NEMO's capacity for emergency preparedness and response has improved significantly. Belize now has a relatively well-coordinated mechanism for disaster preparedness and response, with a modern national emergency operating center. It has active operational committees in the areas of education, information, communication and warning, medical care and public health, housing and shelter, search and rescue evacuation, restoration of utilities and access, damage assessment and needs analysis, foreign assistance, transportation, human resources management, and recovery. Through these committees, NEMO has been able to extend its reach across the country by mobilizing communities to action immediately before and after a disaster event. It has provided continuing support for training the staff in the NEMO Secretariat

as well as national- and district-level staff. The Secretariat also works with national media to promote preparedness and response. Still, multiple simultaneous emergencies challenge the country's response capacity, as was seen in the Corozal District in 2007, when a major fire in the Corozal Free Zone occurred shortly after the passage of Hurricane Felix (which also affected the district).

Recovery

As noted previously, following Hurricane Hattie in 1961, the Belize government adopted the Reconstruction and Development Corporation Act to facilitate the relocation of its main administrative center from its vulnerable location in Belize City to Belmopan, 80 kilometers inland. Following Hurricane Mitch, a satellite city was planned at Mile 31 on the country's Western Highway to relocate coastal residents. The momentum of these hazard mitigation initiatives has not been sustained, and the incorporation of hazard mitigation into the country's recovery process continues to pose a challenge, as political and social pressures are applied to return to normalcy in the shortest possible time after disaster events. Nevertheless, a project to improve drainage in Belize City, implemented following Hurricane Mitch, remains an important example of an initiative incorporating hazard mitigation into the recovery process.

The Private Sector and Disaster Risk Management

Following Hurricane Iris in 2001, the Association of Professional Engineers of Belize (APEB) produced a technical publication highlighting the deficiencies in the country's building industry and recommending corrective measures (APEB 2002). More recently, APEB and the Association of National Architects have taken a leadership role in developing a draft national building code for the country, in collaboration with the Ministry of Housing and Urban Development. Apart from this, private sector involvement in disaster risk management has been most significant in emergency preparedness and response. NEMO has recognized the need to engage with the private sector, including financial institutions, insurance companies, and private utilities, in ex ante risk reduction; however, this engagement has received a

low priority in the absence of NEMO staff with the requisite technical skills in risk reduction.

Regional and International Linkages

Belize is a member of the Caribbean Disaster Emergency Management Agency (CDEMA, formerly the Caribbean Disaster Emergency Response Agency, CDERA) and has endorsed the Enhanced Comprehensive Disaster Management (CDM) Strategy and Programming Framework, 2007–2012. The objective of CDM is to strengthen national and community-level capacity for mitigation, preparedness, and coordinated response to and recovery from natural and technological hazards and the effects of climate change.

NEMO maintains a close working relationship with the CDEMA Secretariat, as well as with national disaster offices in CARICOM's other 15 member states. Belize has observer status in the Central American Coordination Center for Disaster Prevention (CEPREDENAC) and is part of the Regional Mechanism for Mutual Assistance in Disaster Management of the Central America Integration System (SICA) and CEPREDENAC.

Belize maintains a number of commitments under international law as a signatory to various treaties: the Hyogo Framework for Action, the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change and its Kyoto Protocol, the United Nations Convention to Combat Desertification, the Conventions on International Trade in Endangered Species, the Basel Convention (hazardous wastes), the United Nations Convention on the Law of the Sea, the Montreal Protocol (ozone layer protection), the International Convention for the Prevention of Pollution from Ships, and the Ramsar Convention (wetlands).

9.4 Challenges

Despite the important steps that the government of Belize has taken to implement a more comprehensive approach to the management of disaster risk, Belize faces many challenges for achieving sustained disaster risk reduction in the context

of a changing climate. In general, various factors hamper NEMO's ability to lead the national effort to implement Comprehensive Disaster Management. Thus preparedness and response remain the main focus of the national disaster risk management system, and the more cost-effective approaches of prevention and mitigation are minimally applied in public sector administration.

9.4.1 NEMO's Capacity for Comprehensive Disaster Management

Belize's main challenge in regard to management of disaster risk is to reorient its public sector to strengthen NEMO's capacity to fulfill the broader mandate of Comprehensive Disaster Management, including adaptive capacity to climate change. Currently public and private sector agencies and civil society in the country lack institutional capacity for disaster risk management. Critically, there is scope for greater collaboration and coordination between the NEMO Secretariat and the key economic sectors with a high vulnerability to natural hazards and disasters (tourism, agriculture, transport), and between the NEMO Secretariat and the Ministry of Natural Resources and the Environment, including the Land Information Center, the Central Building Authority, the National Meteorological Service, the Ministry of Works, and the Ministry of Finance. Coordination between the NEMO Secretariat, the Central Building Authority, and the private sector in regard to safe construction should also be improved. Planning is currently centralized in the Lands and Surveys Unit within the Department of the Environment of the Ministry of Natural Resources and the Environment. Although NEMO has legal authority over the Department of the Environment's actions related to disaster risk management, lack of technical capacity prevents the NEMO Secretariat from exercising this authority. It is also critical that counterpart organizations in the private sector and in nongovernmental organizations maintain an effective link to public sector agencies so as to ensure harmony in the development, implementation, and monitoring of policies and regulations as they relate to disaster risk management activities.

In the medium to long term, the organization's capacity in ex ante risk reduction and in (natu-

ral disaster) financial risk management needs to be enhanced, taking into consideration climate variability and change, and prevention and mitigation need to be incorporated routinely into the core operations of public sector institutions. This will require (1) increased resource allocation for Comprehensive Disaster Management, including to facilitate greater investment in prevention and mitigation, among other things; (2) engagement of public sector institutions other than the NEMO Secretariat in ex ante disaster risk management; (3) interagency coordination based on the careful articulation of roles of all disaster risk management actors in the public and private sector and civil society; and (4) public education on NEMO's role and scope under its expanded mandate for Comprehensive Disaster Management. In the short term, NEMO's greatest challenge will continue to be the allocation of scarce resources to safeguard life and property, particularly in coastal settlements and flood-prone areas, through the provision of improved infrastructure and enhanced institutional capacity for disaster mitigation, preparedness, and response. The organization is also challenged in the management of psychological and socioeconomic impacts of individual disaster events as well as of simultaneous multiple-disaster events, as the experience with Hurricane Dean showed.

9.4.2 Disparities in the Legal and Regulatory Framework for Disaster Risk Management

Beginning in 1999, Belize's government adopted a number of policies and plans to better manage disaster risk. Although several of these initiatives promote integrated disaster risk management and development planning, they are not supported by a comprehensive national disaster risk management policy framework. In addition, overlaps, conflicts, and/or implicit treatment of disaster risk management in various pieces of legislation (involving disasters, planning, the environment, and natural resources) have resulted in varying interpretations and applications of the law related to disaster risk management. The government, through NEMO, is faced with the challenge of strengthening and harmonizing existing legislation to facilitate consistency with the principles of Comprehensive Disaster Management.

9.4.3 Availability and Use of Risk Information

A principal challenge is to improve information and education on risk (including climate change risk) to inform development decision making. Baseline data on hazards and disaster impacts in the country are severely lacking. There are no country-wide hazard maps and few vulnerability and risk maps. A major constraint has been the coarse resolution of available data on elevation, which has hampered hazard mapping and risk modeling, in particular, of flood events and storm surge damage. There is also no recognized national repository for disaster risk data and no national risk information platform, nor is there a mechanism for data sharing and dissemination. Where hazard databases do exist, they are often not used and/or not promoted as tools for risk mitigation and development planning. A lack of clarity of responsibilities under the law, limited capability for updating existing maps and risk mapping and modeling in general, poor maintenance, limited recognition of the need to promote the use of hazard data, and conflicting plans among government agencies for geographic information system capabilities represent major challenges for developing an effective risk identification and information platform that could inform national and sector planning. The Land Information Center is appropriately positioned to house a national risk information platform. The center will have to coordinate carefully with the NEMO Secretariat to achieve this objective.

9.4.4 The Needs of Vulnerable Groups

Vulnerability to natural hazards and disasters appears to be especially high in communities in southern Belize, where poverty levels are among the highest in the country and the population shows the greatest diversity. Disaster preparedness, response, and mitigation plans need to be enhanced to incorporate the specific needs of these vulnerable groups and appropriate resources allocated. These needs include alerts and awareness campaigns provided in the community's primary language, vulnerability and needs assessments that factor in the different priorities and customs of indigenous groups, and incorporation of these priorities and customs in national build-

ing standards.⁸ Decentralization of the disaster risk management function through the strengthening of communities in regard to disaster risk management is another major challenge.

9.4.5 Financial Protection and Risk Transfer

Through Belize's participation in the CCRIF, a source of immediate liquidity is available to the government in the aftermath of threshold disaster events caused by hurricanes and earthquakes. However, the CCRIF policy is likely to cover only a portion of the estimated government losses incurred as a result of an event of high intensity or magnitude. A challenge for the government in the short to medium term is to adopt a more comprehensive strategy for disaster risk financing that would lead to a reduction in disaster losses. This would involve the careful allocation of scarce public resources between investments in risk reduction (e.g., risk identification, preparedness/response, and mitigation) and financial products for risk retention (e.g., reserve funds and contingent lines of credit) and risk transfer (e.g., CCRIF, domestic casualty and property insurance). In the context of the CCRIF, an immediate challenge is to develop ex ante criteria for allocating resources once CCRIF payments are received. Much work also is required to sensitize and educate Belizeans on the various options for disaster risk coverage for personal property. Engaging the private sector is yet another challenge.

9.4.6 Sustainable Investment in Infrastructure

Because of Belize's low population density, infrastructure investment such as roads, electricity, and water has a high per capita cost compared with most countries in the region. The maintenance challenge is principally the responsibility of the Ministry of Works and local governments, which suffer from limited financial resources, insufficient equipment, high levels of equipment downtime, and a high staff turnover rate. In a pe-

riod of tight public expenditure restraint, routine maintenance of public infrastructure and buildings often takes a low priority. Furthermore, local governments' institutional and financial capacity is usually limited to the provision of basic services, such as solid waste disposal and traffic management, and they generally cannot undertake significant routine maintenance for public infrastructure. Without such routine maintenance, however, the sustainability of (post-Hurricanes Mitch and Keith) investments in hurricane preparedness and mitigation is at risk, thus presenting increased challenges for disaster preparedness in the future.

9.4.7 Adaptation to Climate Change

As noted previously, the changing climate is already altering many of the characteristics of the natural hazards that Belize faces. Higher temperatures and changing precipitation patterns are affecting drought, flood, and disease hazards. Stronger hurricanes that develop quickly and travel across the Caribbean Sea at higher speeds are reducing the early warning times available to the population. These threaten to make landfall with higher wind speeds and longer duration than previously experienced.

Climate change not only affects Belize's existing disaster risk, but also introduces new threats. The country is most vulnerable to rises in sea levels, which will exacerbate storm surge damage, coastal erosion, flooding, and salinity problems. New hazards such as coral bleaching will affect fish stocks and tourism potential; new pests such as pine beetles or aedes mosquitoes may spread disease and affect agricultural and human health. Water resources, agriculture, and coastal areas face the biggest challenges.

Disaster risk management and climate change adaptation need to be addressed in a synergistic manner at the level of development policy and practice. This includes the integration of the policy and legislative frameworks for Com-

⁸ Consultation and the adaptation of appropriate yet affordable technology are critical in disaster mitigation efforts where housing is concerned. It is also apparent that provision for this specific need is not incorporated in the draft building code prepared by the Central Building Authority. For instance, reconstruction and rehabilitation efforts following Hurricane Iris in 2001 failed to identify and incorporate adequately the priorities of the indigenous Maya population, who valued maize storage sites more than their own dwellings. This led them to use the more wind-resistant concrete structures constructed post-Iris in Maya communities for crop storage and adopt a "rebuilding is cheaper than reinforcing" philosophy toward their own thatched roof dwellings.

prehensive Disaster Management and climate change adaptation, the design and implementation of integrated disaster risk management and climate change adaptation programs at the national and sectoral levels, the facilitation of greater interagency coordination, and the strengthening NEMO's capacity in climate change adaptation.

9.4.8 The Special Case of Belize City

Belize's government has only partially implemented its initial strategy to move its main administrative center, and with it critical assets, away from the highly vulnerable coastal area of Belize City. It is now challenged to maintain a balance between continued implementation of the strategy and recognition of the important role of Belize City in the country's economic development. The challenge in the medium to long term will therefore be to continue to facilitate the expansion of Belmopan, as well as other centers located in less hazardous areas, by encouraging commercial development in these locations. Public investment planning in these areas should incorporate disaster risk management and climate change adaptation, particularly prevention and mitigation, as a consideration. In the short term, the challenge is to continue to reduce the vulnerability of population and infrastructure that remain exposed in Belize City. This may be achieved through implementation of proactive initiatives for reducing risk, including the routine screening of infrastructure projects for hazard and environmental risk, flood-level monitoring, enhancement and maintenance of drainage infrastructure, strengthening of buildings against multiple hazards, and evacuation planning. Effective disaster risk management in Belize City also requires closer interagency collaboration and coordination. Currently there is uncertainty regarding responsibility for flood data collection and monitoring, though it is apparent that the Belize City Council has very limited capacity to perform this function effectively. The relationship between the Belize City Council and the country's central government has been strained, largely as a result of political differences, adversely affecting general administrative capacity. The city and Belize in general could also benefit from closer collaboration with the Caribbean Community Climate Change Centre.

9.5 Policy Recommendations

This chapter's overarching recommendation in regard to disaster risk management in Belize is that the country develop and implement an integrated disaster risk management policy and planning framework, to facilitate a transformation in the delivery of disaster risk management services to the Belizean public. This policy and planning framework should be based on the principles of Comprehensive Disaster Management, promoting proactive disaster risk management. This would improve disaster risk management practices and lead to a reduction in damage and losses resulting from natural hazards and disasters. To this end, a number of lines of action are proposed, as described in the following subsections.

9.5.1 Improve Disaster Risk Information

Information on disaster risks could be improved through developing a national risk information platform in Belize and mainstreaming it into the country's sectoral planning. The platform would provide the essential baseline data, maps, tools, and equipment for risk evaluation, simulation, analysis, updating, and monitoring. It would require (1) the development of indicators of disaster risk and risk management for Belize that can be used to monitor national performance in disaster risk management; (2) an evaluation of country risk, including climate risk, that would provide a detailed assessment of the geographic areas and key sectors at risk, the factors that contribute to vulnerability, probable maximum losses, and economic impacts; (3) the identification and resourcing of a national facility for risk evaluation; (4) the development of applications of risk management in key sectors (emergency management, planning, tourism, agriculture); (5) enhancement of capacity in risk evaluation for sectoral staff; and (6) the design and implementation of a public education strategy on disaster risk. The platform and associated tools could be used to identify and inform strategies for strengthening risk management, and to provide the financial evidence to justify resource allocations in disaster management budgets. The Land Information Center is a potential site for such a national risk information platform.

9.5.2 Strengthen the Legislative and Regulatory Frameworks

Existing legislation related to disaster risk management and climate change adaptation should be reviewed with a view toward harmonization, to facilitate the strengthening of the NEMO system and the mainstreaming of disaster risk management and climate change adaptation in national and sectoral planning. As part of this process, it is recommended that Belize's government (1) develop a land use policy and legislation for the operation of the National Meteorological Service; (2) upgrade planning legislation to require routine integration of disaster risk management into the national development project cycle; (3) allocate more resources to the Physical Planning Section, to allow it to perform its function more effectively; and (4) adopt and administer the draft national building code.

9.5.3 Strengthen Institutional Capacity and Coordination

Institutional capacity for disaster risk management within NEMO, focusing on prevention and mitigation and financial risk management, should be strengthened, with specific emphasis on key economic sectors, namely, tourism, natural resources and the environment, and agriculture, as well as the NEMO Secretariat and the Belize City Council. Areas of focus should include hazard and risk mapping; mitigation of flood impacts; climate change awareness and adaptation, including the application of agricultural insurance schemes to deal with climate variability and change, and of climate change projections in long-term sector development plans; building codes and increased capacity to enforce them; flood mitigation and drainage system maintenance; and community approaches to raise awareness and build resilience, including involvement of indigenous groups. Participation of civil society and the private sector in disaster risk management should also be enhanced. Any institutional strengthening activity should be guided by a needs analysis resulting from an organizational review.

9.5.4 Identify Options for Disaster Risk Financing

A comprehensive disaster risk financing strategy should be developed as part of the integrated di-

saster risk management framework. This would include the design and implementation of a combination of financial instruments for reducing the cost of disaster risk to within budget limits, including investments in risk reduction and financial products for risk retention, removal, and transfer. Institutional strengthening of the Ministry of Finance and Planning in financial risk management should be a part of this effort. The private insurance industry should also be more proactively involved in educating the general public about disaster risk as well as in the development of insurance products, including those targeting lower-income clients and small commercial enterprises.

9.5.5 Support Transition from Belize City to Belmopan for Vulnerability Reduction

A strategy for transitioning of the main population center away from Belize City to Belmopan should be developed. This necessarily long-term, gradual process should not be disruptive and would be cognizant of the high level of investment already made in Belize City. However, Belmopan appears to be growing at a relatively rapid rate, boosted by the transfer of an increasing number of embassies and government agencies to the city. Continued growth and the expansion of services and amenities would make it more attractive to live in the city, particularly for public officials. The Belize government should continue to facilitate Belmopan's growth and base its urban planning on a larger population for the city. (Brazil's experience with Brasilia may be a useful reference.) Given that 30 percent of the country's population still lives in Belize City, investments there in the near term should not cease but must incorporate risk reduction measures such as enhanced drainage and improved capacity for maintenance, early warning, and evacuation.

9.5.6 Strategic Partnership with the Caribbean Community Climate Change Centre

The government should develop a strategic partnership with the Caribbean Community Climate Change Centre, to benefit from its expertise and international outreach. Areas of collaboration could include hazard mapping, risk assessment,

and resource monitoring; LIDAR bathymetry mapping of Belize's coastline, which would support both the monitoring of rises in sea level and provide the necessary data for storm surge mod-

eling; and the integration of climate projections into risk assessments in support of planning, in the agricultural sector and to develop climate-related crop insurance, among others.

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Towards Environmentally Sustainable Development

10.1 Introduction

Belize's difficulty in placing sufficient weight on the future is a recurring theme of this book. This difficulty is reflected in several economic dimensions, such as the low national saving rate, which has underlain the binding constraint on economic growth discussed in earlier chapters and reflects a prioritization of consumption today over gains tomorrow. Similarly, and closely related, is the country's high level of public debt, which reflects consumption and investment brought forward from the future. Adequately valuing the future is also key to environmental sustainability.

The Belize Barrier Reef, the greatest water availability per capita in Latin America, and the presence of vast tropical forests covering more than half of its territory testify to Belize's natural resource wealth and biodiversity. These characteristics have given rise to an export economy centered on tourism and natural resources (from petroleum to marine products). At the same time, a substantial part of the population depends heavily on fisheries and traditional agriculture.

To date, Belize has taken strategic steps to preserve its natural resources and use them in a sustainable way. This goal has had its practical realization in the creation of the National Protected Areas System, as well as in several pieces of legislation. However, even with protected areas and legislative bills, Belize's environmental assets are not free from peril, nor is their enduring existence guaranteed. Environmental degradation is on the rise, and different forms of economic activity pose undeniable threats to the delicate balance that sustains ecosystems.

Belize must now continue to advance its sustainability agenda, building on the gains made to date and with a view towards ensuring a balance between present needs and those of future generations. This chapter reviews the principal environmental challenges facing Belize and the government's extensive efforts to address them. It then identifies gaps in the country's environmental governance and advances some policy options and recommendations.

10.2 Principal Environmental Sustainability Challenges

This section consists of the diagnosis of the main environmental challenges in Belize, including management of land use, forests and biodiversity, coastal resources and fisheries, water resources, solid waste, sanitation and liquid waste, and emissions and air pollution.¹ After a small summary assessment of sustainability, an analysis of the relationship between environment and growth is presented.

¹ The topic of climate change is addressed in Chapter 9.

10.2.1 Land Use

Belize's small population, as well as its history and geography, including trends in infrastructure development, make the pattern of land use in Belize very different from that in most of its neighbors, both in Central America and the Caribbean. While in both Central America and the Caribbean, agricultural land comprises 50 percent of the total territory, in Belize land devoted to crops and livestock accounts for only 6.6 percent of total land. Of the territory used for agriculture, 46 percent is arable land, 21 percent permanent crops, and 33 percent permanent pastures (FAOSTAT 2007). Similarly, in the case of forests, while 34.4 percent of Central American territory is covered by forest, in Belize 72 percent of the territory is forested. The rest of the territory (i.e., that not covered by forest or devoted to agriculture, 21 percent) is dedicated to other uses, mainly human settlements and tourist developments.

A land resource assessment study cited by the Belize Forest Department (2004, 15) categorized land use in the country as follows: approximately 16 percent of Belize's territory can be classified as soils suitable for agricultural development; approximately 20 percent can be classified as soils that could produce sustainably, based on their edaphic characteristics, but require high levels of input and management; approximately 14 percent

of forests in the national territory are suitable for sustainable forest production; the rest of the territory should remain under protection.

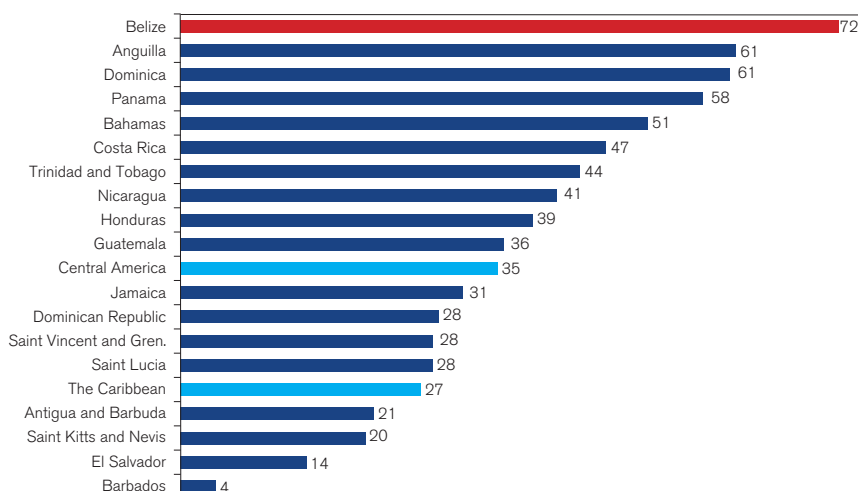
Currently, the principal environmental land use concerns are competing and conflicting land use and the increasing conversion of coastal ecosystems for tourism and residential developments. No comprehensive land use policy exists at the national level to select and put into practice those land uses that will best meet the needs of the people while safeguarding resources for the future. However, several projects have been developed at the national and subnational level, in conjunction with international cooperation, to achieve sustainable use and proper management of land resources.

10.2.2 Forests and Biodiversity

Belize has the highest forest cover in both Central America and the Caribbean (see Figure 10.1): 72 percent of Belize is forested, of which 37 percentage points are classified as primary forest (FAOSTAT 2007).

Forests have played an important role in the development of Belize since colonial days, with the extraction first of logwood and then of mahogany. Forestry was the most important economic activity in Belize until the middle of the twentieth century, but its importance has declined,

FIGURE 10.1. FOREST COVER IN CENTRAL AMERICA AND THE CARIBBEAN, 2007
(percentage of land)



Source: Author compilation based on data from FAOSTAT.

and currently, the gross value added by forestry and logging is just 0.7 percent of gross domestic product (GDP) (Statistical Institute of Belize 2009).²

Deforestation is one of Belize's major environmental issues. The Belize Audubon Society, a nongovernmental organization with a long-standing commitment to environmental issues in the country, stated that the country's "forested areas continue to diminish at an alarming rate" (2008, 35). FAO reports cited by Young (2008) and Medlin (2008) suggest that during the 1990s Belize lost an average of 2.3 percent of its forest cover each year, giving it the third-highest rate of forest loss in Central America.³

Various authors attribute deforestation in Belize over the last five decades to the development of large-scale agriculture (citrus, bananas, sugarcane) and, more recently, to the growth of large-scale aquaculture coupled with rapid and increasing coastal development, illegal logging and encroachment in reserves, bush fires, and slash-and-burn agriculture. One of the main issues in the ongoing Belizean-Guatemalan territorial dispute⁴ is the illegal logging and harvesting of forest products by Guatemalans.

As a result of its tropical position in the transition zone between two continents and its proximity to the Mesoamerican Barrier Reef System (MBRS), Belize is rich in terms of biodiversity. According to the Biodiversity & Environmental Resource Data System of Belize, the country hosts more than 150 species of mammals, 540 species of birds, 151 species of amphibians and reptiles, nearly 600 species of freshwater and marine fishes, untold numbers of invertebrates, and 3,408 species of vascular plants. The Belize Barrier Reef, which extends for 230 kilometers along the entire length of the country, has been declared a World Heritage Site because of its globally significant biodiversity.

Belize has a lower number of threatened species than any other country in the isthmus. Accord-

ing to the International Union for Conservation of Nature's Red List of threatened species (2009), there are 89 threatened species in Belize, of which 7 are mammals, 4 birds, 5 reptiles, 6 amphibians, 25 fishes, and 30 plants.

10.2.3 Coastal Resources and Fisheries

Belize is also rich in terms of coastal resources, which comprise coral reefs, sea grass beds (which help support fisheries and prevent erosion), mangroves (which shelter land and provide nursery areas), estuaries, shallow inshore coastal environments, and offshore atolls.

The Belize Barrier Reef is one of the country's most important assets. It is part of the MBRS, which extends from the southern half of the Yucatan Peninsula to the Bay Islands of Honduras and is the second-longest reef in the world. Belize's coral reefs and mangrove-lined coasts have supported artisanal fishing communities for generations and are the basis of a vibrant tourism industry. Moreover, they provide critical protection against erosion and wave-induced damage from tropical storms.

According to a recent World Resources Institute paper (Cooper, Burke, and Bood 2009), tourism associated with the coral reef and mangroves accounted for an estimated 12–15 percent of GDP in 2007, annual economic benefits from reef- and mangrove-dependent fisheries represent an estimated US\$14–16 million, and protection provided by reefs and mangroves to coastal properties from erosion and wave-induced damages amount to an estimated US\$231–347 million in avoided damages per year. As the authors make clear, these estimates capture only three of the many services provided by coral reefs and mangroves and should not be considered the total value of these resources.

Despite its importance for the development of tourism and for the country's fisheries (see below), Belize's coastal zone is threatened by

² Much logging that takes place in Belize is illegal and therefore underreported in the national accounts.

³ In contrast, FAO's database reports no significant change in forest cover between 1995 and 2010.

⁴ Guatemalans have claimed Belize's territory as theirs since before Belize's independence in 1981. Even after a number of years of official recognition, Guatemalan squatters continue to settle in the largely uninhabited rain forests of Belize's border region.

overexploitation and degradation of resources from both of these industries. Climate change is also one of the major threats to the Barrier Reef, which has increasingly suffered from coral bleaching and disease since 1995 (Belize Audobon Society 2008). Other major disturbances also affect coastal resources, such as habitat alteration (including mangrove clearing) caused by coastal development, nutrient enrichment from agricultural runoff, erosion of the shoreline as a result of removal of mangroves and sea grass during land filling, sewage pollution, and smothering of corals by siltation resulting from dredging for coastal filling and sand mining (Belize Audobon Society 2008).

Fishing is a significant cultural tradition in Belize as well as a livelihood for many coastal inhabitants. It also provides a safety net: Belizeans rely on it when difficulties arise in other productive activities. In fact, the number of fishing licenses granted in recent years has grown considerably as a result of problems in activities associated with various agricultural products, like sugarcane in the north.

Fisheries in Belize are threatened by overfishing as well as by the loss of healthy coral reef and mangrove habitat. However, Belize has fairly

strong fisheries regulations, including size limits and closed seasons for the most heavily exploited species. In fact, the decline in fisheries production in Belize since 2002, as shown in Figure 10.2, could be partly explained by the establishment of cautious catch quotas.⁵ In addition, no-fishing zones in some marine protected areas also help by serving as replenishment areas (Cooper, Burke, and Bood, 2009).

In contrast to capture fishery production, aquaculture in Belize has been expanding in volume and value (Figure 10.2). Aquaculture is one of the largest consumers of freshwater resources in the country.

10.2.4 Water Resources

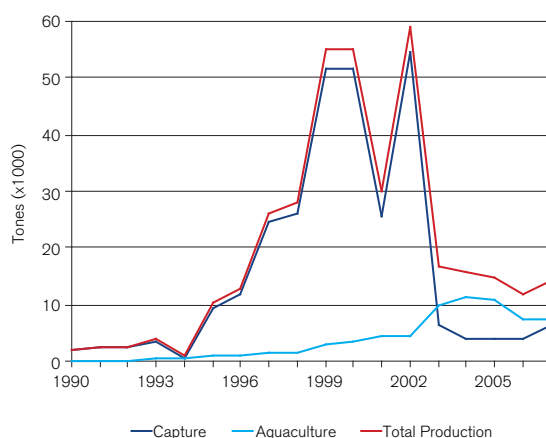
Belize has the greatest availability of water in Latin America and the Caribbean, approximately 52,633 cubic meters per person (World Bank 2006). The main sources of water for human consumption are surface water (some 18 major watersheds) and an undetermined volume of groundwater resources.

Belize consumes only 0.9 percent of its available water resources annually. Industry is the major water consumer, accounting for 73 percent of total freshwater withdrawal, while agriculture consumes 20 percent and households 7 percent (World Bank 2006).

The quality, quantity, and viability of a country's water resources are highly related to its land use practices. Belizean legislation protects a 66-foot riparian buffer zone along all water bodies, but according to the Belize Audobon Society (2008), the law is not enforced. Although there is a limited system for evaluating and monitoring water quality, it is estimated that a large part of the superficial water in urban areas is polluted because of inadequate disposal of liquid and solid wastes (Belize Audobon Society 2008).

Even though the country's water situation is not critical at present, institutional changes are need-

FIGURE 10.2. EVOLUTION OF FISHERIES AND AQUACULTURE PRODUCTION (1990-2007)

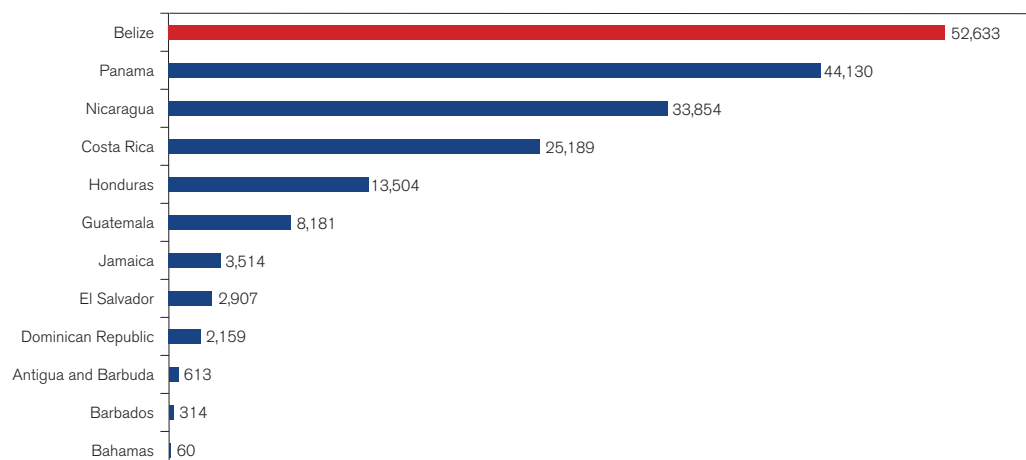


Source: Author compilation based on data from FAOSTAT.

⁵ According to the Ministry of Agriculture and Fisheries (2004), Belize was placed on the Category (ii) list of countries, which focuses on "species of possible concern by the Convention for the regulation of International Trade in Endangered Species (CITES)." Other reasons that may explain the decline are merely statistical; since some fishermen sell fish directly to tourists, fishing cooperatives are unable to include that production in their accounting.

FIGURE 10.3. RENEWABLE INTERNAL FRESHWATER RESOURCES, 2006

(cubic meters per capita)



Source: Author compilation based on data from World Bank, *World Development Indicators*.

ed to avert a water governance crisis. In 2000, the Food and Agriculture Organization identified the lack of a unique authority responsible for water resources as the major barrier for the development and protection of water resources in Belize. In fact, not only does Belize not have any supervisory institution for its water resources, it has not ratified a national water policy or passed the 2006 water laws. What is more, an assessment conducted by the National Pro Tempore Water Commission in 2006 indicated that the country's current system of water resources management is incoherent and fragmented and does not provide for the planned allocation, sustainable development, and adequate protection of Belize's water resources (cited in Belize Audobon Society 2008).

10.2.5 Solid Waste Management

Daily solid waste production in Belize from household and commercial establishments is approximately 1.1 kilogram per capita, amounting to almost 200,000 metric tons annually (Medlin 2008). The solid waste problem is especially acute in urban areas, such as Belize City, San Ignacio/Santa Elena, and San Pedro. In addition, the rate of solid waste generation is increasing at a rapid pace as population and tourist flows grow. In fact, waste generation projections for Belize's western corridor indicate that domestic solid waste is expected to increase by 70 percent by 2023 (IDB 2008).

While the amount of garbage generation per capita is low for the region, the inability to properly dispose of the waste produced poses a serious environmental threat to the country. Existing landfills in the country are inadequate for the country's solid waste disposal needs. The construction of a new facility for the disposal of waste in a central location (Mile 24 on the country's Western Highway) with favorable environmental conditions should help address this inadequacy.

In addition to being insufficient, the existing facilities provide little in the way of environmental protection. The country's biggest landfill, at Mile 3, is an open dump located in an unsuitable, low-lying mangrove area, and none of the landfills in the country are properly sealed to prevent the leaching of pollutants into groundwater. Furthermore, management practices at the disposal sites are inadequate, and a large amount of industrial waste ends up in the country's landfills. Moreover, solid wastes in landfills are frequently burned, a practice that is environmentally harmful with serious health implications.

Solid waste is also currently being disposed of outside of dumps, in backyards or by illegally dumping along roadsides, in empty lots, along seashores, on riverbanks, and in other environmentally sensitive areas. Other waste disposal issues are insufficient waste collection services and nonexistent waste separation and recycling programs, which exacerbate the main issues discussed above.

Hazardous waste disposal is another issue in Belize. Recent news reports⁶ have indicated that hazardous waste can be found in regular garbage, giving rise to concerns about it.

10.2.6 Sanitation and Liquid Waste Management

Inadequate liquid waste (wastewater and sewage) management is also contributing to natural resource degradation in Belize and posing a very serious public health hazard. Adequate sanitation (sewers/septic tanks) stands at 64 percent coverage countrywide. While 85 percent of the urban population has access to improved sanitation, only 40 percent of the rural population does so (Ministry of Health 2009).

Currently, only three population centers in the country have sewage treatment facilities (Belize City, Belmopan, and San Pedro), though many large developments, particularly in high-tourism areas, have small-scale treatment plants. Even in the three municipalities with sewage treatment facilities, a large portion of the urban population still relies on septic tanks. The rural population relies on pit latrines and septic systems, with the latter becoming more prevalent, as statistics show. In some areas, sewage disposal is still directly into open canals, though this practice is now very limited.

Though the disposal of waste liquids in open waterways causes obvious damage, there are also problems with the use of septic systems. Septic tanks remove only solids and discharge an effluent with a high microorganism count. When released into the environment, this effluent can contaminate groundwater and waterways such as rivers, streams, and canals. In coastal areas, septic effluent passed into the sea in large quantities poses a real threat to the marine ecosystem and the Barrier Reef System.

The large number of cruise tourists who visit the country annually further exacerbates the liquid waste issue. The country lacks an appropriate infrastructure (e.g., liquid waste facilities) and monitoring and enforcement capacity to deal

with liquid waste resulting from the cruise tourism industry.

10.2.7 Emissions and Air Pollution

Perhaps unsurprisingly, given its low population density, air pollution is one the least problematic issues for environmental sustainability in Belize. The country has very little urban air pollution, largely as a result of the relative lack of motor vehicle emissions. Emissions of particulate matter (a mixture of solid particles and liquid droplets, specifically, those with a diameter of 10 micrometers, or PM10), a common air quality indicator, have been decreasing constantly in recent years, from 24 micrograms per cubic meter in 1990 to 15 in 2006. In fact, Belize has one the lowest levels of PM10 concentration in the region, and its annual average is well below both those in Latin American and the Caribbean (33 micrograms per cubic meter) and lower-middle-income countries (69 micrograms per cubic meter) (World Bank 2005).

The country's consumption of ozone-depleting substances has also decreased significantly, from 22.3 metric tons in 1995 to 2.2 metric tons in 2007. Belize is thus fulfilling its international commitments in regard to the phasing out of ozone-depleting substances (Montreal Protocol) and therefore in regard to the recovery of the ozone layer (UNStats 2007).

However, the picture with respect to carbon emissions is more mixed. Belize's carbon footprint and the carbon intensity of its growth have been rising rapidly (World Bank 2010). Between 1990 and 2005 the total CO₂ emissions growth rate in Belize was 162 percent, compared to 33.4 percent in Latin America and the Caribbean and 93.5 percent in lower-middle-income countries. Furthermore, the country's carbon footprint, as measured by per capita CO₂ emissions, tripled from 1 metric ton in 1996 to 3 metric tons in 2006 and is now equal to the lower-middle-income countries average and above that of some of its neighbor countries, such as Costa Rica and Panama, as well as above the Latin American and Caribbean average (2 metric tons).

⁶ See, for example, "Hazardous Waste Found amongst Regular Garbage," News 5, February 12, 2010. Available at <http://edition.channell5belize.com/?p=28164>.

For reasons that are unclear, the carbon intensity of economic output in Belize, measured by metric tons of CO₂ emitted per million of GDP (2005 dollars at international purchasing-power parity), has also increased, from 393.8 in 1990 to 447.8 in 2005 (World Resources Institute, n.d.). It is now equal to the Latin American and Caribbean average but still below that in lower-middle-income countries (World Bank 2005).

The carbon intensity of growth is one of many indicators used to relate a country's environment to its economic performance. The next section explores the relationship between environmental sustainability and growth.

10.2.8 Environmental Sustainability and Growth

According to Dasgupta and Mäler (2001, 21), the idea of sustainable development is that “relative to their respective demographic bases, each generation should bequeath to its successor at least as large a productive base as it had inherited from its predecessor. If it were to do so, the economic possibilities facing the successor would be no worse than those it faced when inheriting productive assets from its predecessor.”

As analyzed above, Belize has managed to preserve valuable natural resources and currently is in a very advantageous position in terms of forests and freshwater. At the same time, according to Chapter 1, Belize's long-term growth performance has been comparatively good. Given this evidence, one would think that Belize is on a sustainable development path. However, it is worth stopping to evaluate this assumption carefully.

Traditional national accounts fail to measure the sustainability of Belize's actual development path. For example, Belize is attracting cruise ships to its shores, building tourism facilities, and drilling for oil, all of which is reflected as economic activity in the national accounts. However, the negative en-

vironmental consequences of economic activities (e.g., barrier reef deterioration and groundwater pollution) and the depletion of nonrenewable natural resources (e.g., petroleum) are not reflected there.

To address this issue, the World Bank has developed a sustainability indicator, “adjusted net savings,” also known as “genuine savings,” that measures the “true” rate of saving in an economy after taking into account investments in human capital, depletion of natural resources, and damage caused by pollution.⁷ Positive and non-declining adjusted net savings rates imply that a country has saved at least enough to overcome the deterioration of its capital base resulting from resource use and associated damage. By contrast, negative adjusted net savings rates imply that a country's total wealth is in decline. The difference between gross national savings and adjusted net savings can be used as a proxy for environmental costs, and countries that plan to grow today and protect the environment tomorrow will be identified by their depressed (or even negative) rates of adjusted net savings (CLACDS, 2005).

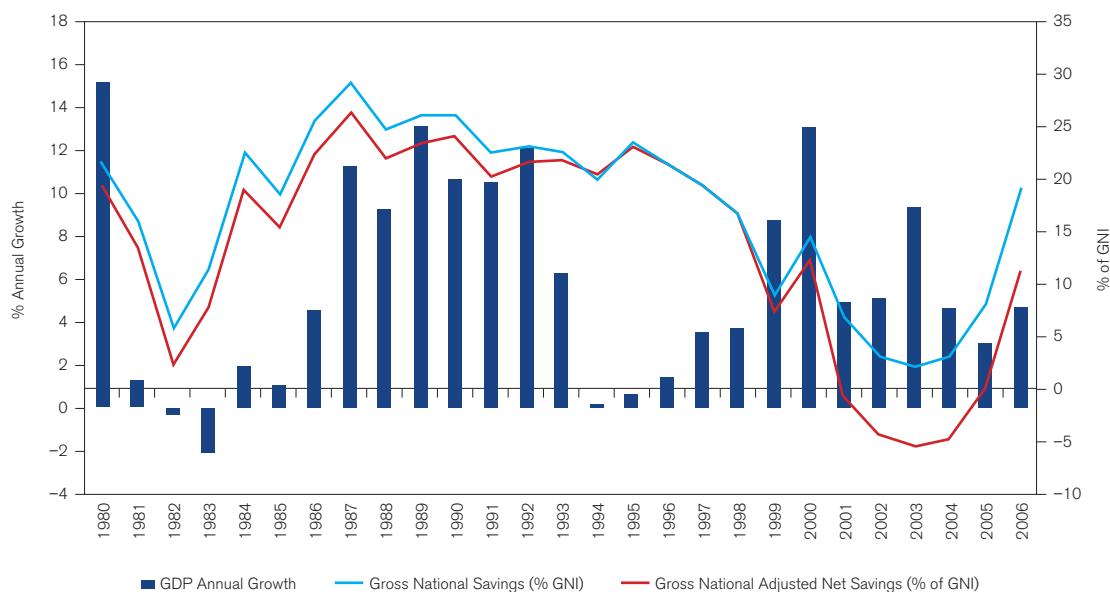
Belize has historically had a positive and respectable rate of adjusted national savings (Figure 10.4). However, Belize's annual net savings rate collapsed after 2000 and was negative between 2001 and 2005. The collapse after 2000 reflects both a collapse in gross national savings (Chapters 1 and 2) and a widening gap as well between gross national savings and adjusted net savings, primarily arising from an increase in capital consumption from a range of 5–8 percent of gross national income prior to 2001 to 12 percent after 2001. The commencement of crude oil production in Belize in 2006 implies that the wedge between gross national savings and adjusted net savings in the country is unlikely to return to zero, as it was prior to 2000.

Natural-resource-based economies like Belize are most at risk of being flattered by respectable rates

⁷ Adjusted net savings are derived from standard national accounting measures of gross national savings by making four types of adjustments. First, estimates of capital consumption of produced assets are deducted to obtain net national savings. Then, current expenditures on education are added to net domestic savings as an appropriate value of investments in human capital (in standard national accounting, these expenditures are treated as consumption). Next, estimates of the depletion of a variety of natural resources (including forests, energy resources, and minerals) are deducted to reflect the decline in asset values associated with their extraction and harvest. These estimates are based on the calculation of resource rents, which are derived by taking the difference between world prices and the average unit extraction or harvest costs (including a “normal” return on capital). Finally, pollution damages are deducted.

FIGURE 10.4. EVOLUTION OF GROSS NATIONAL SAVINGS AND ADJUSTED NET SAVINGS, 1980-2006

(percentage of gross national income and GDP growth)



Source: Author compilation based on data from World Bank.

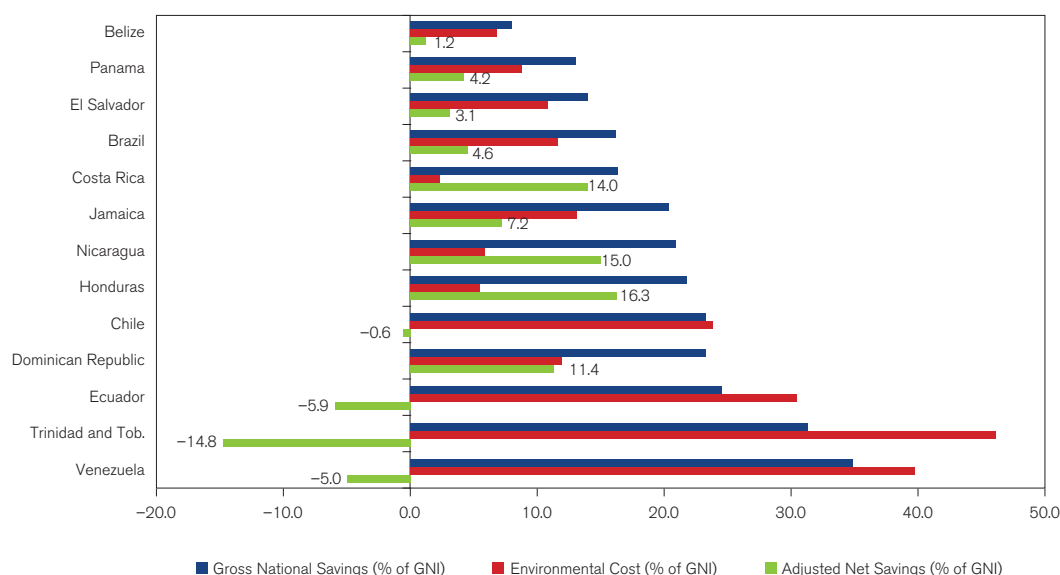
Note: GNI = gross national income.

of gross national savings that mask an unsustainable development path (Figure 10.5). The largest divergences between gross national savings and adjusted net savings, reflecting environmental depletion, are in oil-producing countries, followed by those in mineral-producing countries. Ven-

ezuela, Trinidad and Tobago, and Ecuador have the highest average gross national savings rates in Latin America and the Caribbean but have negative adjusted net savings rates. As noted above, Belize's gross national savings were unusually depressed between 2000 and 2006 and have returned

FIGURE 10.5. AVERAGE GROSS NATIONAL SAVINGS, ADJUSTED NET SAVINGS, AND ENVIRONMENTAL COST, SELECTED LATIN AMERICAN AND CARIBBEAN COUNTRIES, 2000-2006

(percentage of gross national income)



Source: Author compilation based on data from World Bank.

Note: GNI = gross national income.

to a more normal level since 2006. However, the increasing role of petroleum in the economy implies that the country's environmental costs have also risen since then.

As shown in Figure 10.5, some countries have better performance in terms of gross national savings than others and thus appear to be able to provide better futures for their people. However, when environmental variables are introduced, the panorama changes.

The main policy implication arising from this analysis is that intergenerational considerations should be taken into account when extracting nonrenewable natural resources. In other words, countries should invest at least some of the value of the resources extracted in other assets to ensure that once the resource is depleted, there is something left to ensure welfare for both present and future generations. The investment can be either in financial assets (as has been done in, for example, Norway) or in assets that can be used for future generations (as in, for example, the Canadian province of Alberta). Given Belize's institutional and financial conditions, a good option for the country would be the repayment of its debt.

10.3 Environmental Governance and Government Reform Efforts

Belize has taken significant strides to protect the environment. It has signed numerous international environmental agreements, passed a significant body of domestic legislation, and set aside a large proportion of the country in protected areas. However, implementation of international and national legislation has lagged. In this section, Belize's environmental legal framework and institutional structure is described and government efforts in regard both to public policy and to conservation are analyzed.

10.3.1 Multilateral Environmental Agreements

Belize participates in a number of multilateral environmental agreements (see Table 10.1). In addition, at the regional level, Belize is part of both Caribbean and Central American integra-

tion systems. In the case of the Central America Integration System (SICA), through the system's environmental arm, the Central American Commission for the Environment and Development, there is a focus on streamlining and harmonizing key environmental laws, particularly those related to environmental impact assessments.

10.3.2 Legal Framework

Belize has a significant number of regulations and laws (more than 30 environmental acts) related to natural resources management and conservation. These laws and regulations are very diverse: there are comprehensive acts that reinforce the country's environmental governance system as well as regulations for almost all productive activities (agriculture, fisheries, and mining) and resources (coastal, land, wildlife).

The Environmental Protection Act (EPA), passed in 1992, is the foundation for Belize's environmental governance. It establishes the Department of the Environment and empowers it with various functions and dictates guidelines for the prevention and control of environmental pollution, as well as for the investigation of "environmental crimes," along with the procedures for investigation of such crimes and general penalties for those convicted of committing them. The EPA was amended in 2009 (see below).

The EPA also requires an Environmental Impact Assessment (EIA) for any project or activity that may have a significant impact on the environment, as set forth in the Environmental Impact Assessment Regulations of 1995. A full EIA must be conducted for projects like oil drilling, manufacturing of pharmaceuticals, and construction of national highways. Other projects, like large-scale housing and resort and recreational developments, may also require an EIA, depending on their size and location.

10.3.3 Government Environmental Policy Reform Efforts

Besides the enactment of the Environmental Protection Act, Belize has worked in the development of a wide variety of legislation to address its main environmental challenges. Currently, there are a number of policies (partially implemented,

TABLE 10.1. MULTILATERAL ENVIRONMENTAL AGREEMENTS TO WHICH BELIZE IS A PARTY

Agreement	Year of signature and year Belize became party to the agreement	
Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar Convention), 1971	Signature	N.A.
	Party	1998
Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972	Signature	N.A.
	Party	1990
Convention on International Trade in Endangered Species of Wild Fauna and Flora, 1973	Signature	1973–1974
	Party	1986
United Nations Convention on the Law of the Sea, 1982	Signature	1982
	Party	1983
Vienna Convention for the Protection of the Ozone Layer, 1985	Signature	...
	Party	1997
Montreal Protocol on Substances That Deplete the Ozone Layer, 1987	Signature	...
	Party	1998
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, 1989	Signature	...
	Party	1997
Convention on Biological Diversity, 1992	Signature	1992
	Party	1993
United Nations Framework Convention on Climate Change, 1992	Signature	1992
	Party	1994
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, 1994	Signature	...
	Party	1998
Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997	Signature	...
	Party	2003
Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention), 1998	Signature	...
	Party	2005
Cartagena Protocol on Biosafety to the Convention on Biological Diversity, 2000	Signature	...
	Party	2004
Stockholm Convention on Persistent Organic Pollutants, 2001	Signature	2002
	Party	...

Source: Author compilation based on data from ECLAC.

Note: N.A. = not applicable; ellipses signify that the information is not available.

waiting to be enacted, drafted, or in process of development) and projects of international organizations in execution aimed at addressing the key challenges described in Section 10.2.

Table 10.2 summarizes some of the recent policies drafted and enacted, of which the most important are the following:

- **Environmental Protection Act Amendment (2009):** The amendment to the EPA provides greater environmental control and management of the petroleum industry (the most sig-

nificant part of the amendment). It also makes provisions for the improved protection of the Belize Barrier Reef System, establishes an environmental management fund, and provides for the out-of-court settlement of environmental disputes in appropriate cases and for the issuance of citations for pollution-related violations, among other things.

- **Pollution Regulations (Amendment):** This amendment complements the EPA in addressing the petroleum industry, including refining.
- **The National Integrated Coastal Zone Management Strategy for Belize:** The purpose of

TABLE 10.2. RECENT DEVELOPMENTS IN ENVIRONMENTAL POLICY

Sector	Policy	Year	Status
Environmental governance	Environmental Protection Act (Amendment)	2009	Enacted
	Environmental Impact Assessment Regulations (Amendment)	2007	Enacted
Land use	National Planning Bill		Drafted
	Ambergis Caye Master Development Plan	2009	Drafted
Forests	New Forest Policy		In process
Coastal resources	National Integrated Coastal Zone Management Strategy for Belize	1999	Partially implemented
	National Aquaculture Zoning Plan	2003	Drafted
Water resources	Integrated Water Resources Policy	2006	Drafted
	Water Resources Bill	2006	Drafted
Waste management	National Solid Waste Management Plan	1997	Reactivated
	Hazardous Waste Regulations	2009	Enacted
	Environmental Protection (Effluent Limitations) Regulations	2009	Enacted
Pollution	Pollution Regulations (Amendment)	2009	Enacted
National Protected Areas System	National Protected Areas Policy and System Plan	2000	Enacted

Source: Author compilation based on information from Belize Audobon Society, Department of the Environment, Coastal Zone Management Authority and Institute, Inter-American Development Bank, and Amandala.

this strategy is to facilitate improved management of coastal resources at a national level to ensure that economic growth is balanced with sound environmental management. It has three objectives: “knowledge and sustainable coastal resources use,” “supporting planned development,” and “building alliances to benefit Belizeans,” as well as defined actions to achieve them. The Coastal Zone Management Act of 1999 established the Coastal Zone Management Authority and Institute (CZMAI), whose purpose is to coordinate and consolidate the segmented functions related to economic development and resource and environmental management in Belize’s coastal area. The authority and institute monitored coastal resources between 1999 and 2004; however, since a budget cut in 2005, both of them are still functioning, but barely. The Act also requires CZMAI’s Chief Executive Officer to prepare a Coastal Zone Management Plan. Since CZMAI is not fully functioning, the preparation of the plan is currently on hold.

- **National Solid Waste Management Plan:** In 1997, an agreement was signed between the Government of Belize and the Inter-American Development Bank for a technical assistance

project funded by the Japanese government to aid in the preparation of a National Solid Waste Management Plan. The resulting plan includes policy criteria for the development of education and public awareness programs, preliminary designs and site development programs for landfills, environmental monitoring plans, plans for dump site closures, recycling programs, and planning for capital and recurrent costs and cost recovery. Implementation of the plan had been stymied for various reasons, such as lack of political will, but has recently picked up.

- **Hazardous Waste Regulations:** These regulations address the overall management of hazardous wastes, including storage, transportation, treatment, and prohibitions.
- **Integrated Water Resources Policy and Water Resources Bill:** The aim of the bill is to provide for the management, controlled allocation, and sustainable use and protection of Belize’s water resources of Belize and to provide for water quality control and for the establishment of a National Water Resources Commission.

In addition, the government of Belize is executing a number of projects that complement the policy

reform efforts addressed above. The most significant are the following:

- **IDB Solid Waste Management Project:** The project will finance investments in infrastructure to improve solid waste disposal in Belize's main urban areas, as well as services to strengthen the Solid Waste Management Authority as the entity responsible for improving solid waste management across the country. The infrastructure investments include the closure of the open dump site at Mile 3 on the country's Western Highway; the construction, at Mile 24, of a main waste transfer facility to facilitate waste separation and recycling and the hauling of waste volumes for final disposal, as well as a new regional waste disposal facility; and the closure of open dump sites in San Pedro, Caye Caulker, and San Ignacio and construction of transfer facilities in those sites or in alternative sites. The institutional-strengthening component will provide resources to support to the Solid Waste Management Authority in executing the project and carrying out its broader capacities according to its mandate.
- **United Nations Development Programme Land Management Project:** To support the adoption of sustainable land management capacities in Belize, the United Nations Development Programme is developing a project to address widely recognized problems of low institutional and human resource capacities, increased poverty, and inadequate capacities in land management. Funded by the Global Environment Facility (GEF), the project will also enable Belize to strengthen policy, regulatory, and economic incentive frameworks to facilitate wider adoption of sustainable land management practices across sectors.
- **The Mesoamerican Barrier Reef System Project:** The goal of the MBRS Project, funded by GEF and the governments of Belize, Guatemala, Honduras, and Mexico, is to enhance protection of the unique and vulnerable marine ecosystems comprising the MBRS and to assist the countries in strengthening and coordinating regional policies, regulations, and institutional arrangements for the conservation and sustainable use of this global public good. The MBRS Project supports training for staff in monitoring and for fisheries workers in alternative livelihoods and provides financing to conduct monitoring.

10.3.4 Institutional Structure

The key agencies responsible for environmental protection and natural resources management in Belize are the Ministry of Natural Resources and the Environment, which is one of the largest ministries of Belize and includes the Department of the Environment, Department of Geology and Petroleum, Forest Department, and Lands and Surveys Department; the Ministry of Agriculture and Fisheries, which includes the Coastal Zone Management Authority and Institute; the Ministry of Health; and the Ministry of Tourism, Civil Aviation, and Culture. In addition, the Solid Waste Management Authority (SWMA) has the mandate to implement a solution to the country's solid waste problem at the national level.

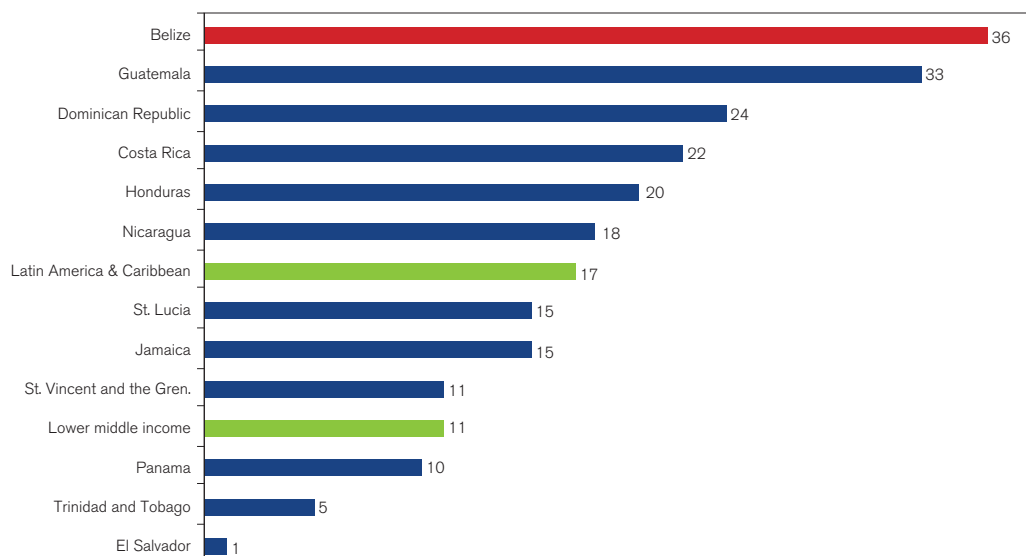
The Department of the Environment has a broad mandate to ensure the protection and sustainable use of the country's natural resources and the responsibility for monitoring the implementation of the EPA and subsequent regulations, as well as for taking the necessary actions to enforce its provisions. Its chairman is the Chief Environmental Officer, who is also the head of the National Environmental Appraisal Committee (NEAC), an agency that has the primary role of reviewing all EIAs and advising the department on their adequacy. Eight government agencies are represented on this advisory body, and of its thirteen members, two are required to be from a nongovernmental organization or the private sector. Other advisory bodies are the Fisheries Advisory Board, attached to the Fisheries Department and the Land Utilization Authority.

10.3.5 Natural Resources and Biodiversity Conservation

National Protected Areas System

Belize is not only a country with a rich natural resources endowment, but also a country with a great awareness of the need for preservation of these resources. Forest reserves and national parks have existed in Belize since the 1920s and 1980s, respectively. Currently, 36 percent of Belizean territory is under protection, which is the highest proportion in the Central American and Caribbean area (World Bank 2006).

FIGURE 10.6. PROTECTED AREAS, 2006
(percentage of land)



Source: Author compilation based on data from World Bank (2006).

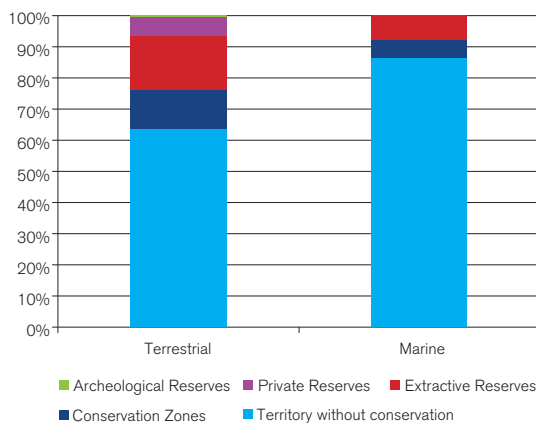
Belize's National Protected Areas System consists of 94 terrestrial and marine protected areas that include private, public, and community-based conservation initiatives. These areas represent the principal tools for the conservation of critical habitat, such as coastal, freshwater, and forest areas, and are a provider of environmental services, including biodiversity protection, production of water, and the provision of scenic beauty. They also generate a positive externality for recreation and research.

According to the National Protected Area Systems Analysis conducted in 2005, only one-third of the terrestrial protected areas in Belize are reserved strictly for the conservation of biodiversity, since the majority of the protected areas are extractive reserves that allow the removal of flora, timber, and fauna. The country's marine realm is much less protected than the terrestrial realm, as only 13.6 percent of the country's marine territory is protected. This substantial underrepresentation of the marine realm results from the significant portion of deep water located away from the coastal shelf that has not been considered a conservation target (Meerman and Wilson 2005).

Belize's Marine Protected Areas System consists of 18 protected areas, covering approximately 250,000 hectares of marine area. Despite the sub-

stantial underprotection of its marine realm in comparison to its terrestrial realm, Belize has the largest proportion of marine protected areas in Central America. Some of its Caribbean neighbors, however, have bigger proportions of marine areas under some kind of protection. In fact, in a study of Belize's Marine Protected Areas System, Cooper, Burke, and Bood (2009) concluded that marine protected areas are a useful tool for addressing a number of threats to coral reefs, particularly those related to tourism, development, and overexploitation of commercial species. The authors consider Belize's Marine Protected Areas System among the best in the world and an example of forward thinking in marine conservation.

Belize's National Parks System Act of 1981, which provides the regulatory framework for the preservation and use of Belize's natural and cultural features, is the statutory authority for the National Protected Areas System. Protected areas in Belize are under the responsibility of the Forest Department, the Fisheries Department, and the Institute of Archaeology. There are also arrangements between nongovernmental organizations and the Forest Department and the Fisheries Department for the comanagement of selected terrestrial and marine protected areas. Privately owned and managed lands have also been designated protected areas, and some are recognized by

FIGURE 10.7. TERRESTRIAL AND MARINE PROTECTED AREAS, BY TYPE OF CONSERVATION

Source: Author calculations based on data from Meerman and Wilson (2005).

the government. However, problems of national coordination, planning, and financing hamper the management of protected areas in many cases. Some of Belize's protected areas are "paper parks" with no visible on-the-ground management or management plan.

A major issue facing protected areas in Belize is mineral and petroleum extraction within legally recognized protected areas. In fact, a map available from the Belize Geology and Petroleum Department shows oil concessions approved by the government of Belize in protected areas, including Belize's Barrier Reef. The most recent such map shows 19 production-sharing agreements, six of which are for coastal or offshore sites. As a result of the ongoing oil spill in the Gulf of Mexico that began in April 2010 and continues as of the printing of this book, various nongovernmental organizations in Belize are asking the government to place a ban on offshore oil exploration.⁸

Other important issues in regard to Belize's protected areas are illegal logging, hunting, and fishing. In fact, competing demands for use of Belize's natural resources have led to conflicts resulting from uses of resources in protected areas by communities with customary rights or access. A final concern is the poorly regulated visitor use of some protected areas in Belize.

10.3.6 Payment for Environmental Services in Belize

Schemes for payment for environmental services seek to assign a value to environmental services and then establish an appropriate pricing system for those services to foster sustainable and socially optimal use of natural resources.

Belize's Protected Areas Conservation Trust, a fund dedicated to the promotion, conservation, and sustainable development of Belize's protected areas system, was the first Belizean initiative using the concept of payment for environmental services. It was formally endorsed through the U.S. Agency for International Development's project for the development of a National Protected Areas System Plan and began operating in June 1996. Its main source of funding is an "exit tax" of US\$7.50 per person collected from nonresident visitors (i.e., consumers of the Belizean scenic beauty), although cruise ship visitation charges and donations also provide support. These funds, as well as a portion of the entrance fees collected at protected areas, go into the trust and then are distributed in the form of grants to organizations to facilitate the sustainable management of Belize's natural resources and preservation of the ecosystem services. The trust has become an important and efficient fund for conservation in Belize, and its contribution to natural resources management and conservation is internationally recognized.

Another model project is the Rio Bravo Conservation and Management Area, 260,000 acres of mixed lowland, moist subtropical broadleaf forest located in northwest Belize. This was one of the first fully funded forest sector projects accepted and implemented (in 1995) under the U.S. Initiative on Joint Implementation, which promotes projects for reducing greenhouse gas emissions and encouraging sustainable development. The World Land Trust's Programme for Belize manages the private reserve with a mixed model that combines private external funding and sustainable timber extraction. According to The Nature Conservancy, studies undertaken before the beginning of the project indicated that without further pro-

⁸ For more information about the impact of petroleum on the environment, please refer to Chapter 8.

tection, up to 90 percent of the forest cover would have been converted to agricultural use.

In 2001, Belize signed its first Tropical Forest Conservation Agreement with the U.S. government and The Nature Conservancy. The agreement included a Debt-for-Nature Swap, whereby the government of Belize will fund three nongovernmental organizations and the Protected Areas Conservation Trust over a 26-year period in exchange for being released from US\$8.6 million in debt to the U.S. government. With resources already received under the agreement, the nongovernmental organizations have administered conservation activities in 23,000 acres of vulnerable forest in Belize's Maya mountains.

10.3.7 Environmental Management Gaps

As noted in the foregoing analysis, Belize has a broad range of laws, regulations, and ratified multilateral environmental agreements, as well as institutions to implement them. However, there are still important constraints on creating better environmental law enforcement and a sound monitoring system. The following subsections discuss obstacles to environmental sustainability in the country.⁹

Gaps in Environmental Policy

Environmental policy in Belize suffers from a number of substantial gaps. First, national development policies fail to take environmental issues into account. Second, there are notable areas not covered by environmental policies and/or law. One of the major gaps is the lack of a National Land Use Policy and Plan that could act as the framework to guide development. Third, tools to ensure compliance with environmental laws are insufficient. Fourth, environmental regulations in Belize do not always reflect present-day realities; for example, the current national forest policy was promulgated in 1954 and does not effectively address the present realities of the forestry sector (in fact, the term “sustainable development” is mentioned only once). Additionally, fines for environmental damage are too small to act as a deterrent for big developments.

Suboptimal Implementation of Existing Environmental Policies

In addition to the gaps in environmental policy coverage, the implementation of existing environmental policies in Belize is in many ways suboptimal. First, a significant number of informal and/or draft policies are held up under legal review. An apparent bottleneck after a policy or legislation is drafted delays or prevents it from being adopted or signed into law. Second, although EIAs are a requirement in connection with many projects, their quality is questionable, and there is a lack of compliance with environmental management plans, including preventative and mitigation measures recommended in EIAs. Third, there are advisory bodies with limited powers (e.g., the Fisheries Advisory Board, the National Environmental Appraisal Committee, and the Land Utilization Authority). Fourth, although Belize participates in any number of multilateral environmental agreements (see Table 10.1), making them operational and taking advantage of their provisions is still a challenge. Fifth, there are problems of coordination, fragmentation, and overlaps in environmental management.

Lack of Resources

According to the recent report *Millennium Development Goals: Advances in Environmentally Sustainable Development in Latin America and the Caribbean* (ECLAC 2010), in 2005, Belize's public environmental expenditure as a percentage of GDP (0.019) surpassed that of Argentina (0.01), Chile (0.015) and Uruguay (0.01). Moreover, between 2000 and 2005, it increased 72 percent. However, given the size of Belize's economy, even with this recent growth, the amount of resources devoted to environmental issues in the country is still insufficient to cope with all its environmental challenges.

To address this matter, the Environmental Management Fund was created in 2009. It receives 0.10 percent of the country's oil revenues, as well as other fees, penalties, and donations. The fund has a number of objectives: to assist the Department of the Environment in covering all costs as-

⁹ This section is based on work by the Belize Audubon Society in its Environmental Agenda for Belize.

sociated with oil spills, to carry out programs to prevent and reduce pollution, to support environmental monitoring and enforcement, to promote environmental public awareness and research, to encourage local environmental initiatives, to publish reports and other publications about the environment, and to plan and implement other initiatives for the effective and efficient use of the environment.

10.3.8 Summary

Environmental governance in Belize is based on a wide range of national legislation, multilateral environmental agreements, and both governmental and nongovernmental institutions. However, gaps in this governance represent an obstacle to sound environmental management in the country. The main constraints are a lack of coordination and resources, antique laws that fail to address today's challenges properly, ambitious policies and regulations that are developed but never enacted, and the absence of a land use policy as well as a unique authority responsible for water resources management. Policy options for addressing these gaps are discussed in the following section.

10.4 Policy Options

The establishment of a sound environmental management framework is a challenging task, even more so in a country like Belize, which is highly indebted, has a small population, and faces the difficult challenge of finding equilibrium between the exploitation of natural resources and sensitive ecosystems preservation. However, Belize is not alone in the pursuit of sustainable development. After decades of research and discussion, some resource management models (for example, integrated water resources management and community-based natural resources management) applied in countries with characteristics similar to those of Belize have demonstrated success and therefore gained acceptance. Equally, given the necessity of carbon capture to combat climate change, academics and policymakers have developed attractive financial options for forest preservation that Belize can and should consider.

The following subsections provide brief introductions to these models.

10.4.1 Integrated Water Resources Management

Integrated water resources management is a systematic process that takes into account the interdependence of many different uses of finite water resources. Its main objective is to allow the sustainable development, allocation, and monitoring of water resources in the context of social, economic, and environmental objectives. Out of 95 countries examined at the Fourth World Water Forum in Mexico in 2006, 74 percent were found either to have integrated water resource management strategies in place or to have initiated a process for the formulation of such strategies. In two Central American countries (Costa Rica and Honduras), the integrated water resources management concept has been included in key government documents that guide and regulate (or aim to) the use of water resources (Hassing et al. 2009).

10.4.2 Community-Based Natural Resources Management

Community-based natural resources management relates to direct control of rural resources by communities. There is evidence that models of community-based natural resources management have improved livelihoods and have boosted development of village infrastructure and representation in decision-making roles. These models could be implemented in Belize, particularly in the case of fisheries and forests. In fact, there are success stories of implementation of community-based management models in Guatemalan forests and fisheries in Bangladesh that are relevant for Belize (World Resources Institute 2008).

10.4.3 Reducing Emissions from Deforestation and Forest Degradation

According to a United Nations website on the topic,¹⁰ reducing emissions from deforestation and degradation (REDD) is an effort to create a financial value for the carbon stored in forests,

¹⁰ See the website of the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries at <http://www.un-redd.org/>.

offering incentives for developing countries to reduce emissions from forested lands and invest in low-carbon paths to sustainable development. It is very likely that REDD will be included in any post-Kyoto Protocol climate change management regime. According to Allen Blackman (2010), one of the main arguments for the inclusion of REDD in such a regime is that REDD will be inexpensive compared to fuel switching, carbon capture and storage, and other greenhouse gas abatement options available. Buyers of REDD credits would be predominantly foreign entities, which would be an advantage in a country like Belize. In the Central America area, Panama has already developed a strategy to implement REDD, and Costa Rica participates as an observer to the UN Collaborative Programme on REDD Policy Board. Through activities associated with REDD, a country like Belize (where, as noted earlier in the chapter, approximately 72 percent of the land is covered by forest) can take advantage of the benefits of implementing climate change mitigation policies (including preserving biodiversity, protecting hydrological services, minimizing economic development and cultural trade-offs, and maximizing long-term conservation).

10.5 Policy Recommendations

From the diagnosis of the state of natural resources and the environmental governance in Belize presented in the foregoing sections, 10 environmental policy recommendations emerge.

10.5.1 Take Advantage of What Has Already Been Done

Belize does not have to start from scratch in formulating its agenda for sustainable development. The country has put a great deal of effort and resources toward developing policies relevant to addressing environmental problems, and these policies should not remain as drafts or be only partly implemented. Belizean authorities, in conjunction with stakeholders, should review all existing environmental policies still at the draft stage and initiate legislative discussion on those related to the most urgent environmental challenges. Equally, existing and future environmental laws should be enforced, and institutions with

environmental mandates that have been allowed to languish should be reactivated.

10.5.2 Plan for Sustainable Development

It is highly recommended that Belize's government develop a land use policy and strategy. Moreover, the government should formalize a body responsible for coordinating land use and terrestrial development in the country, with representation from key implementing agencies and stakeholders. This is key to assuring sustainable development and becomes crucial in the case of tourism development and conservation of Belize's marine ecosystems. Existing regional plans (e.g., the Ambergris Caye Master Development Plan) could be revised and launched. It is also recommended that economic valuation be incorporated into planning processes (e.g., EIAs) and that distributional effects ("winners" and "losers") of proposed developments be evaluated.

10.5.3 Improve Waste Treatment

Although there has been rapid progress in the improvement of hygienic conditions in Belize, the challenge for the country is to ensure improved sanitation coverage, particularly in rural areas. Establishing liquid waste facilities in the principal tourism destinations is important, both to cope with the concentrated waste volumes and to enhance as well the sustainability of the tourism industry. Sewage and solid waste disposal should be incorporated in planning for tourism development.

10.5.4 Establish a Unique Water Authority

Water governance is essential to ensure planned allocation, sustainable development, and adequate protection of freshwater resources. Belize should avoid at all costs degradation of its water resources, but until there is a unique institution in charge of water resources management in the country, that is not going to be possible. As mentioned before, the implementation of integrated water resources management has showed success all around the world, in both developed and developing countries. Therefore, the currently pending Integrated Water Resources Policy and Water Resources Bill

should be revised and then adopted, enacted, and institutionalized.

10.5.5 Strengthen Protection of the Belize Barrier Reef

The 2009 Amendment of the Environmental Protection Act includes provisions for the improved protection of the Belize Barrier Reef System. This represents a step in the right direction, however, there is still much left to be done in regard to preserving Belize's Barrier Reef. It is crucial that Belize empower the CZMAI and build capacity for monitoring the state and use of coastal resources. Once reinvigorated, the agency should develop and implement a Coastal Zone Management Plan. It is essential that this plan incorporate means to minimize the loss of mangroves along the shoreline. In terms of fisheries, it is recommended that fishing regulations be tightened and greater resources be invested in their enforcement. It is also important to encourage the revision and approval of the National Aquaculture Plan. Overall investment in marine protected areas should increase, and fee collection and monitoring of visitors should improve. Resilience to coral bleaching should be built into the management and expansion of the marine protected areas network. Finally, Belize should consider the regulation of cruise tourism. Ecuador, for example, has set regulations to limit the number of cruises visiting sensitive ecosystems in the Galapagos Islands.

10.5.6 Avoid Deforestation

Information systems for monitoring Belize's forest resources should be improved, as Indonesia is doing to provide a tool to combat illegal logging. In addition, Belize can implement win-win solutions to finance sustainable development and avoid deforestation. The country has the conditions to participate in carbon markets and can study the feasibility of new options in the market (e.g., REDD). Equally, nontimber forest products are gaining importance and have great potential

as a sustainable resource. A number of examples are relevant for Belize: latex extraction for *chicle*, medicinal plants, honey, raw materials for handicrafts, xate palm leaves, houseplants, spices, oils, pharmaceuticals, forest tree seeds for nursery propagation, orchid plants, and wild fruits.

10.5.7 Implement Adequate Legislation to Address Today's Needs and Adopt Incentive Systems and Standards

The Belizean government should establish stronger penalties for noncompliance with laws and review national parks fee structures. It will also be important to adopt a system of incentives to encourage good environmental stewardship for compliance with environmental laws. For example, the implementation of the International Organization for Standardization (ISO) 14001¹¹ certification is very popular in Latin America (in 2008, there were 5,470 ISO 14001-certified enterprises), and the Economic Commission for Latin America and the Caribbean uses the number of ISO 14001-certified enterprises in a country as an indicator of its level of environmental management.

10.5.8 Optimize Use of Scarce Resources

Establishing clear roles to avoid fragmentation and overlapping in organizations involved in natural resources management will lead to a better allocation of the limited financial resources that can be devoted to such management. Belize's government also must make sure that the resources of the country's recently initiated Environmental Management Fund is deployed exclusively for environmental matters.

10.5.9 Internalize Environmental Costs in Economic Activities

Cruise tourism and oil extraction are two of the largest sources of foreign exchange in Belize and at the same time are two major generators of en-

¹¹ ISO 14000 is a family of internationally recognized standards for environmental management systems applicable to any business or organization, regardless of size, location, or income. These standards are developed by the International Organization for Standardization, which has committees with representation from all over the world. The ISO 14000 family includes most notably the ISO 14001 standard, which represents the core set of standards used by organizations for designing and implementing an effective environmental management system.

vironmental impact in the country. For this reason, the government should weigh revenues from these two sources against potential economic losses from environmental impacts. There has been progress in this area in the case of petroleum, with the creation of the Environmental Fund in 2009, and the government should consider the incorporation in a future long-term tourism strategy of compensation for the environmental damage generated created by cruises.

10.5.10 Promote Environmental Awareness at the National Level

Belize should develop an environmentally conscious citizenry. Environmental education should be integrated into all levels of formal education, workplaces, media, and other social institutions. It is also recommended that people involved in tourism be educated about the environment.

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Part IV

Social Development

Protecting the Poor and Vulnerable in a Tight Fiscal Environment

11.1 Introduction

There is no unique definition of social protection; however, a commonly agreed-upon description is that social protection is a group of policies or programs aiming to enhance the capacity of poor and vulnerable persons to manage economic and social risks, such as unemployment, sickness, disability, and old age. According to the United Nations Development Programme (UNDP) (International Poverty Centre 2006), policy interventions can improve these persons' well-being by, among other things, moderating the impact of shocks that cause sharp reductions in their income or consumption; indeed, this is the purpose of the social protection system in Belize. As Chapter 1 showed, Belize's economic growth slowed after 2004, even before the onset of the global recession in late 2008 and 2009. Moreover, there are indications that the economic growth that took place in Belize during the early years of the 2000s, such as tourism growth in Placencia and San Pedro and the emergence of the oil sector, had limited "trickle-down" impacts in terms of poverty alleviation. Unemployment in the country remains high, especially among the young population and women. In this context, a robust and efficient social protection framework is essential for protecting the poor and vulnerable.

Limited social assistance services and social security programs exist in Belize, but fiscal constraints limit the government's capacity to increase social spending and invest in existing programs. This points to a need to ensure that these programs are as efficient as possible.

This chapter analyzes social protection in Belize and its major challenges and outlines possible policy options and recommendations for strengthening protection of the country's poor and vulnerable.

11.2 Social Protection in Belize

11.2.1 Who Are the Poor and Vulnerable in Belize?

According to the 2009 Country Poverty Assessment, 33 percent of households representing 43 percent of the population in Belize are poor, and 10 percent of households accounting for 16 percent of the population are indigent (Government of Belize 2009). Poverty rates are highest at the country's geographical extremes—Toledo (51 percent), Corozal (47 percent), and Orange Walk (36 percent)—and lowest at its center—Belize (24 percent) and Cayo (31 percent). Closely related to this, poverty is far more prevalent in the country's rural areas (44 percent) than in its urban areas (19 percent) (Government of Belize 2009).

Poverty rates in the country are strongly correlated with household size; only 16 percent of families of two or three persons are poor, whereas the proportion rises to 61 percent of households of six or more persons. The poverty rates of male-headed households differ little from those of female-headed ones. Poverty rates are also strongly inversely correlated with the level of education of the head of household (Government of Belize 2009).

There is also some association of poverty with extremes of age. Children under 15 years of age (52 percent), youth between 15 and 24 years of age (45 percent), and the elderly (41 percent) have higher poverty rates than working-age adults (37 percent between the age of 25 and 44 and 33 percent between the age of 45 and 64) (Government of Belize 2009).

Poverty in Belize is also closely associated with employment and labor market status; it is more likely to be associated with work in less-skilled occupations and unemployment. Fifty-six percent of the unemployed in the country are poor, compared with only 33 percent of the employed. Forty-five percent of those not in the labor force (i.e., people not looking for a job, but without any income) are poor.

Furthermore, the unemployment rate in Belize has increased in recent years, from 9 percent in 2006 to almost 14 percent in 2009. A comparison of Belize's unemployment rate with those of other Central American and Caribbean countries shows that Belize has the fourth-highest unemployment rate in the region, behind Antigua and Barbuda (almost 39 percent), St. Vincent and the

Grenadines (almost 18 percent), and the Dominican Republic (almost 16 percent). Unemployment is higher among Belize's women than among its men and higher for its youth than for adults over 24 years of age (Table 11.1).

Child labor is a widespread problem in Belize. Among children between 5 and 17 years of age, a little over 6 percent are working, and the average age of entry into the workforce in the country is 8.7 years. Males are three times more likely to be engaged in child labor than females, and Maya children are more likely to participate in work than children from other ethnic groups; they are also the largest group in absolute terms of all working children. Child labor is most prevalent in large families, single-parent families, and families whose heads have less than a primary school education. Contributing factors are limited classroom space, an uninteresting curriculum, and provision of instruction in a language other than the child's native language (Young 2003).

Finally, disability is an often forgotten but pressing social problem in Belize. The number of persons with disabilities has shown a significant increase in the country since the 1991 census, particularly in its poorer areas. In 1991, around 2 percent of the population was reported as unable to work as a result of disabilities; by 2001, the number of reported disabilities had grown to 10 percent of the population (Meerhoff 2007). Although these rates include persons with multiple disabilities, the rapid growth stands out as significant, especially since the distribution of the disabled is not uniform geographically. Cayo and Toledo—the country's two poorest districts—stand out for their high proportion of persons with disabilities,

TABLE 11.1. UNEMPLOYMENT RATES BY SEX AND AGE GROUP, 2009
(percent)

Age group	Female	Male	Both sexes	Difference
14–19	43.4	26.1	33.0	17.3
20–24	27.9	16.2	20.8	11.7
25–49	15.9	5.0	9.6	10.8
50–64	21.1	6.3	11.3	14.7
65+	9.4	4.6	5.7	4.8
All ages	21.1	9.1	13.9	12.0

Source: Government of Belize (2009), 31–32.

in both relative and absolute terms. Cayo accounts for 27.6 percent of all persons with disabilities in the country but has only 21.9 percent of the national population. Orange Walk and Toledo each show 13.9 percent of disabilities, but 16.2 percent of the population lives in Orange Walk, as opposed to Toledo, where only 9.7 percent of the population lives.¹ Belize District is home to 28.4 percent of the country's people and 20.7 percent of the disabled.

11.2.2 Major Social Protection Programs

Belize seeks to protect its poor and vulnerable through three broad mechanisms: (1) the social safety net programs of the Social Security Board, (2) the programs of the Ministry of Human Development and Social Transformation, and (3) the Social Investment Fund.

Social Security Board

The major social protection programs administered by Belize's Social Security Board include transfer payments to cover sickness, maternity, retirement, invalidity, death, and disability, both to retired or disabled insured workers and to survivors of insured persons.

The Social Security Board is financed by contributions from both employees and employers. The amount payable by each category varies and depends on the level of income. The total payroll tax payable by all persons in insurable employment is 8 percent of the employed person's average weekly earnings. In 2006, more than 60 percent of the country's population was registered with the Social Security Board, with 70 percent of them being of working age and most of the rest being minors. This nevertheless does not represent the number of those actually making contributions to Belize's

social security programs. Only 71,000 people participated in the programs in 2005, around 72 percent of the employed population. Participation rates were similar for men and women and were highest in Belize City and Corozal and Stann Creek Districts. Consequently, the board's assistance is focused on the formal economy and working individuals, but coverage of the informal economy is lacking.

The major part of benefit expenditures, 78 percent, is made for short-term benefits (e.g., sickness, work injury, and maternity). Another 15 percent is allocated for long-term benefits (e.g., old age, survivors, and invalidity pensions) (Table 11.2). The remainder (7 percent) goes into payments for employment injuries and disability.

In 2003, a Non-Contributory Pensions (NCP) program was initiated for women 65 years of age or older, as part of the country's poverty alleviation strategy. Leakage rates are high, however, both for this program (more than half of its recipients live in nonpoor households) and for the country's social welfare programs in general (more than 40 percent of recipients come from nonpoor households).

Ministry of Human Development and Social Transformation

Belize's Ministry of Human Development and Social Transformation is in charge of managing social protection in the country by facilitating policy development and the implementation of programs to promote social justice and equity. As such, it is involved in areas such as strengthening of the family's supportive role,² provision of alternative care for the elderly, strengthening of civil society, and increasing advocacy and public awareness, although it focuses particularly on maternal-child social protection issues.

¹ Different hypothesis have been advanced to try to explain this high incidence in Toledo: inheritance/genetics; drinking/drug abuse; intermarriage (endogamy); environmental factors (wood and kerosene smoke inhalation in the home); dietary and nutrient/micronutrient intake deficiencies (for example, lack of iron, iodine, Vitamin A, Vitamin B, Vitamin D, etc.); agricultural poisoning through contaminants (insecticides, pesticides, other); industrial poisoning, cuts, burns and other accidents; traffic accidents and violence; accidents and violence at home; and consequences of disability-causing illnesses such as diabetes.

² For example, skills training, entrepreneurship and empowerment programs (e.g., sewing, cosmetology, housekeeping, child care, small business management). As of 2009, there were about 450 participants in these programs, which are often targeted at single mothers. The training courses are generally always full, despite the requirement for a small financial contribution to participate. Personal development sessions are offered as well, focusing on gender sensitization, HIV/AIDS/sexually transmitted infections, gender-based violence, self-esteem, child abuse, and sexual harassment (Government of Belize 2009, 153).

TABLE 11.2. SOCIAL SECURITY STATISTICS, 2001–2005

Benefit	2001	2005	2001	2005	2001	2005	2001	2005	Average payments (BZ\$)	
	Amount (BZ\$)		Number of beneficiaries		Distribution (%) of expenditures		Average annual change (%)		Grants/one-time payments	Monthly
Short term	4,913,453	7,912,056	13,091	25,124	33	78	12.6	17.7	n.a.	n.a.
Sickness	2,471,184	4,412,500	8,789	20,674	18	64	15.6	23.8	219	n.a.
Maternity allowance	1,457,171	2,506,045	1,032	1,185	10	4	14.5	3.5	1,932	n.a.
Maternity grant	985,098	993,511	3,270	3,265	4	10	0.2	0.0	304	n.a.
Long term	8,656,782	12,411,847	3,773	4,787	51	15	9.4	6.1	n.a.	n.a.
Retirement pensiona	5,554,636	7,873,354	1,799	2,360	32	7	9.1	7.0	2,921	244
Survivors pensiona	1,668,597	2,409,361	1,276	1,588	10	5	9.6	5.6	703	100
Invalidity pensiona	837,453	1,459,284	200	310	6	1	14.9	11.6	5,853	327
Funeral grants (NC)	596,096	669,848	498	529	3	2	3.0	1.5	1,266	n.a.
Employment injury	6,406,326	3,931,361	3,023	2,163	16	7	−11.5	−8.0	n.a.	n.a.
Injury	4,172,056	1,909,623	2,537	2,020	8	6	−17.7	−5.5	945	n.a.
Disability	1,775,223	1,414,791	331	371	6	1	−5.5	2.9	2,733	216
Death	445,547	602,447	325	332	2	1	7.8	0.5	n.a.	129
Funeral (ET)	13,500	4,500	10	3	0	0	−24.0	−26.0	1,500	n.a.
Total ^b	19,976,561	24,255,264	19,887	32,074	100	100	5.0	12.7	n.a.	n.a.

Source: Calculations based on Social Security Board (2007).

Note: n.a. = not available.

a Grants and regular monthly pensions.

b Excluding National Health Insurance program and noncontributory pensions program.

The ministry's expenditures for 2008–2009 were BZ\$6.6 million, of which BZ\$1.6 million was spent on grants to the needy, both directly and to institutions and organizations caring for them. About 60 percent of its budget was devoted to salaries and benefits (see Table 11.3), despite the fact that it has only a small technical staff.

The ministry's most recent annual report lists as its accomplishments providing assistance to more than 1,000 families in areas related to family strengthening, supervising the center for elder care in the country and the shelter for the homeless in Belize City,³ interventions in more than 1,000 cases of child abuse, and provision of support services in nearly 1,000 other cases. In addition,

the ministry helped draft investment policies in the areas of education, health, and potable water for the National Poverty Elimination Strategy and Action Plan (2007–2011).

The ministry's Human Services Department promotes alleviation of poverty, strengthening of families, protection of children from violence and abuse, and improvement of the quality of life of individuals, children, and families. It has staff presence in each of the country's six districts, and its leadership in the area of intrafamily violence is well recognized. Nonetheless, it is a small office that lacks social workers and has a low budget (25 percent of the total ministry budget) barely sufficient to cover its salaries and operating costs.

³ The center and shelter serve around 50 people per month.

TABLE 11.3. DISTRIBUTION OF BELIZE'S HUMAN DEVELOPMENT BUDGET, 2006-2008
(BZ\$)

Description	Projected 2006-2007	Proposed 2007-2008
Personal emoluments	57.78	55.71
Travel and subsistence	2.42	2.56
Materials and supplies	4.59	4.86
Operating costs	4.50	3.59
Maintenance costs	1.47	1.55
Training	0.21	0.16
Public utilities	3.76	3.54
Contracts and consultancy	0.27	0.26
Grants	25.00	27.70
Grand totals (BZ\$)	5,527,384	5,880,105

Source: Ministry of Human Development and Social Transformation.

The ministry's Child Placement and Specialized Services Division provides assistance to children in institutional care and in the areas of foster care and adoption and also engages in international case work. A total of 146 children were placed in foster care in Belize in 2006.

The mission of the ministry's Women's Department is to promote gender equality and equity in the country. Its objectives are, among other things, to lobby for greater participation of women in key government leadership positions and to ensure that Belizean women enjoy legal status equal to that of men and that the country's women become more economically empowered in terms of their access to loans and involvement in trade and commerce. The department supports proactive (e.g., training and advocacy) and reactive (e.g., case work) activities. It sees increasing activities for rural women as a priority. Its long-term aim is to become a Gender Affairs Department addressing men's as well as women's issues.

Like those of other departments, the Women's Department's activities are limited by lack of funds. Donations, volunteers, internships, and grants from donors for identified programs provide additional resources beyond the department's budget.

The ministry's Community Rehabilitation Department deals with children and youngsters that

come in conflict with the law and others who come in voluntarily seeking assistance. Its main target population is youths under 16 years of age who have infringed penal rules under the Juvenile Offenders Act, which protects those in that age group who have been apprehended and are not released on parole or on bail. Its primary activities concentrate on assessing the national juvenile justice system, strengthening it through legislative improvements, and assisting with the administration of juvenile court cases, which totaled 1,144 in 2006, with 495 cases pending. The department also operates a youth hostel residential facility for youths and other smaller facilities for older children that have been established in Belize and Cayo Districts. At present the department is establishing psychosocial response teams in four of the country's districts.

Social Investment Fund

The overall objective of the Social Investment Fund, which was created in 1996 as a statutory autonomous body under the Ministry of Economic Development, Industry, Commerce and Consumer Protection, has been to improve the access of poor communities to basic social and economic infrastructure and services, largely by supporting small-scale projects, identified and implemented with a high degree of community participation (World Bank 2003). As such, it is charged with the construction and rehabilitation of infrastructure in the areas of water supply in rural areas and of schools and health care facilities in poor areas, improvement of feeder roads, improvement of infrastructure for and management of solid waste and sewage in poor areas, and community training in infrastructure planning and management.

However, the fund's original focus on poorer communities has been modified when necessary to respond to national emergencies generated by natural disasters, such as Hurricane Keith in October 2000 and Hurricanes Chantal and Iris in the fall of 2001, which forced the fund to focus on the repair and rehabilitation of all kinds of public infrastructure throughout the country. As a result, its propoor focus was not implemented during those times as originally intended. As these needs have diminished (despite the impact of the damage caused by Hurricane Dean in 2007

and floods in 2008), the fund has returned to its original mission, albeit on a limited scale. As its budget shows, the amount expended for projects in education and health executed between March 2006 and April 2007 was modest, totaling less than BZ\$2 million for the former and less than BZ\$150,000 for the latter.

The fund has served as the contractor of last resort for the government when it has been necessary to circumvent bureaucratic processes that could be problematic during times of emergency (Arcia 2009). What needs to be explored, however, is whether the fund could be transformed into a forefront mechanism as an arm of the Ministry of Human Development or into a specialized agency dealing with local development and community participation processes, as has been done in other Central American countries (El Salvador, Nicaragua) or whether it should be phased out entirely.

11.2.3 Conclusions on Social Protection in Belize

Belize has fragmented, diverse, and limited arrangements for providing social assistance and protection, which leads to high administrative costs in relation to the benefits provided. Its social programs lack a sound system for identifying and targeting assistance toward the poor. The lack of a system for targeting beneficiaries and weak coordination among Belize's social sectors in the provision of services seriously limits the efficiency of social services provided in the country and generates duplications of interventions and omissions of beneficiaries. In addition, many programs are only weakly pro-poor, lacking specific focus on the needs of the most vulnerable population. Moreover, the lack of an institutionalized objective basis for beneficiary selection lends itself to political interference in the selection of beneficiaries and the provision of services.

The absence of a program for cash transfers targeted toward the poor creates pressures for less efficient, less well targeted and more distortionary interventions to mitigate the impact of shocks on the poor. For instance, as a response to the sharp rise in food prices in 2008, the government removed the general sales tax from a number of food items, including powdered milk, cooking oil, chicken Vienna sausages, corned beef, cof-

fee, and tea. Aside from introducing complexity into the tax system, this measure was not targeted to the poor and benefited all consumers of such goods, rich and poor alike.

In sum, Belize has a social protection system that could be substantially improved in terms of its efficiency and effectiveness. Moving towards established best practices in the region, such as using targeting instruments, focusing on the poor, and delivering services with proven effectiveness that help households gradually move out of poverty, would strengthen protection of the country's poor and vulnerable even in the absence of increased expenditures.

11.3 Policy Recommendations

11.3.1 Improve the Beneficiary Information and Targeting Systems for Social Programs

A first step towards the creation of a more effective social protection system in Belize would be the identification of the poor, where they are located, what their characteristics are, and what unmet needs they have. A beneficiary information system is the preferred mechanism for providing this type of information. Such a system consists of at least the following: (1) a registry or database with structured and systematic information on the current and potential beneficiaries of the net of social programs and on the benefits they receive; (2) a targeting index—an algorithm or statistical processing of the information contained in the registry to produce an index of priorities of the beneficiaries; (3) a data-based system for the exchange and integration of information and databases on diverse social programs; and (4) a system for monitoring and evaluating social programs, fed by the registry and social programs database, to carry out the follow-up, monitoring, and evaluation of key social services based on performance indicators. The information system and database of the beneficiary information system should be shared by all government ministries, to enhance the formulation of consistent policies. A household survey should be carried out, providing the country's social programs with evidence with which to design national policies and help evaluate their performance and outcomes.

Additionally, more research and more rigorous research is needed on identifying specific groups of people living in poverty and target groups, and efforts should be undertaken to share knowledge on who and where they are. The National Human Development Advisory Committee should be re-energized, and its technical secretariat should be strengthened with a solid mix of technical skills. Many countries in Latin America and the Caribbean have established beneficiary information systems. For example, in 2001 the Brazilian government launched a major effort to construct a single beneficiary registry database in order to improve efficiency and coordination of data collection and to reduce duplication of administrative costs across the country's numerous safety net programs. Chile has had the *Ficha de Protección Social*, a database that is used by all social service programs, since the 1980s and now has information about almost two million families in need. Jamaica provides another good example of how a beneficiary information system can be put to use in the design and execution of targeted conditional cash transfer programs.

As a corollary of the lack of a single, integrated information system on beneficiaries, Belize lags behind the remainder of the region in the implementation of a conditional cash transfer program. Such programs transfer cash to poor households, on the condition that those households make pre-specified and preagreed investments in the human capital of their children: health, nutrition, and education. Moreover, they have often provided an entry point for reforming badly targeted subsidies and upgrading the quality of safety nets. Such was the role of the creation of Mexico's conditional cash transfer program *Oportunidades* in 1997. Replacing inefficient food subsidies,⁴ *Oportunidades* introduced the concept of coresponsibility in the Mexican social protection system. Beneficiaries receiving the program's cash transfers must prove compliance with its educational, health, and nutrition conditions. The program handles its own targeting and program registration. It uses a geographic targeting approach to identify poor areas and a proxy means test to target poor households within localities and urban areas.

Jamaica's Program of Advancement Through Health and Education (PATH) is another example of a conditional cash transfer program that grew out of a reform and expansion of other social assistance programs and now offers large-scale social assistance to the poorest and most vulnerable among the population. It is executed by Jamaica's Ministry of Labour and Social Security and combines the country's Outdoor Poor Relief Program and the Food Stamp and Old Age/Incapacity Programs. PATH rationalizes the operations of these income transfer programs and thus eliminates duplication, reduces administration costs, makes the use of resources more efficient, and increases effectiveness in delivering benefits to the poor (Fiszbein and Schady 2009, 34).

The program's objectives are to (1) increase educational attainment and improve health outcomes and thus reduce poverty; (2) reduce current poverty by increasing the value of transfer to the poor; (3) reduce child labor by requiring children to maintain a minimum of 85 percent school attendance per term; and (4) serve as a safety net by preventing families from falling further into poverty, in the event of adverse shock. Jamaica has established a proxy means test for targeting the program's beneficiaries, using data collected during the country's Annual Survey of Living Conditions. A scoring formula identifies the households that are poor. Additionally, letters are sent to beneficiaries of the previous social welfare programs to ensure their inclusion (World Bank 2003).

11.3.2 Reduce Vulnerability among the Disabled

Improved information would help to establish the actual prevalence of disabilities and the number of persons with disabilities in Belize, which appears to be expanding faster than the general population and to be higher in poorer areas. Research should be conducted to explain the differential prevalence of disabilities among districts, both to prevent or reduce their occurrence and to find appropriate solutions, through subsidies to families, special education programs, scholarships, employment quotas in civil service, and other al-

⁴ In the mid-1990s, Mexico had 15 food subsidy programs, mostly funding bread and tortilla. These programs targeted mostly rural and urban households, but showed high inclusion errors. An estimated 60 percent of the rural poor were not covered by any of these subsidy programs (Fiszbein and Schady 2009).

leviation measures. Public policies can reduce the vulnerability of the disabled to unemployment by encouraging the public as well as the private sector to employ disabled persons where feasible.

11.3.3 Reduce Child Labor

More attention should be paid to the issue of child labor. Research on the actual dimension and characteristics of the problem is needed, and supply and demand side interventions should be put in place. Supply side interventions could include more financial support to poor families whose

children are at risk of entering the labor market, instead of participating in the education system, in order to support their family. This increased financial support could be provided partly through a conditional cash transfer program that provides incentives for attending school and earning grades, as evaluations of ongoing programs of this type in other Latin American countries show the potential for success of such a program in Belize. Demand side interventions could include disincentives for firms to employ children that motivate them to look instead for qualified adults for their labor needs.

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A Health Sector in Transition

12.1 Introduction

Belize is facing a number of important challenges in the health sector that threaten the population's recent gains in health status, including high poverty levels, susceptibility to natural disasters, and a human resource crisis in the health sector. These challenges add to the public health concern of treating and preventing communicable and noncommunicable health diseases; the latter are showing an alarming growth, which combined with a beginning demographic transition will impose growing health demand pressures in the near future. This chapter analyzes Belize's health sector and its major challenges and makes recommendations for possible approaches and policy options for meeting those challenges.

12.2 Characteristics of and Trends in Belize's Health Sector

12.2.1 *Major Health Problems*

Health infrastructure in Belize has improved in recent years, and figures for life expectancy (73.2 years for women and 67.2 years for men) and infant mortality (from 31.5 per thousand live births in 1993 to 12.0 in 2008) are optimistic. However, the country still faces a relatively high prevalence of neglected tropical and traditional infectious diseases, as well as an emerging epidemic of chronic diseases headed by heart disease and diabetes. Among the leading causes of death in 2001–2005, four were chronic diseases: hypertension (8.0 percent of the total) and diabetes (6.1 percent) were first and second, with acute respiratory infections fourth (5.7 percent) and pulmonary, circulatory, and other heart diseases fifth (5.6 percent). The under-five mortality rate per 1,000 births was at 25 in 2007, below that in many neighboring countries, which show a mortality rate of 35 (Mexico, Nicaragua) and 39 (Guatemala), or almost equal with the mortality rates of El Salvador and Honduras (24) (World Bank 2009). The leading cause of death among children is slow fetal growth, immaturity, and malnutrition, accounting for 24 percent of cases for 2005, followed by hypoxia, birth asphyxia, and other respiratory conditions (14 percent).¹

The major causes of hospitalization in Belize are preventable and highly susceptible to primary care management. Leading causes among adults are normal deliveries and complications of pregnancy, with 7,838 cases in 2006 (39 percent), followed by acute respiratory infections, which accounted for 5 percent of the hospitalizations in that year. Hospitalization rates in 2006 associated with certain illnesses and conditions increased compared to their 1996–2000 baselines, especially in the cases of asthma and bron-

¹ It is questionable whether the information from Belize's Ministry of Health, like the data presented in this paragraph, accurately reflects reality. The available series show inconsistencies, which makes it difficult to derive proper conclusions from them. Data on mortality causes sometimes show drastic changes from one year to the next. Information collected at local Ministry of Health facilities is reported to central offices, but it is not processed or consolidated. Private providers are not required to send information about their provision of services or the population served. All of these factors make it difficult to draw a complete picture of the demand side in the country's health sector. Notwithstanding this observation, the Ministry of Health has shown a remarkable improvement in data collection, processing, and dissemination.

chitis (40 percent increase from the 1996–2000 baseline), diabetes mellitus (60 percent increase), and hypertension (37 percent increase) (Central Statistical Office 2001; Ministry of Health 2006, 142).

Hospitalizations of children under one year of age in Belize are mainly the result of acute respiratory infections (23.34 percent), other conditions in the prenatal period (14.3 percent), or asphyxia (9.8 percent), as well as slow fetal growth (8.1 percent) and infectious intestinal diseases (7 percent). For children between one and four years of age, hospitalization stood at close to 1,400 cases for the 2003–2005 period. In this age group acute respiratory infections are the leading cause of hospitalization, with 22.8 percent in 2005, followed by bronchitis, emphysema, and asthma with 15.1 percent and infectious intestinal diseases with 12.3 percent; these top three causes together accounted for 50 percent of total hospitalizations in that year (see Table 12.1).

In addition to an increasing incidence of emerging chronic diseases such as asthma, bronchitis, diabetes, and hypertension, Belize shows a high prevalence of neglected tropical and traditional transmissible diseases typically associated with poverty and poor living conditions, such as scabies and other diseases caused by parasites, as well as a high prevalence of HIV/ AIDS, as can be seen in Figure 12.1.

Communicable Diseases

The most prevalent communicable diseases presenting a serious health concern in Belize are malaria, tuberculosis, dengue, and HIV/AIDS. Malaria has, until recently, been the leading health concern among communicable diseases in Belize, its prevalence peaking in 1994 with 9,000 cases.² The numbers have since decreased considerably, to 844 cases in 2006 (Ministry of Health 2009, 55). Malaria in Belize appears mainly in the country's rural areas and is concentrated in Cayo,

TABLE 12.1. LEADING CAUSES OF HOSPITALIZATION FOR CHILDREN ONE TO FOUR YEARS OF AGE, 2001–2005

Cause (decreasing 2005 order)	2001	2002	2003	2004	2005	Percentage of total, 2005	Cumulative percentages, 2005
Acute respiratory infections	336	238	330	276	314	22.80	22.80
Bronchitis, emphysema, and asthma	78	101	194	117	208	15.11	37.91
Infectious intestinal diseases	171	240	213	256	169	12.27	50.18
Injury, poisoning, and other external causes	89	128	132	97	72	5.23	55.41
Other diseases of the digestive system	18	25	27	48	49	3.56	58.97
Appendicitis, hernia, intestinal obstruction	23	45	50	41	48	3.49	62.45
Accidental falls	2		17	21	38	2.76	65.21
Nutritional deficiencies and anemia	29	34	22	27	17	1.23	66.45
Symptoms, signs, and ill-defined conditions	69	112	117	115	78	5.66	72.11
Residual	93	111	127	128	157	11.40	83.51
All other causes	213	170	209	241	227	16.49	100.00
Grand total	1,121	1,204	1,438	1,367	1,377	100.00	
Evolution (1998 = 100)	100	107	128	122	123		

Source: Ministry of Health (2006), 146.

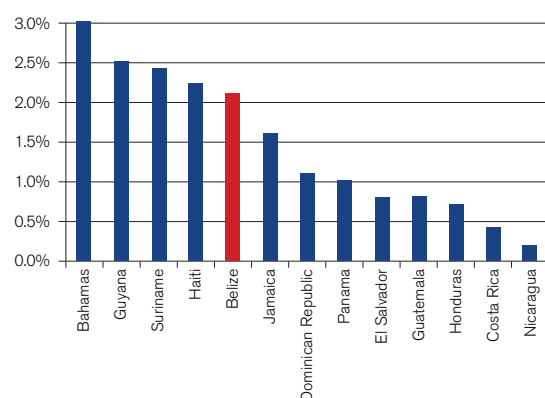
² As previously mentioned, the information system of Belize's Ministry of Health is not completely reliable; therefore some analysis and conclusions presented here may have flaws as a result of inaccurate data.

Stann Creek, and Toledo Districts, which account for 96 percent of all cases. *Falciparum* malaria, the most dangerous type, was high in 2005 in Cayo and Stann Creek, representing 96.3 percent of all cases in 2005 (Ministry of Health 2009, 55).

HIV/AIDS is now a major and growing health threat in Belize, and as it is gradually changing from a fatal to a chronic disease, it is placing heavy pressure on the consumption of scarce resources as a result of its high treatment costs, in addition to the heavy social burden associated with it. The estimated rate for Belize is at 2.1 percent for HIV/AIDS in 2007, more than twice as high as in the neighboring countries of Guatemala (0.8 percent), Honduras (0.7 percent), and El Salvador (0.8 percent) (World Bank 2009). For many years Belize has been ranked as having the highest infection rate per thousand people in the Central American region, and it ranks in fifth position in the Caribbean region (see Figure 12.1).

HIV/AIDS cases in Belize are concentrated in the Belize District and are found especially among men and women aged 25–29, followed by those aged 30–34. People infected with HIV/AIDS are at high risk of contracting tuberculosis, the leading cause of death among those infected with HIV/AIDS. The Ministry of Health reported 21 cases of tuberculosis/HIV coinfection in 2005 and 13 cases in 2006 (Ministry of Health 2006).

FIGURE 12.1. HIV/AIDS INCIDENCE IN CENTRAL AMERICA, 2007



Source: Authors' calculations based on World Bank, *World Development Indicators* (2009).

Among the population not infected with HIV/AIDS, tuberculosis shows an oscillating decreasing trend for the 2001–2005 period. The number of cases of dengue was below 50 in most years during that same period, but jumped to 652 in 2005 as a result of an outbreak in Cayo District. Dengue, as opposed to malaria, which is concentrated in younger populations, seems to affect all age groups relatively evenly, likely an effect of a lack of previously acquired natural defenses (Ministry of Health 2006, 34–38).

Noncommunicable Diseases and Other Health-Related Problems

Noncommunicable diseases, mainly cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes, represent a leading threat to human health and development in Belize.³ The data on gender distribution of diabetes in the country show either a higher incidence of diabetes among women, or a higher degree of medical self-awareness and health-related responsibility among women, expressed as a higher rate of diabetes-related hospital usage. The average proportion of hospitalizations attributable to diabetes was 34 percent for men and 66 percent for women in 2001–2006; women's rate of hospitalization thus was almost double men's. Data on severity of illness is not recorded, so there is no information regarding the type of diabetes involved or the degree of impairment resulting from it.

The high incidence of diabetes among Belize's population is indicative of the strong prevalence of nutritional problems in the country, specifically obesity in the case of diabetes; the range of nutritional problems in the country encompasses the full spectrum, however, from obesity to nutritional deficiency. Although child malnutrition is apparent among all socioeconomic and ethnic groups in Belize (Central Statistical Office 2007), the national prevalence of stunting⁴ was reported in the 2002 Living Standards Measurement Survey at 32.3 percent among children under age five in the poorest income quintile of the population (see Table 12.2), compared to a mere 4.9 percent

³ On September 15, 2007, the heads of government of the Caribbean Community held a Regional Summit on Chronic Non-Communicable Diseases in Port of Spain, Trinidad, and issued a joint declaration naming implementation of strategies for the reduction of the burden of noncommunicable diseases as a central priority of the Caribbean Cooperation in Health Initiative Phase III.

⁴ Stunting is defined as having a height for age two or more standard deviations below the median of the reference growth curve.

TABLE 12.2. STUNTING AND OVERWEIGHT IN CHILDREN UNDER AGE FIVE BY INCOME QUINTILE, 2002

Quintile	1 (poorest)	2	3	4	5 (richest)
Stunting	32.3	13.9	19.5	8.2	4.9
Overweight	7.6	5.9	13.3	15.0	19.8

Source: Meerhoff (2007), 36.

among children in the highest income quintile. Thus there is a clear association between poverty and stunting in the country. The most affected are the country's indigenous populations. Deficiencies in weight and height for age, as well as in serum iron and vitamin A, found to be present in preschool children in all ethnic groups in Toledo District in 2002, were found to be present in rural populations of the Maya and Mestizo groups in other districts. The prevalence of stunting was estimated to be 40 percent among Maya children, and stunting rates among the Maya, Mestizo, and Garifuna ethnic groups were higher than those for the rest of the population (see Table 12.3) (Meerhoff 2007). As stunting is also associated with reduced intellectual capacity and productivity in adulthood, this situation further perpetuates the vicious cycle of poverty among these already disadvantaged and marginalized groups (Ministry of Health 2007).

12.2.2 Organization of the Health Sector and Patterns of Care Delivery

The Ministry of Public Health is the main provider of health services in Belize. It operates a network of facilities consisting of eight hospitals, one each in the districts of Corozal, Orange Walk, Stann Creek, and Toledo, and two each in Cayo and Belize. Three are regional hospitals, and the

national referral institution is the Karl Heusner Memorial Hospital (KMH), located in Belize City, which is also the general hospital for Belize District. These facilities provide routine primary health care and a wide range of secondary care. Three other hospitals are community hospitals; like the regional hospitals, they provide routine primary health care, but unlike the regional hospitals, they offer only a minimal amount of secondary care; thus patients with more complex issues have to be referred to other members of the network (Meerhoff 2007, 46).

Belize's public hospitals provide inpatient and outpatient services for the four basic specialties—pediatrics, obstetrics, gynecology, and internal medicine and surgery—along with accident- and emergency-related care. KMH provides, in addition, neurology and physiology services, services for ear, nose, and throat conditions, and orthopedic surgery. Outreach community medical services provided include those relating to dental health, mental health, and communicable disease prevention and control. Mental health patients are treated at Rockview Hospital, located 22 miles from Belize City; each regional and community hospital, however, is staffed with psychiatric nurses, who also provide counseling to victims of gender-based violence and child abuse, as well as support to HIV/AIDS patients.

TABLE 12.3. STUNTING IN CHILDREN UNDER AGE FIVE BY DISTRICT AND ETHNICITY, 2002

District	Children in sample	Children with stunting	Percentage	Ethnicity	Children with stunting	Percentage
Toledo	107	47	44	Maya	113	40
Orange Walk	115	21	18	Mestizo	382	17
Stann Creek	66	12	18	Garifuna	19	15
Corozal	80	11	14	Creole	158	9
Cayo	175	22	13	Others	42	10
Belize	171	16	9			
Total	714	129	18			

Source: Meerhoff (2007), 36.

With a ratio of 1.2 hospital beds per thousand people, Belize's hospital capacity compares favorably to that in neighboring countries. Guatemala, for example, has only 0.7 hospital beds per thousand people, and Honduras has 1.0. But compared with countries elsewhere in the region, Belize's ratio of hospital beds to people is significantly lower; Mexico, Trinidad and Tobago, and Jamaica, for example, have ratios of 1.6, 2.7, and 2.0 beds per thousand people, respectively (Government of Belize 2009, 132).

In addition to the routine primary care provided by the hospitals, primary health care is addressed through a network of health posts and rural and urban health centers and clinics, as well as through mobile units, community nursing aides, traditional birth attendants, and voluntary collaborators. This network provides pre- and postnatal care, immunization services, growth monitoring of children under age five, treatment of diarrhea and minor ailments, and general health education. The facilities provide pharmaceuticals, which are imported from other countries, since Belize has no pharmaceutical industry. Laboratory tests are conducted in the regional hospitals and at the Central Medical Laboratory in Belize City, a national referral laboratory that offers services to both public facilities and those in the private sector. Its services include bacteriology, serology, cytology, histology, and special chemical and hematological analyses. Samples requiring some laboratory tests, such as the enzyme-linked immunosorbent assay (ELISA) test for HIV/AIDS, are sent to facilities abroad.

According to Belize's 2009 *Country Poverty Assessment Report* (Government of Belize 2009), as of 2009, the public network included 39 health centers and 34 health posts,⁵ a reduction in respect to 2001, when 42 health centers and 56 health posts were operative.

In addition to the public health network, there is also a private health sector in Belize, composed of five private hospitals (with a total of 79 beds), 58 clinics, numerous nongovernmental organizations and religious groups providing outpatient services, several private laboratories and providers

of radiological services, about 100 private pharmacies, and individual practitioners. Most doctors are solo practitioners, with some organized into group practices or other types of formal relationships. The private outpatient network comprises 58 outpatient facilities and clinics, most of them located in Belize City; some offer specialized services such as dentistry, dermatology, and gastroenterology.

Nationally, as of 2002, 68.5 percent of those reporting illness or injury sought health care, whether in Belize or abroad, and Maya and Mestizos showed the lowest levels of health care seeking (though reporting the highest levels of illness). Public health facilities were the main providers of health care for persons who were ill (71.1 percent), while 35.4 percent of those ill sought care from private facilities; a small percentage (6.5 percent) visited both public and private facilities. Among those seeking health care, 15.5 percent of persons in the poorest consumption quintile used private facilities, with the percentage steadily increasing to a maximum of 52.2 percent in the wealthiest quintile (National Human Development Advisory Committee 2004, 85).

Hospital admissions in Belize remained relatively stable over the first half of this decade. The average length of hospital stays fluctuated over the period, from 3.4 days in 2001 to 2.8 days in 2006, and the occupancy rate was low in all years; it was 49.2 percent as of 2006 (Ministry of Health 2006).

12.2.3 Issues in Provision and Evaluation of Health Care Services

A number of factors inhibit provision and monitoring of health care services in Belize. Its geography and population distribution pose substantial challenges. The numbers of doctors and certain other medical care personnel are inadequate, and staffing and resource problems detract from the efficacy of the care that can be provided. Private health care services are largely unregulated, as the result of a lack of monitoring mechanisms, and the country's medical information system, though recently upgraded, is as yet unable to provide con-

⁵ Health centers and health posts are both primary care facilities. Health centers tend to be bigger, and their resolution capacity is somewhat more sophisticated.

sistently reliable data on health care provision in the country.

Belize also faces important geographical constraints and population patterns that inhibit the provision of health care services. It has a low population density, at 13 people per square mile. A substantial proportion of the country's population, 49.9 percent, lives in rural areas (in 247 villages with an average 515 inhabitants each). The terrain in parts of the country is rugged, mountainous, and tropical. Paved highways and inter-district roads are limited and the majority offer difficult passage during the rainy season. Thus transportation is difficult, especially for the most remote villages, and in Punta Gorda, for example, a journey to the local hospital can take up to two days and cost a minimum of BZ\$15, a substantial sum for the prevailing income levels.

According to the Pan American Health Organization (PAHO) (2007), Belize has one of the lowest levels of physician coverage in the Latin American and Caribbean region, but the supply of nurses is somewhere in the middle of the range (see Table 12.4b). Whereas the number of physi-

cians has remained stable over time, the number of dentists has diminished severely, both because of the relatively small number of dentists in the country and also because many seek better opportunities abroad and emigrate.

Management of medical staff and resources in Belize shows a need for improvement. Recruitments of new or replacement staff are often delayed, so health institutions are often understaffed. Delivery of services is often hampered by low staff morale and discipline and inadequate resources for equipment, operation, and maintenance, which tends to diminish the effectiveness of services provided.

Belize's Ministry of Health has few regulations and/or programs in place through which to regulate or monitor private sector services and facilities. The Belize Medical and Dental Association has agreed to contribute to the development of a regulatory framework for private sector medical services and facilities, and it has made a firm commitment to disseminating the norms, standards, and protocols developed. However, Belize still has a long way to go in the regulation, sur-

TABLE 12.4A. REGISTERED MEDICAL PERSONNEL IN BELIZE, 2003-2007

Category	2003	2004	2005	2006	2007
Number					
Physicians	203	221	249	263	256
Nurses	465	449	441	443	522
Community health aides	212	204	219	217	204
Rate per 10,000 population					
Physicians	7.7	7.8	8.5	8.7	8.2
Nurses	17.0	15.9	15.1	14.7	16.8
Community health aides	8.0	7.2	7.5	7.2	6.5

Source: Statistical Institute of Belize (2008).

TABLE 12.4B. REGISTERED MEDICAL PERSONNEL IN LATIN AMERICA AND CARIBBEAN, 2003-2007

Indicator	Belize	Guatemala	Honduras	Mexico	Jamaica	Trinidad and Tobago
Physicians per 10,000 people	8.1	9.9	9.0	14.0	10.4	7.5
Nurses per 10,000 people	15.7	4.0	1.7	19.0	8.0	28.7

Source: PAHO (2007).

veillance, monitoring, and control of the private medical care system. The lack of information on private sector production of health services is an obvious example.

The Belize Health Information System has recently been upgraded, and in terms of management information systems, it stands out as state of the art. However, in regard to the reliability of the health information it generates, some issues remain to be addressed. Data inconsistencies have been identified, presumably indicating that not all activities are being recorded, and errors occur to a variety of degrees. Though not apparent in national averages, large fluctuations from year to year, beyond what should occur, statistically speaking, are apparent when information is broken down analytically, leading to the conclusion that the data in the Health Information System are not reliable. The system, by and large, does not follow up on primary care providers or private sector providers in the national health insurance program in regard to the data they provide.⁶

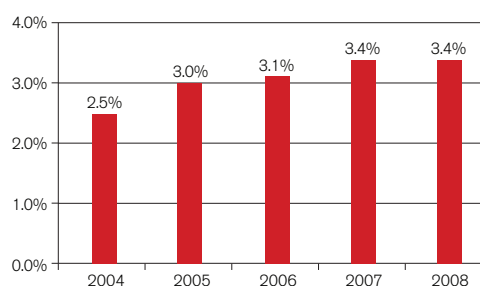
12.2.4 Health Care Expenditures

Public expenditures on the health sector in Belize have increased briskly over the last five years or

so. Health care expenditures rose from 9 percent to 11 percent of the overall government budget over the two-year period ending in 2008 (Table 12.5) and from 2.5 percent to 3.4 percent of gross domestic product (GDP) between 2004 and 2008 (Figure 12.2).

This increase in public expenditures on health has brought Belize near the international median. Belize's expenditure level is significantly above those of some Central American and Caribbean countries (such as the Dominican Republic, Guatemala, and Jamaica, which spent only 2 percent of their GDP on health in 2007) but well behind

FIGURE 12.2. EXPENDITURES ON HEALTH AS PERCENTAGE OF GDP, BELIZE, 2004-2008



Source: Authors' calculations based on Government of Belize (2009), 136.

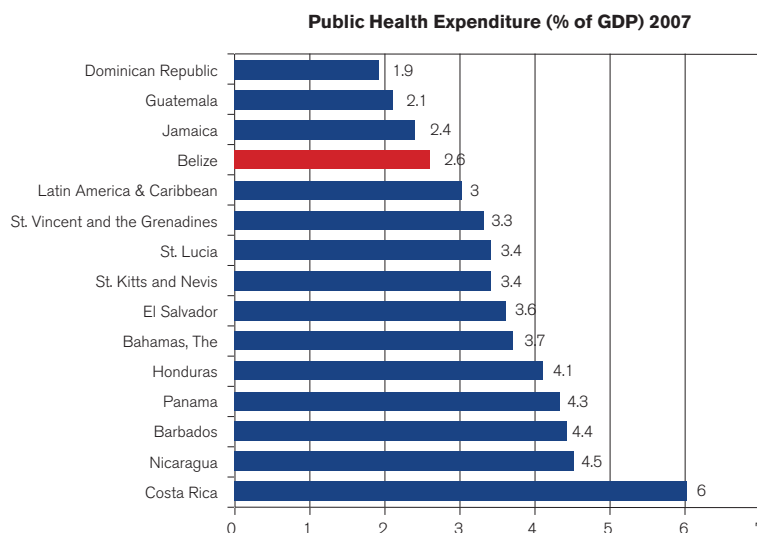
TABLE 12.5. A MACRO VIEW OF GOVERNMENT AND HEALTH EXPENDITURES IN 2006-2007 AND 2007-2008 (BZ\$)

Item	Revised budget, 2006-2007	Proposed budget, 2007-2008
Total government revenues and grants	626,885,289	678,522,913
Total government recurrent expenditures	589,272,273	585,236,290
Total government capital expenditures	113,633,300	117,999,441
Total government expenditures	702,905,573	703,235,731
GDP	2,428,000,000	2,558,000,000
Health recurrent expenditures	55,529,219	64,707,871
Capital II	3,834,653	3,211,288
Capital III	4,500,000	6,500,000
Total health expenditures	63,863,872	74,419,159
Health recurrent expenditures as percentage of total government recurrent expenditures	9	11
Health total expenditures as percentage of total government expenditures	9	11
Total government expenditures as percentage of GDP	29	27
Total health expenditures as percentage of GDP	3	3

Source: Musa (2007).

⁶ For more information on the Ministry of Health production of data, see Meerhoff (2007).

FIGURE 12.3. EXPENDITURES ON HEALTH AS PERCENTAGE OF GDP, SELECTED LATIN AMERICAN AND CARIBBEAN COUNTRIES, 2007



Source: Authors' calculations based on World Bank, *World Development Indicators* (2007).

those in the richest and most-developed Central American and Caribbean countries (Costa Rica, Nicaragua, Barbados, and Panama, where public expenditure on health accounted for between 4 and 6 percent of GDP in that year) (Figure 12.3). A global comparison of public expenditures on health shows that if the level of Belize's public expenditure on health is adjusted to take income levels into account, it is in line with that in other countries of similar income (Figure 12.4).

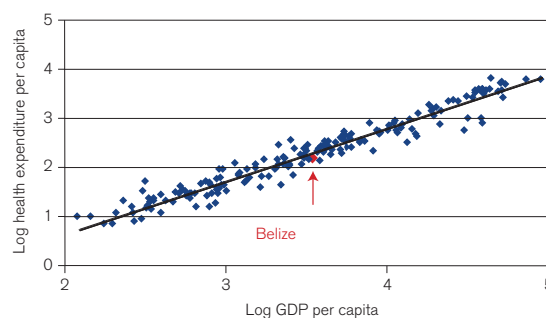
Consequently, the major issues relating to public health expenditures in Belize relate to the efficiency and effectiveness of the allocation and use of such expenditures. Arguably both the efficiency and equity of health expenditures in the country can be strengthened through improving the distribution of health expenditures by specific spending category and geographical district.

At an aggregate level, the allocation of Belize's health budget according to the economic classification of expenditure appears reasonable and appropriate (Table 12.6). Salaries and benefits represent 46 percent of total expenditures, which is consistent with such spending in other health care systems in middle-income countries. However, if grants to hospitals are included as wages, then the percentage of wages in the total budget increases to 70 percent, which is above average for this group of countries. If the budget is examined

by type of expenditures (e.g., hospitals, medicines, district health, and administration and other expenditures), there appears to be room for improving efficiency by shifting the operational burden to the district level and reducing the burden of administration and other expenditures (laboratories, centralized maintenance, epidemiology, etc.). Furthermore, there may be room for improving cost recovery at the hospital level by increasing the copayment for those who could be treated at the health center level (Arcia, 2009).

Efficiency might also be increased by initiating a system of cost recovery associated with treatment at public health facilities. Public expenditures on

FIGURE 12.4. IS BELIZE SPENDING ENOUGH ON HEALTH?



Source: Authors' calculations based on World Bank, *World Development Indicators* (2006).

Note: Figure presents a scatterplot, for a sample of countries worldwide, of the log of per capita health expenditure with respect to the log of per capita GDP.

TABLE 12.6. DISTRIBUTION OF HEALTH BUDGET BY TYPE OF EXPENDITURE (BZ\$)

Budget item	2006–2007	Percent	2007–2008	Percent
Material and supplies	12,132,231	21.85	11,488,911	17.76
Operating costs	2,302,329	4.15	2,585,850	4.00
Maintenance costs	523,527	0.94	1,283,093	1.98
Training	51,000	0.09	182,344	0.28
Public utilities	1,247,473	2.25	1,162,388	1.80
Contributions and subscriptions	106,379	0.19	1,000,000	1.55
Contracts and consultancy	39,420	0.07	684,162	1.06
Grants	12,637,760	22.76	16,941,305	26.18
Total	55,529,219	100.00	64,707,871	100.00

Source: Arcia (2009).

health are propoor by default, since the system serves primarily the poor, while the nonpoor tend to be served by private providers. There is a high degree of self-selection, with those having higher incomes visiting private health providers. However, a significant proportion of the nonpoor also receive services at public facilities. People who are sick and seek treatment at a public facility tend to spend about the same amount out of pocket, regardless of their income level. Thus, there is a need for a more explicit policy of cost recovery for services rendered at public facilities to individuals who are not members of the targeted population. Nevertheless, such a commonsensical approach to cost recovery would still be insufficient to ensure efficiency, because the poor sometimes also visit private providers. Hence, efforts should be made to identify the poor more explicitly in order to make cost recovery more propoor.

Toward this end, the Office of the Director of Health Services receives an allocation with a high amount devoted to recurrent funding—4.5 percent of the budget—but one-half of it is allotted to salaries. This office is responsible for policy implementation, human resources management, and intermediation between policymaking and health service delivery. It is heavily staffed, with a relatively large number of technical positions whose job descriptions are similar to those of technical staff assigned to the district level. For instance,

the Central Administration Office has a recurrent allocation of BZ\$1 million for telephone, and the Office of the Director of Health Services has a telephone allotment of BZ\$800,000.

The equity of health care system expenditures is also an area for closer examination. Inequities between richer and poorer districts are apparent. Based on the data on personnel costs allocated for each district, for example, it can be observed that in general, poorer districts receive lower budget allocations because they pay lower salaries, as disadvantaged areas typically have younger medical staff trying to gain experience. As a result, the higher-paid medical staff in the country are found in administrative and central technical positions, while the lower salaries are found among personnel in two disadvantaged districts, Corozal and Toledo. The fact that health care workers in Belize's poorer districts have the lowest salaries has negative implications for health equity in the country, because lower salaries imply a poorer quality of service in those districts (Arcia 2009). Not only do health care staff in these districts have less training, but they tend to stay for shorter periods, as a result of the low incentives/salaries to continue working in these areas.⁷

Inequities based on the size of the population served are evident as well. The correspondence between a district's population and its budget is

⁷ Belize hosts many health care professionals from Cuba and Nigeria, all of whom practice medicine in rural areas. The Nigerian physicians are paid by the government of Nigeria; the Cuban health care professionals are paid by Belize's Ministry of Health through personal emolument accounts. All Cuban medical professionals in Belize, irrespective of rank (i.e., whether a nurse, a doctor, or a specialist), receive a fixed stipend of BZ\$500 per month; the Ministry of Health also provides accommodations, including payments for water, electricity, and gas, and transportation to and from work.

weak. While Cayo District has 23 percent of the total population, it receives only 10 percent of the districts' budget; Orange Walk has 15 percent of the total population but receives almost 24 percent of the budget; and Stann Creek has 10 percent of the population but receives almost 18 percent of the budget (Table 12.7).

Finally, urban-rural inequities are an ongoing problem. Similar to the pattern in other countries in the region, health care in Belize is concentrated in the urban areas, leaving rural areas underserved. At the national level, the Ministry of Health has made some efforts at increasing coverage in rural areas through use of mobile units, and informally, the allocation of medical supplies tends to favor poor areas in Stann Creek and Toledo, where the amounts spent by sick people are the lowest. Nevertheless, most health practitioners are located in the main cities, especially in Belize City, in which about 50 percent of all health care personnel in the country are concentrated (Arcia 2009). This concentration of staff in one region inevitably leads to problems of equity in health access. Another area of concern is the insufficiency of the budget for the provision of free basic medication to the population, augmented by a relatively ineffective procurement and distribution system. As a result, health care in Belize is not as good as it could be, especially for the rural poor (PAHO 2002).

12.2.5 Private Expenditures on Health

Basic health care in Belize is financed by the government, but there is also private health care expenditure, especially on curative services, and this is the main component of the government's cost recovery mechanism for health care, although the amounts recovered are minimal.⁸

Living standards surveys in Belize show that private health care expenditures in the country are directly correlated with income, that the incidence of poverty is inversely correlated with private expenditures, and that there are significant differences by region and ethnic group (National Human Development Advisory Committee 2004). For instance, more than 80 percent of sick people in Toledo and Belize Districts use public facilities, whereas the sick in Corozal (42.7 percent) and Orange Walk (53.2 percent) Districts use them considerably less. In addition, the use of public health facilities is highest among Creoles and Garifuna and lowest among Mestizos, who show the highest use of private health care (41.5 percent) among Belize's ethnic groups. By age group, the elderly (47.2 percent) have the highest rate of private health care use. As expected, the use of private health care providers correlates positively with income. Whereas only 15.5 percent of those in the lowest consumption quintile use private facilities for health care, 52.2 percent

TABLE 12.7. DISTRIBUTION OF DISTRICT AND TOTAL HEALTH EXPENDITURES AND ESTIMATION OF PER CAPITA EXPENDITURES (BZ\$)

Description	Belize	Cayo	Orange Walk	Corozal	Stann Creek	Toledo
2006–2007 district budget	4,978,814	1,958,625	4,631,533	2,592,602	3,490,052	1,908,545
Pro-rated total expenditures per district ^a	15,722,970	10,315,191	10,122,991	6,866,389	7,202,755	5,298,923
Population	90,000	70,000	46,000	35,800	31,100	28,400
Percentage of total population	29.87	23.23	15.27	11.88	10.32	9.43
Percentage of district budget	25.45	10.01	23.68	13.25	17.84	9.76
Percentage of total budget	28.31	18.58	18.23	12.37	12.97	9.54
District per capita expenditures	55	28	101	72	112	67
Total per capita expenditures	175	147	220	192	232	187

Source: Authors' calculations.

^aPro-rated on the basis of each district's population.

⁸ Revenues collected at the seven regional hospitals during fiscal year 1995–1996 amounted to 4.2 percent of operational costs. Funds collected went directly to general revenue rather than to the collecting facility (PAHO 2002).

of those in the highest consumption quintile do so (Arcia 2009).

Also, as expected, private health care is significantly more costly than public health care. Table 12.8 shows average monthly private expenditures on health care in Belize per episode of illness in 2002, according to the *Country Poverty Assessment Re-*

port for that year. Nationally, whereas individuals who went to a public facility for treatment spent BZ\$16.23 during the 30-day period leading up to treatment, those who went to a private practitioner spent BZ\$133.45. In addition, individuals visiting a public facility spent an average of BZ\$29.63 on drugs prescribed by the practitioner, whereas those visiting a private facility spent BZ\$44.74.

TABLE 12.8. AVERAGE PRIVATE EXPENDITURES ON HEALTH CARE, BY DISTRICT, ETHNICITY, AND SEX, 2002 (BZ\$)

Selected characteristics	Average number of visits to health care providers, preceding 30 days	Total expenses, all visits, preceding 30 days		Average cost of drugs	
		Public care	Private care	Public care	Private care
District					
Corozal	2.5	30.33	103.23	26.47	42.07
Orange Walk	1.7	11.38	219.06	29.34	25.77
Belize	2.0	20.33	211.59	46.62	60.74
Cayo	1.8	14.89	103.42	25.10	44.48
Stann Creek	1.9	7.94	63.23	7.88	49.03
Toledo	2.1	8.91	93.27	17.90	41.84
Location					
Urban	1.9	18.85	146.13	30.69	47.38
Rural	2.1	12.48	112.97	29.00	40.19
Ethnicity					
Creole	2.1	12.10	246.91	44.25	43.85
Garifuna	1.8	0.58	35.51	25.84	62.41
Maya	1.8	4.99	55.42	6.04	28.70
Mestizo	2.0	25.37	108.78	24.79	41.92
Other	1.9	14.36	223.32	58.62	80.59
Quintile					
1	2.0	14.62	76.15	16.90	22.68
2	2.0	13.94	122.2	16.28	42.44
3	2.0	9.76	77.91	26.38	33.54
4	1.9	19.62	70.89	30.40	41.22
5	2.1	21.64	217.00	47.89	64.67
Sex					
Male	2.0	12.68	123.38	28.17	45.05
Female	2.0	19.42	139.50	30.87	44.52
Age Cgroup					
0–4	1.8	7.50	51.67	23.00	36.61
5–9	1.6	1.63	65.73	32.02	28.20
10–19	1.8	2.23	84.41	16.46	25.44
20–24	1.5	14.49	45.21	14.45	31.97
25–34	2.2	21.13	122.95	26.70	44.16
35–64	2.3	40.89	265.46	39.24	73.93
65+	3.1	39.11	142.07	40.35	58.03
Belize	2.0	16.23	133.45	29.63	44.74

Source: National Human Development Advisory Committee (2004).

A more accurate picture can be obtained, however, by focusing on results at the district level. Sick people visiting a public facility in Stann Creek and Toledo Districts in 2002 spent less than BZ\$10 in the 30-day period preceding the visit, whereas those living in Corozal District spent between three and four times as much. If the visit was to a private facility, those in Stann Creek and Toledo still spent less than in other districts, but the difference was not as marked. However, those who visited a private health care provider in Belize or Orange Walk District spent a little more than twice as much as those living in the rest of the country. Overall, the sick living in Stann Creek spent considerably less than those in the other districts (Arcia 2009).

An unexpected finding of the survey is the relatively small difference in health care spending between urban and rural dwellers. There are large differences in the costs of health care by age group, however, with costs increasing in direct proportion to the age of the individual treated by the health care system. Thus, adults at least 35 years of age spent between four and five times the average expenditure for a child.

12.3 Government Reform Efforts

In recent years Belize's government has undertaken a reform process that has as basic guiding principles the separation of the regulation, financing, and provision of health services functions, and the outsourcing of the delivery of health services through performance agreements with public primary care providers and contracting of private ones. In 2001 Belize's Social Security Board used noncontributory funds to initiate a National Health Insurance (NHI) pilot project and contractually finance provision of a free package of basic services to registered active social security card holders through public and private primary care providers (PCPs).⁹ PCP teams provide the basic care package at no cost to any social security card holder who is registered in the NHI program, regardless of work status, age, gender, or other characteristic. Each PCP consists of one or more group practices, composed of a general

practitioner, nursing staff, administrative staff, and support services. The NHI Fund pays a uniform monthly capitated amount to the primary care provider for each registered person under its care, and the PCP abides by a health care contract, under a managed-care concept. Performance bonuses are linked to targets of satisfaction, quality, organizational change, and compliance with information requirements.

The pilot project began in Belize City's poor south side and was extended to Stann Creek and Toledo Districts in 2005. As of late 2009, 95 percent of the eligible population of Belize City's south side and 84 percent of the eligible population in the country's southern region were covered by the program. This amounted to 73,000 persons, roughly 22 percent of the country's population. Although no longer considered a pilot intervention, the NHI has not been expanded beyond southern Belize City and Stann Creek and Toledo Districts, and there are, at present, no plans for further expansion or for any form of cost recovery or cost sharing in the existing scheme, because of the cost implications of doing so (see Section 12.5.1).

An evaluation of the NHI pilot in 2007 showed that the NHI's primary care provider model was significantly more efficient in providing primary health care than was public provision by the Ministry of Health. Whereas the Ministry of Health's cost per outpatient visit increased from BZ\$55 in 2001 to BZ\$96 in 2004, then subsequently decreased somewhat to BZ\$80 in 2006,¹⁰ the cost per visit in the NHI pilot areas was less than half this amount, reaching BZ\$32 in 2006.

The quality of services provided through the program is evaluated directly by NHI management through medical audits of all PCPs and has been shown to be improving over time. As for impact, the pilot was evaluated after six months of execution. Out-of-pocket payments were reduced from 60 percent to 25 percent of total spending by beneficiary households. Moreover, access to services improved significantly, and perception of the quality of care increased from a baseline of 20 percent of beneficiaries indicating they were

⁹ All citizens and legal residents in Belize are entitled to a social security number and card.

¹⁰ The cost per outpatient visits of the MOH may be underestimated, as they do not include the costs of drugs and lab services.

receiving the best care possible to more than 60 percent.

Several structural changes to the primary care provider contracts were introduced in FY2008–2009. Promotion and prevention were added as part of the basic care package. A new list of key performance indicators was included in the method for assessing NHI providers' performance, and a section was introduced to monitor contract execution and compliance, including sanctions for contract default. Per-member-per-month capitation rates were lowered, based on costs and quantities verified through the pilot experience and in order to include the marginal costs of rural or temporary clients, despite the fact that new items like promotion/prevention, publicity, and social workers have been included in the basic care package.¹¹

Finding a sustainable financing mechanism for the NHI program continues to be a challenge. Initially, the program was funded almost exclusively by the Social Security Board, out of its short-term funds, without any corresponding contributions from beneficiaries (in contrast to the practice prevailing in the social security programs provided by the Social Security Board). This exhausted the board's short-term funds and was not sustainable. Consequently, in 2006, financing of the NHI program was gradually taken over by Belize's government, with the Ministry of Health making a contribution out of its own budget and the Ministry of Finance contributing 40 percent of the cost directly. In FY2008–2009, the entire cost of the NHI program was absorbed into the central government's budget, although the Social Security Board continues to administer the program through the NHI Fund.

12.4 Conclusions

The literature shows a strong link between health, economic growth, and poverty reduction. Poor health limits the level of human capital significantly and imposes major costs in terms of health care and loss of income, which have negative effects on individual productivity and economic

growth. There is also a documented correlation between increased life expectancy and economic growth (Bloom and Canning 2000). Additionally, the health care costs and lost income associated with medical emergencies can lead to impoverishment.

Belize's main health indicators, life expectancy and infant mortality, are generally better than or on a par with those in other Central American countries and larger Caribbean ones, but on other health indicators, such as access to quality basic health care by the poorest and most vulnerable population, Belize lags behind. Indeed, the main health sector challenge in Belize is to expand quality basic health care, including prevention and promotion, to the poorest and most vulnerable population.

Increased expenditures on health care could relieve current constraints in a number of areas. However, Belize's total expenditures on public health appear appropriate relative to its income. Moreover, the government is facing tight fiscal challenges (see Chapters 1 and 2), and it is unlikely that it would be in a position to increase health care expenditures significantly over the medium term. Hence, the major emphasis in regard to health sector enhancement will have to be on getting better health outcomes from the current levels of resources. Fortunately, the foregoing analysis indicates that there are several avenues through which this could be achieved, and it should arguably be the focus of policy over the medium term.

12.5 Policy Recommendations

12.5.1 *Continue to Strengthen Basic Primary Health Care*

The major policy recommendation offered by this chapter is that Belize continue and deepen the reform process currently underway to allow the health sector to continue to strengthen the provision of basic primary health care. The current main causes of hospitalization in Belize are preventable and highly amenable to primary care

¹¹ The average cost of the package is about BZ\$180 per person per year, with regional differences.

management. In addition, given that an evaluation of Belize's NHI pilot program showed that the PCP model was significantly more efficient in providing primary care than was public provision by the Ministry of Health, it makes sense to use the NHI as the main vehicle for strengthening primary care. The key question is how to do this in a tight budgetary environment.

Current NHI program coverage of about 73,000 beneficiaries in Belize City's south side and Toledo and Stann Creek Districts is projected to change little over 2009–2011, in light of the significant cost implied by a progressive expansion of the NHI program to the rest of the country (Table 12.9). Moreover, eliminating identified gaps between the current NHI package of benefits and the overall national health model would require an expansion of the NHI package to improve services to prevent malnutrition and chronic diseases, specifically education and case management. This would have the effect of further increasing the cost.

In light of the current hard budget constraint, further expansion of the NHI will require that savings be achieved elsewhere in the health system (see below) and that the NHI itself be made as efficient and cost-effective as possible. Existing reforms of the NHI need to be consolidated with further improvements in the management and efficiency of the program's contracting model.

First, eliminating the double accounting of Ministry of Health staff salaries could result in some savings and help finance improvements in the NHI. The Ministry of Health continues to include in its public budget the salaries of personnel covered by the PCP contracts; as the contracts themselves include compensation for the primary

care providers and are also included in the budget, this means the salaries are included twice in the budget (Cercione et al. 2007). Second, there is a need to further align the incentives to general practitioners that private and public PCPs employ. Private PCPs offer these practitioners performance bonuses that public providers do not. Finally, to increase efficiency and consumer choice, a system of cross-payments of monthly capitated amounts among PCPs needs to be adopted, so that payments follow patients who use a PCP with whom they are not registered.

NHI enrollment has up to this point been largely demand driven, thus excluding some of the most vulnerable households living in remote areas; this points to the need to implement proactive measures to increase the enrollment of the population in the country's southern districts by issuing social security cards to eligible individuals and simultaneously holding regional and local events to promote registration, as well as registration drives.

12.5.2 Seek Allocational Efficiencies

Beyond a general strengthening of primary health and some efficiency within primary health care provision discussed above, there is scope for additional efficiencies through improving the allocation of expenditures within the broader health care system in Belize. There appears to be room for improving efficiency by shifting the operational burden from the national to the district level and reducing the burden of administration and other expenditures at all levels, especially at the central offices (laboratories, centralized maintenance, epidemiology, etc.). The Ministry of Health should review its administrative structure to increase its efficiency, since there is apparently substantial duplication on different levels in functions, such as maintenance, operational costs, and the management of materials and supplies.

12.5.3 Improve Cost Recovery

Because a significant proportion of Belize's non-poor receive services at public facilities, a propoor approach through better identification of the poor and nonpoor and a more explicit policy of cost recovery would improve the equity of public health expenditures.

TABLE 12.9. RESOURCE REQUIREMENTS TO MAINTAIN AND EXPAND NHI PROGRAM COVERAGE, 2009–2011

(BZ\$ millions)

	2009	2010	2011
Maintaining current coverage (73,000 people)	14.8	15.2	15.6
Reaching 50 percent of total population by 2010		30.8	31.6
Reaching 80 percent of total population by 2011		48.5	49.7

12.5.4 Strengthen Education and Prevention Information

The growing importance of noncommunicable diseases among health care issues in Belize requires increased emphasis on preventive nutrition from early ages and through the life cycle, encouraging healthy lifestyles, which entails changing sedentary living and poor eating habits. In addition, provision of micronutrients and securing adequate feeding patterns for infants and youngsters, including the promotion and protection of exclusive breast-feeding for infants up to six months, are highly cost-effective interventions that would provide value added in education and prevention health services. The introduction of physical education, sports, and regular exercise in school curriculums, as recommended in the September 2007 Caribbean Community Regional Summit on Chronic Non-Communicable Diseases, should be considered as well.

12.5.5 Improve Data

As noted throughout the chapter, there is a need to improve the quality and reliability of data generated by the Belize Health Information System

as well as its data-processing capacity, to support evidence-based formulation of policies and interventions. Improvements in this area could be achieved through the addition of selectively chosen strategic personnel at the central and local levels and through the training of public officers in knowledge management for policy decision-making purposes.

Belize should make an effort to improve data registry and data analysis, as well as the capacity to follow up cases, to generate empirical evidence on rates of HIV infection as well as AIDS rates. Information on actual AIDS survival rates over time and death rates should also be compiled via follow-up data gathering, as well on how different scenarios affect the dynamics of survival and death rates. This information is important for policy decisions and for pursuing preventive/curative actions through the media, the educational system, health facilities, local governments, and other relevant stakeholders. Educational and behavioral campaigns in this area are needed, at all education levels, beginning in elementary schools, and in the national media, to reduce infection rates and control the country's AIDS epidemic.

Appendix. Public Expenditures on Health, 2006–2007 and 2007–2008 (BZ\$)

Budget category	Projected, 2006–2007	Percent of total	Proposed, 2007–2008	Percent of total
19017—General Administration	15,856,800	28.56	20,159,588	31.15
Personal emoluments	902,644		992,179	
Travel and subsistence	79,434		71,223	
Materials and supplies	219,900		25,700	
Operating costs	646,800		480,181	
Maintenance costs	146,600		177,800	
Public utilities	1,117,283		1,000,000	
Payments to contractors	106,379		500,000	
Grants (KMH, others)	12,637,760		16,912,505	
19021—Director of Health Services	2,748,840	4.95	1,433,347	2.22
Personal emoluments	1,303,363		777,874	
Travel and subsistence	164,162		47,098	
Materials and supplies	345,185		68,322	
Operating costs	909,930		480,353	
Maintenance costs	23,200		49,700	
Training	3,000		10,000	
19031—Belize District Health Services	4,978,814	8.97	5,862,283	9.06
Personal emoluments	4,421,905		4,480,371	
Travel and subsistence	75,100		164,320	
Materials and supplies	277,611		337,980	
Operating costs	133,100		205,185	
Maintenance costs	27,600		128,395	
Training	40,000		40,000	
Public utilities	3,498		6,032	
Contributions and subscriptions			500,000	
19041—Epidemiology Unit	582,100	1.05	314,400	0.49
Personal emoluments	502,800		235,160	
Other expenditures	79,300		79,240	
19074—Cayo District Health Service	1,958,625	3.53	2,256,592	3.49
Personal emoluments	1,775,691		2,001,702	
Travel and subsistence	51,900		68,850	
Materials and supplies	58,131		87,894	
Operating costs	45,779		54,097	
Maintenance costs	15,904		37,409	
Public utilities	11,220		6,640	
19083—Orange Walk District Health Service	4,631,533	8.34	5,503,270	8.50
Personal emoluments	4,200,974		4,558,117	
Travel and subsistence	89,208		102,600	
Materials and supplies	153,000		189,750	
Operating costs	127,020		155,000	
Maintenance costs	41,331		123,792	
Training			10,000	
Public utilities	20,000		40,011	
Contracts and consultancies			324,000	

Continued on next page

Appendix. (continued)

Budget category	Projected, 2006–2007	Percent of total	Proposed, 2007–2008	Percent of total
19092—Corozal District Health Service	2,592,602	4.67	2,939,759	4.54
Personal emoluments	2,313,122		2,547,977	
Travel and subsistence	67,000		82,698	
Materials and supplies	61,500		115,089	
Operating costs	103,000		108,100	
Maintenance costs	32,980		58,258	
Training			14,544	
Public utilities	15,000		13,093	
19105—Stann Creek District Health Service	3,490,052	6.29	3,928,050	6.07
Personal emoluments	3,153,217		3,480,380	
Travel and subsistence	70,000		98,600	
Materials and supplies	85,175		106,000	
Operating costs	98,000		119,000	
Maintenance costs	28,100		65,270	
Training	6,000		6,000	
Public utilities	49,560		52,800	
19116—Toledo District Health Service	1,908,545	3.44	2,230,264	3.45
Personal emoluments	1,689,820		1,896,623	
Travel and subsistence	63,800		76,360	
Materials and supplies	50,425		103,960	
Operating costs	62,000		73,180	
Maintenance costs	22,500		42,641	
Training			10,000	
Public utilities	20,000		27,500	
19121—Medical Supplies	10,955,964	19.73	8,285,831	12.80
Personal emoluments	212,500		207,069	
Travel and subsistence	6,000		20,496	
Materials and supplies	10,719,404		8,032,406	
Operating costs	10,500		14,500	
Maintenance costs	7,560		11,360	
19131—Medical Laboratory Services	704,423	1.27	751,108	1.16
Personal emoluments	665,623		661,437	
Other expenditures	38,800		89,671	
19141—National Engineering and Maintenance Center	753,029	1.36	827,675	1.28
Personal emoluments	568,677		593,375	
Other expenditures	184,352		234,300	
19151—Planning and Policy Unit	459,446	0.83	402,300	0.62
Personal emoluments	435,646		353,050	
Other expenditures	23,800		49,250	
19168—Belmopan Hospital	3,611,351	6.50	5,123,840	7.92
Personal emoluments	3,310,819		4,418,514	
Travel and subsistence	63,000		71,248	
Materials and supplies	100,000		139,740	

Continued on next page

Appendix. (continued)

Budget category	Projected, 2006–2007	Percent of total	Proposed, 2007–2008	Percent of total
Operating costs	67,000		85,000	
Maintenance costs	20,200		32,864	
Public utilities	10,912		16,312	
Contracts and consultancy	39,420		360,162	
19178–HIV/AIDS	0	0.00	1,145,378	1.77
Personal emoluments			181,378	
Other expenditures			964,000	
19188–Maternal and Child Health	0	0.00	1,352,790	2.09
Personal emoluments			134,216	
Other expenditures			1,218,574	
19198–Environmental Health	0	0.00	423,634	0.65
Personal emoluments			67,155	
Other expenditures			356,479	
19208–Regulatory Unit	0	0.00	234,814	0.36
Personal emoluments			169,055	
Other expenditures			65,759	
19218–Belize Health Information System	0	0.00	637,146	0.98
Personal emoluments			123,510	
Other expenditures			513,636	
19228–Vector Control	0	0.00	543,830	0.84
Personal emoluments			44,095	
Other expenditures			499,735	
30241–National Drug Abuse Control Council	297,095	0.54	351,972	0.54
Personal emoluments	247,995		223,332	
Other expenditures	49,100		128,640	
Total	55,529,219	100.00	64,707,871	100.00

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Education Sector: Analysis and Options for a Policy Agenda

13.1 Introduction

Over the past two decades Belize has made great strides in improving education coverage and has made some progress in internal efficiencies. Enrollment in primary education is almost universal, and secondary education coverage has doubled since the early 1990s. However, the country still faces major challenges in terms of access. Preschool, secondary, and higher education have yet to reach the lowest income quintiles, and enrollment at the primary level shows signs of decline. The preschool gross and net enrollment rates of around 30 percent are among the lowest in Latin America and the Caribbean and considerably below the regional average gross enrollment of 65 percent.¹ Overall, only some 45 percent of secondary-school-aged children are enrolled, far below the regional average of 70 percent. Equity is an important issue at this level of education, as children from the wealthiest quintile are 2.2 times more likely to be enrolled than those in the poorest quintile.²

Beyond additional quantitative advances, an orientation towards qualitative matters is necessary. Learning levels tend to be low at both the primary and secondary levels, particularly in mathematics. Striking inequalities in test scores persist between small rural schools—which tend to serve students from socioeconomically and ethnically disadvantaged backgrounds—and large private urban schools, which primarily serve students from more socioeconomically advantaged backgrounds. The deficiencies in the quality of education are troubling considering a growing body of research that indicates that education quality is more important than education quantity for economic growth.³

In the face of these challenges, Belize is tasked with improving education quality and equity and increasing enrollment and completion rates. In view of the country's current budgetary constraints, any solutions to these education sector challenges must be as fiscally neutral as possible. This chapter analyzes Belize's education sector—from preprimary through secondary education—and presents a series of policy options that may inform a future agenda for system reform.

¹ Gross enrollment expresses the number of students enrolled at a particular level of education as a percentage of the number of students in the age group defined for that level of education; thus it can exceed 100 percent if students are enrolled outside the typical age group for that level. For example, secondary education in Belize is defined as being for those between ages thirteen and sixteen (see Section 13.2.1); the enrollment of students past the age of sixteen in secondary education could make the gross enrollment ratio exceed 100 percent. Net enrollment, by contrast, expresses the number of students enrolled at a particular level of education who are in the defined age group for that level, as a percentage of the total population in that age group. For Belize, for example, the net secondary enrollment would be the percentage of Belizeans between ages thirteen and sixteen who are enrolled at the secondary level. The maximum net enrollment is (theoretically) 100 percent.

² This chapter uses Ministry of Education administrative data for the 2008–09 academic year. International comparisons are based on UNESCO's *Education for All Global Monitoring Report 2009*.

³ Hanushek and Woessmann (2009) develop a new common metric to track student achievement across countries and find strong evidence that there is a causal relationship between cognitive skills and growth. Barro (2001) finds that increased numeracy skills have greater effect on economic growth than the level of schooling attained.

13.2 Sector Characteristics and Trends

13.2.1 Levels of Education

The structure and management of Belize's education system have remained almost unchanged since independence. Great Britain's influence is still present: Belize's education system shares more characteristics with those in the Caribbean than with those elsewhere in Central America. The country introduced preschool education for the three- to four-years age group after independence in 1981. In the early twentieth century, the colonial government made primary education compulsory. This level of education is divided into two years of infant education for five- and six-year-olds, and six standards (academic years) for the seven- to twelve-years age group. Secondary education is divided into four forms (academic years) and provides instruction for the thirteen- to sixteen-years age group. Secondary education is not compulsory, but in theory this level of education is free; in reality, a majority of secondary students pay school fees.

13.2.2 Size of Education System and Enrollment Levels

Over the past decades there has been a small but steady expansion in the number of schools, teachers, and enrolled students. As indicated in Table 13.1, at present there are 548 educational institutions in the country, most at the primary level, which comprises mostly rural schools (72 percent). Although no official data are available, around half of the primary-level institutions are believed to be multigrade schools. At the second-

ary level 61 percent of schools are located in urban areas.

As noted in the chapter introduction, Belize's gross and net preschool enrollment rates of below 30 percent are roughly half the Latin American average. At the primary level, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (2009a) reports that net enrollment was 97 percent in 2006, indicating that Belize is poised to achieve the Millennium Development Goal of universalization of this level of education. However, these internationally reported data are inconsistent with Ministry of Education data indicating that net preschool enrollment was 88.1 percent in the 2005–06 academic year, down by almost seven percentage points from the 2001–02 academic year.

Until independence in 1981 secondary educational opportunities were limited mainly to people of higher socioeconomic status. Progress in expanding secondary education coverage has been slow. Gross enrollment has remained at around 60 percent since 2001, and net enrollment has remained around 45 percent in the same time period. The population eligible to attend secondary education is expected to increase by around 13 percent to some 30,600 students by 2015. This demographic shift will place additional demands on the system, as an estimated 1,000 students per year should be enrolled.

13.2.3 Institutional Structure

More than those in other Caribbean countries, the Belizean education system has been characterized by strong church participation (Tsang, Fryer, and

TABLE 13.1. SCHOOLS, TEACHERS, AND ENROLLMENT, 2008–09

Education level	Schools			Teachers			Enrollment		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Preschool	83	99	182	216	162	378	3,503	2,531	6,034
Primary	83	211	294	1,345	1,603	2,948	30,815	35,920	66,735
Secondary	31	20	51	958	314	1,272	13,539	4,076	17,615
Tertiary	7	4	11	182	36	218	2,736	655	3,391
Vocational	4	6	10	44	45	89	394	403	797
Total	208	340	548	2,745	2,160	4,905	50,987	43,585	94,572

Source: Ministry of Education (2009).

Arevalo 2002). The church-state partnership was institutionalized in the nineteenth century, but it was not until the 1960s that the state made consistent efforts to assume control over the education system. Although the system continues to be managed through a partnership between the state and the church, the influence of the church varies by level of education (Rapalo 2007).

The government influence in preschool education is recent. Whereas in 2000 there were no government-run preschools in Belize, today close to one-fifth of preschool institutions are government schools. Less than 19 percent of primary schools are government operated, with the remaining schools run by various religious denominations. At the secondary level, government schools account for some 31 percent of schools, an additional 39 percent are operated by religious denominations, and the remaining schools are run by private organizations or communities.

The managing authorities of the schools assume the responsibility for hiring teachers and managing the resources they receive for operation costs at the primary level and salaries and tuition grants at the secondary. At the primary level, schools are expected to implement a national curricular program, but the implementation is uneven. At the secondary level, the schools' managing authorities define their own curricular programs, resulting in very important variations in quality.

Belize's government is generally unable to fulfill its regulatory functions, and many schools fail to comply with operational and reporting requirements. Ministry of Education centers in each district are tasked with supervising the schools, but in practice these lack the capacity to do so. As a result, implementation of Ministry of Education regulations varies greatly across districts and schools. The problem is particularly noticeable in relation to the teaching force, including terms of employment and disciplinary action. Although the Ministry of Education has a standard contract that is required to be used by all public schools, managing authorities often make adjustments and omit or add sections regarding conditions of service. As a result terms of employment vary greatly among schools (Stewart 2008). In the same way, the Ministry of Education does not hold the managing authorities accountable for

meeting established performance standards. As information sent to the Ministry of Education is frequently incomplete, the government lacks any real oversight of school quality.

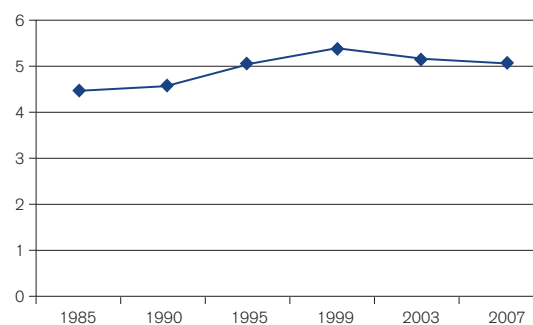
13.2.4 Financing of Education

Recent Belizean governments have consistently prioritized education, spending around 5 percent of gross national product (GNP) on education. As indicated in Figure 13.1, public spending on education increased from the mid-1980s until about 2000, then decreased marginally through 2007. Despite the recent small declines, however, the net increase over the period (from 4.5 to 5.1 percent of GNP between 1985 and 2007) reflects a strong government commitment to education, particularly considering the ongoing government program to reduce the overall budget deficit.

Most of the public education budget is used to finance salaries at the primary and secondary level. At the primary level, 100 percent of salaries of teachers in both public and nonpublic schools are financed by the Ministry of Education. The schools' managing authorities also receive a small amount of funds per student for operation costs. At the secondary level, the Ministry of Education pays 70 percent of teacher salaries, and also finances enrollment-based tuition grants to denominational and aided schools. However, there are large differences in the size of the allocation per student. The unequal allocation comes from funding formulas based on historic tuition fees charged by each secondary school. More affluent schools that charged higher tuition fees when the grant was instituted now receive higher allocations per student as a result.

FIGURE 13.1. EDUCATION EXPENDITURE

(percentage of GDP)



Source: UNESCO (2009b).

Public financing for the education system is supplemented by churches, communities, and private organizations, which pay for maintenance of the schools they operate, as well as 30 percent of teacher salaries at secondary schools. Despite the substantial public and church contributions, many schools at both the primary and secondary levels charge fees. At the secondary level, more than 56 percent of students pay school fees that, on average, amount to BZ\$450 per student (Table 13.2). Schools' practices in regard to charging fees vary widely across districts. While a majority of students in Orange Walk (98.2 percent), Toledo (75.4 percent), and Corozal (63.5 percent) pay school fees, in Cayo only 6 percent do so.

Thus, because of the fees that many schools charge, the private cost of schooling in Belize is high, despite government subsidization. Table 13.3 indicates that at each level of education, Belizean parents on average spend close to the same amount as the government. In spite of the ministry's transfers to schools in the form of tuition grants, one-quarter of the private spending on education is used to pay school fees. Other important private education expenses include transportation and books, each of which accounts for slightly above 16 percent of overall household education spending.

TABLE 13.2. AVERAGE ANNUAL SECONDARY EDUCATION SCHOOL FEES, 2007–08 (BZ\$)

Form	Fee
1	437.1
2	450.2
3	485.9
4	526.7
Total (four forms)	1,829.9

Source: Ministry of Education (2009).

TABLE 13.3. AVERAGE SPENDING PER STUDENT BY LEVEL OF EDUCATION, 2006 (BZ\$)

	Primary	Secondary	Postsecondary
Public	1,120	1,971	1,225
Household	1,062	1,926	1,260
Total	2,182	3,897	2,485

Sources: Ministry of Education (2009). Household data from World Bank (2002).

Belize's heavy reliance on private resources to finance education results in high costs to households and raises questions regarding access constraints among poorer families, which in turn raises questions of equity. The high private cost of education has been identified as one of the main access constraints to the secondary level (Rapalo 2007). Ministry transfers to schools in the form of salary and tuition grants are aimed at increasing coverage. However, in spite of these grants, which were designed to minimize the private financial burden of secondary education, the design of the current financing system inherently results in inequities. Larger schools in urban areas get more funding because they historically have higher fees and pay higher teacher salaries.

Furthermore, although fees tend to be higher for schools located in socioeconomically wealthier areas, the proportion of household expenditure represented by the fees is much higher in the poorest quintile. Fees paid for secondary education range from 10.8 percent of household expenditure in Stann Creek to over 19 percent in Toledo and Belize and 28 percent in Orange Walk. At the secondary level, the private cost of sending a child to school is equivalent to one-third of the poorest households' per capita expenditure, compared to 7.8 percent of the per capita expenditure of the wealthiest quintile. Thus, to increase both the efficiency and the equity of the country's education system, the mechanism for allocating resources to the system needs to be reformed so that it adequately targets the population segments that face the greatest obstacles to school attendance.

13.2.5 Teaching Force

In 2008–09 the teaching force in the Belize education system from preschool through tertiary education was composed of more than 4,900 teachers, an increase of 24 percent since 2001. Despite substantial government efforts to train teachers, a large proportion of Belize's teaching force remains untrained. In the 2008–09 academic year, the proportion of trained teachers in primary education—defined as one full-time year or two and a half years of distance training to complete a Level I certificate—was 42.5 percent. The same year, the proportion of trained teachers in secondary education—defined as Bachelor of Education in subject area—was 29.7 percent. As indicated

in Table 13.4, there are great differences between districts. At the primary level, the proportion of trained teachers in Toledo is slightly less than half that in Corozal District. Similarly, at the secondary level, the proportion of trained teachers in Stann Creek is considerably less than half the proportion of trained teachers in Belize District.

Since 2002, more than 600 teachers have completed their preservice training. However, this has had a limited effect on a national scale, as many of the approximately 1,000 new teachers who joined the teaching force during the same time period were untrained. Some 75 to 80 teachers leave the profession each year. This attrition is in line with the OECD countries that have the lowest attrition rates: Italy, Japan, and Korea (OECD 2005). The low attrition may be the result of teacher salaries that are relatively favorable compared to those in other countries in the region.

The very limited availability of teachers trained in bilingual teaching practices aggravates the problem of large numbers of untrained teachers. In spite of the substantial presence of particularly Mayan and Garifuna ethnic groups, Belize has no history of bilingual education. Teacher training fails to provide instruction in Mayan and Garifuna literacy, bilingual pedagogy, and approaches for attracting and retaining indigenous student populations. Even in predominantly ethnic enclaves, teachers often possess limited written second-language skills.

Hiring practices that do not always select the most-qualified candidates exacerbate the limited availability of trained teachers. Although Belize's Education Act requires that all teachers be licensed and appointed by the Ministry of Education, in practice the Ministry of Education has no real influence over decisions regarding the hiring of teachers, as noted previously, nor does it have any de facto control over dismissals or reassignments of teachers who are not performing up to standard. Anecdotal evidence suggests that some managing authorities give preference in the teaching hiring process to certain personal characteristics—such as lifestyle and religious affiliation—over level of training and years of experience.

13.2.6 Education Outcomes

Despite relatively high government investments in education by the government, education outcomes in Belize are disappointing in terms of access, quality, and equity, particularly at the secondary level. As indicated in Table 13.5, spending on education is only slightly below average public expenditure in the Caribbean and is above the average spending in Latin America. Yet the proportion of youth between 15 and 19 years of age who complete ninth grade (Form I) is merely 17 percent, lower than that in most other countries in the region, with only three Latin American and Caribbean countries ranking lower: Panama (9 percent), Guatemala (11 percent), and Haiti (16 percent).⁴ The rate is substan-

TABLE 13.4. TRAINED TEACHERS BY DISTRICT, 2008–09
(percent)

	Primary Education			Secondary Education		
	Urban	Rural	Total	Urban	Rural	Total
Belize	39.7	39.1	39.6	39.8	35.4	39.4
Cayo	41.4	34.6	37.6	24.5	22.7	24.2
Corozal	66.7	64.4	65.0	35.2	26.5	29.6
Orange Walk	58.0	53.1	54.9	23.6	21.7	23.3
Stann Creek	50.5	28.6	34.5	21.1	17.5	19.4
Toledo	53.4	26.7	31.7	26.5	26.3	26.4
Total	45.1	40.4	42.5	31.2	25.2	29.7

Source: Ministry of Education (2009).

⁴ The comparison is made among 19 countries for which data are available for this indicator: Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Guatemala, Guyana, Honduras, Haiti, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, and Venezuela.

TABLE 13.5 EDUCATION EXPENDITURE AND NINTH GRADE COMPLETION, BY COUNTRY

	Total public expenditure on education (% of GDP)	Total public expenditure on education (% of total government education expenditure)	Ninth grade completion rate (% of those aged 15–19)
Belize	5.1	18	17
Costa Rica	5.0	21	60
Guatemala	3.0	n/a	11
Haiti	n/a	n/a	16
Jamaica	5.5	9	80
Mexico	4.8	26	65
Peru	2.5	n/a	69
Panama	3.8	n/a	9
Caribbean average	5.8	15	n/a
Latin America average	4.0	15	48

Sources: UNESCO (2009a); Ministry of Education (2009).

Note: Year of data varies by country and ranges from 2004 through 2008. n/a = no data available.

tially poorer than that in some countries of the region, including Jamaica (80 percent), Peru (69 percent), and Costa Rica (60 percent). Completion rates are even lower among the economically disadvantaged, with only 4.7 percent of youth from the first quintile, compared with 40.4 percent in the fifth quintile, completing secondary education (Näslund-Hadley, Arcia, and Cerpone, forthcoming).

Although children have access to primary education regardless of their economic status, the poor face barriers to secondary education, as discussed in the previous subsection. As indicated in Table 13.6, in 2002 net secondary enrollment was 34.6 percent in the poorest consumption quintile, compared with 75.2 percent for children in the wealthiest.

TABLE 13.6. PRIMARY AND SECONDARY EDUCATION ENROLLMENT RATES BY CONSUMPTION QUINTILE

Quintile	Primary net enrollment	Secondary net enrollment
1	98.6	34.6
2	98.9	50.1
3	99.3	65.6
4	99.6	67.2
5	100.0	75.2
Total	88.1	45.3

Sources: Household data from World Bank (2002); Ministry of Education (2009).

Race and geographic area are key determinants of school attendance in Belize. As indicated in Table 13.7, youth from the Garifuna, Maya, and Mestizo ethnic groups face greater obstacles to attending secondary education than the Creole population. The net enrollment rate of Creole youth is 1.6 times that for Garifuna and Mayan youth. Similarly, the net enrollment rate in urban areas is 1.3 times that in rural areas.

The country's dropout and repetition rates show that education quality is also a concern. The gross primary education enrollment rate is 123 percent, indicating that the number of students enrolled at the primary level—independent of age—exceeds

TABLE 13.7. RATIO OF NET SECONDARY ENROLLMENT RATES BY ETHNIC GROUP AND GEOGRAPHIC AREA

Creole	1.6
Garifuna	1.0
Maya	1.0
Mestizo	1.2
Other ethnic group	1.5
Urban	1.3
Rural	1.0

Source: World Bank (2002).

Note: Numbers in table represent ratios of net enrollment rates for the various groups. The lowest net enrollment rates are used as denominators in the ratios; for example, urban over rural, and Creole over Maya and/or Garifuna. If the ratio was 1 for all groups, there would be perfect equality.

TABLE 13.8. AVERAGE PRIMARY EDUCATION REPETITION AND DROPOUT RATES BY DISTRICT AND SEX, 2007–08
(percent)

District	Repetition			Dropout		
	Male	Female	Total	Male	Female	Total
Belize	6.3	3.6	5.0	0.4	0.4	0.4
Cayo	9.3	6.7	8.0	1.4	0.9	1.1
Corozal	8.3	6.1	7.2	1.1	0.8	0.9
Orange Walk	8.2	6.7	7.5	1.0	0.9	0.9
Stann Creek	10.4	7.3	8.9	1.3	1.2	1.2
Toledo	10.0	8.1	9.1	1.1	1.0	1.0
Total	8.4	6.0	7.2	1.0	0.8	0.9

Source: Ministry of Education (2009).

the population in the 5 to 14 years age group by almost 25 percent. Although dropout rates remain under 2 percent in all districts, the repetition rates are elevated (Table 13.8). As in other developing countries, the problem is most severe in the first grade—around 17 percent—but the rate remains high as well in other grades. The average primary repetition rate of 7.2 percent is higher than that in other Caribbean countries. As a direct result of the high repetition rates, the average completion rate—the proportion of students entering primary education who are expected to complete it in the prescribed eight years—is a mere 42.6 percent.

Whereas Belize's overall repetition rate in secondary education of 7.7 percent is around average among Caribbean and Central American countries, its 10.5 percent dropout rate is among the highest (Table 13.9). Only a little less than half the students who enter ninth grade (Form

I) are able to complete their secondary education in the predicted four years. At the secondary level, the cost of repetition and dropout amounts to BZ\$2,253,420, the equivalent of one year of schooling for 1,143 students (8.5 percent of the student population).

Enrollment rates at the primary level show no significant gender differences, but a disproportionate number of males drop out (see Table 13.8). As a result, the primary education completion rate is 35.8 percent for males compared to 44.5 percent for females. At the secondary level both net and gross enrollment rates are close to five percentage points higher for females. Probably as a result of the disparities at these lower levels, females account for 61.6 percent of enrollment at the tertiary level and outnumber males even in programs that traditionally tend to be male dominated, such as business and natural sciences.

TABLE 13.9. AVERAGE SECONDARY EDUCATION REPETITION AND DROPOUT RATES BY DISTRICT AND SEX, 2007–08
(percent)

District	Repetition			Dropout		
	Male	Female	Total	Male	Female	Total
Belize	8.1	6.3	7.1	13.7	8.6	10.9
Cayo	9.7	7.0	8.3	14.6	10.4	12.4
Corozal	10.4	6.6	8.5	13.2	9.2	11.1
Orange Walk	10.9	7.9	9.3	11.1	6.0	8.5
Stann Creek	9.2	7.6	8.4	9.9	7.1	8.5
Toledo	4.9	3.9	4.4	7.5	7.6	7.6
Total	8.9	6.7	7.7	12.5	8.6	10.5

Source: Ministry of Education (2009).

TABLE 13.10. BEST AND WORST SCHOOLS ACCORDING TO PERFORMANCE ON PRIMARY SCHOOL EXAMINATION, 2005

Ranking	District	Management	Urban /rural	School name	Enrollment	Mean	Number of teachers	Number of trained teachers
1	Belize	Private	U	Hummingbird Elementary	154	324.1	13	13
2	Belize	Private	U	Belize Elementary	381	320.1	25	8
3	Belize	Private	U	Bernice Yorke	147	305.8	13	0
286	Toledo	Mennonite	R	Jordan Mennonite	35	115.5	4	0
288	Belize	Anglican	R	St. Stephen's	39	110.5	2	1
289	Toledo	Mennonite	R	Blue Creek Mennonite	13	47	2	0

Source: Ministry of Education (2005).

Belize's sustained high levels of spending in the sector have not translated into better education outcomes in terms of student learning. Between 2007 and 2009, more than 40 percent of participating students earned less than satisfactory ratings in English in the Primary School Examination, which is administered to some 70 percent of students at the primary level. During the same time period, more than 60 percent of participating students earned less than satisfactory ratings in mathematics. At the secondary level, test scores are also low, especially considering the overrepresentation of students with aspirations to tertiary education in the testing pool. In 2008, only 60 percent of test takers achieved at least satisfactory ratings on the Caribbean Council Examination in English, and 67 percent of participating students achieved at least satisfactory on the mathematics exam.⁵ The highest-performing schools in Belize, based on standardized test results, tend to have lower student-teacher ratios, higher proportions of trained teachers, greater financial resources, better (i.e., urban) locations, and larger sizes. By contrast, the worst-performing schools are located in rural areas and have smaller student populations and less-qualified teachers. However, as can be seen by the third-ranked school in Table 13.10, there are important exceptions: schools without trained teachers can also rank high.

13.3 Reform Efforts

Although the government of Belize recognizes the urgency of improving coverage at all levels of education, as demonstrated in particular by the sustained high levels of financial support for the country's education system over the past two decades, even in an atmosphere of serious budget constraints, its goals are unlikely to be achieved in the time frames established in the country's planning documents. At the preprimary level, the National Poverty Elimination Strategy and Action Plan (NPEAP) 2007–2011 sets out to provide early childhood education to 50 percent of preschool-aged children by 2010. However, the government has been unable to train the teachers and provide the infrastructure required for the approximately 150 new preschools needed to achieve this goal. As a result, since the adaptation of the NPEAP in 2007, net enrollment in preprimary education has remained among the lowest in the region, at less than 30 percent. Similarly, at the secondary level, a principal NPEAP objective is universal coverage in secondary education by 2011. However, since the adaptation of the NPEAP, access to secondary education has remained around 45 percent.

To address Belize's substantial shortage of trained teachers, the government has made considerable

⁵ The Caribbean Council Examination, the principal international standardized test used at the secondary level in Belize, tests student knowledge on a wide spectrum of subject areas. Although the test is not compulsory, access to tertiary education requires a passing rating on the tests for at least five of the subjects covered by the examination, two of which must be English and mathematics. Thus students who hope to pursue tertiary education are overrepresented in the test-taking population, and if that overrepresentation could be factored out of the test scores, the passing rates on the English and mathematics examinations would likely be considerably lower than 60 and 67 percent, respectively.

efforts to train and retain more teachers. The country's teacher training system is in a constant state of reform, and the number of students enrolled in the Faculty of Education has more than tripled in recent years. However, as discussed earlier in the chapter, as a direct consequence of the hiring of untrained teachers, the proportion of trained teachers in the country's teaching force remains unchanged despite the government's efforts. To reach the government goal, established close to two decades ago as part of the Belize Primary Education Development Project, of increasing the representation of trained teachers to 80 percent, the proportion at the primary level would have to almost double. If the same goal is applied to the secondary level, the proportion of trained teachers would have to almost triple.

13.4 Policy Options

The foregoing review of the Belize education system reveals that in spite of a sustained elevated level of education expenditure, glaring inequalities in access and quality persist, particularly at the secondary level. The successful approaches of other countries suggest a number of policy options for addressing the challenges associated with these inequities.

13.4.1 *Strengthen Quality Assurance Functions*

Global research on school-based management structures generally presents a wide spectrum of advantages of a decentralized school management model, including increased parental involvement, fewer bottlenecks in procurement processes, and greater local ownership. However, the literature also emphasizes the importance of guidance and oversight of school-based management systems by a central body. Countries that are most successful in generating and supporting student learning tend to have education ministries that carry out some degree of quality assurance, including establishment and communication of educational standards, definition of criteria and instruments for performance measurement, development of structures for reporting as well as education management indicators and statistics, maintenance of information systems, and evaluation of performance based on international standards.

Ensuring quality education in Belize will require that the Ministry of Education develop quality standards by which the country's schools can be held accountable and that the Ministry's capacity to monitor compliance with those standards and ensure accountability through appropriate procedures be strengthened. These procedures should lay out the steps to be followed when there is a lack of compliance or when schools perform beyond required standards and merit recognition or awards. The country's district education centers would necessarily constitute a cornerstone of such an improved quality assurance framework. These entities must be given the power and resources not only to execute their supervisory functions, but also to provide concrete technical support and guidance to school directors and teachers.

As another important step towards assuming a strengthened quality assurance role, the Ministry of Education should reinforce the use of national, regional, and international assessments. Although Belize has a relatively long-standing tradition of administering both the Caribbean Council Examination and national assessments, the results are rarely used for education planning. Universally applied tests, in particular, should be widely disseminated and used as a tool for identifying where schools are failing and better target policies to improve teaching and administrative practices. It is also critical that parents have routine access to test scores so that they can monitor both their children's learning and the relative performance of the schools their children attend.

To benchmark its performance against international standards and establish medium- and long-term targets, Belize should also participate in international standardized learning assessments, such as the Second Regional Comparative and Explanatory Study (SERCE), the Trends in International Mathematics and Science Study (TIMSS), and the Programme for International Student Assessment (PISA). Participation in these assessments will enable comparisons beyond the Caribbean and allow Belize to adopt specific targets for the proportion of students that should perform at the higher proficiency levels.

Perhaps the most important area in which the Ministry of Education's quality assurance functions should be enhanced is teaching services. In

the English-speaking Caribbean and other Commonwealth countries, teaching services councils tend to exercise responsibility for appointments, licensing or accreditation, and disciplinary matters. Based on a review of the experiences of general teaching councils, teaching services commissions, and other entities with similar roles and responsibilities, Stewart (2008) identifies a series of important advantages of these organizations. Perhaps the most important lesson for Belize is that even in highly decentralized education systems, the existence of these bodies has resulted in increased levels of accountability and compliance. Other benefits of such commissions or councils include the establishment or strengthening of standards for entry into the profession, a more-structured framework for disciplinary action and handling of teacher complaints, and improved ability to track the status of teachers. Notwithstanding these benefits, teaching commissions and councils also present a series of challenges, including the cost of establishing an efficient body, lack of interest among teachers in getting licensed or accredited, and inadequate registration database systems.

Taking on the functions put forward above would imply a significant increase in the roles and responsibilities of Belize's government. Successful assumption of these undertakings would require considerable capacity building across the entire education system.

13.4.2 Strengthen the Teaching Force

As has been made clear throughout the chapter, increasing the proportion of trained teachers is a key issue for improving the quality of education in Belize. A simple way to do this would be to enforce the Education Act regulation that prohibits hiring teachers without proper qualifications. However, this regulation is not easily implemented in an education system that does not produce enough trained teachers. In addition, Belize's teacher-training institutions need to provide instruction in Mayan and Garifuna literacy as well as bilingual pedagogy to prepare teachers for the particular educational needs of children from these ethnic backgrounds.

Reaching the government target of raising the proportion of trained teachers to 80 percent will

require the establishment of an in-service teacher training program. A distance in-service training program would be an interesting option that would also make it easier for teachers in rural areas—where the proportion of untrained teachers is higher—to comply with the Education Act requirement of continuous professional development.

Belize also needs to establish a system that links teacher performance to student learning. Internationally, experiments with performance-based pay have had mixed results, including positive effects in Chile and Brazil, but no effect in Mexico. The design and size of the incentives is critical, as these must be substantial enough to be considered worthwhile (Vegas 2007). The government has already modified the salary structure to motivate teachers to complete their training, but the Ministry of Education may want to experiment with additional modifications to the salary structure to encourage teachers to excel. A regional comparison shows teacher salaries in Belize are high, however, a more flexible pay scale might motivate teachers to improve performance, aid in retaining qualified teachers, and encourage teachers to accept assignments in remote areas. The salary structure could, for example, reward teachers whose students perform well under demanding conditions, such as multigrade schools in rural areas. The Ministry of Education should also experiment with nonmonetary incentives, such as distinctions for extraordinary performance and providing opportunities for further study.

13.4.3 Improve Enrollment and Achievement among Disadvantaged Populations

A growing body of research and empirical evidence indicates that high-quality preschool education can improve readiness to learn and timely entry into primary education (see, for example, Heckman 1999 and Williams 2002). Early intervention can compensate for a negative home environment, and early childhood programs have been shown to have an effect on enrollment and achievement years after participation. In light of this evidence, preschool opportunities in Belize should be expanded to a broader segment of the population. Since the developmental impacts of initial education have been found to be most pro-

nounced among disadvantaged children, the first target should be to provide at least one zero grade in all primary schools located in socioeconomically disadvantaged communities. The education offered needs to be strictly monitored and evaluated to ensure high-quality services and developmental impacts.

Despite the absence of international standards on secondary education enrollment rates, many countries aim for universal secondary coverage. At the level of the individual, secondary education is increasingly necessary to obtain employment, and at the national level, it is central to productivity and international competitiveness. The greatest challenge for Belize in regard to secondary education is to improve enrollment and achievement among the poor and the Garifuna, Maya, and Mestizo ethnic groups. The country's problems in regard to access to secondary education are related not only to the lack of infrastructure and the high private cost of education—mainly for books, fees, and in some districts transportation—but also to the low quality and relevance of the education offered by many schools. When the education offered is deemed inadequate, students and parents do not consider it worthwhile, which results in very low completion rates.

A complete overhaul of the secondary education system is needed, including the establishment of a national curriculum to ensure that all students have access to instruction in at least core subject areas such as Spanish, English, and mathematics. The mechanism through which the country's public education financing is distributed needs to be reformed to eliminate the profound inequities that currently exist (see Section 13.4.4). The government should also seek to expand access to secondary education through nonformal alternatives similar to Mexico's *Telesecundaria*, Colombia's *Escuela Nueva*, or Honduras's *EducaTodos*. Besides being cost-effective, these programs have the advantage of flexible hours, thereby allowing students to combine their studies with employment.

The gap between female and male completion rates in the country suggests a need for further research to determine whether Belizean males drop out as a result of factors external to the school—such as employment, gang membership, and migration—or because of in-school factors such

as classroom dynamics, teacher beliefs and expectations, or peer effects. Only by accurately identifying the roots of the problem can appropriate action be taken to retain males in the education system.

Although in Belize the problems of access to education clearly are most pronounced at the primary and secondary levels, it is nevertheless important to avoid further slippage at the primary level. If it continues, the trend toward decreased primary coverage in recent years may jeopardize achievement of the Millennium Development Goal of universal access to this level of education. To ensure quality primary education, the quality assurance functions need to be strengthened at each level from the Ministry of Education to the schools. The primary-level curriculum also needs to be reformed to recognize that Belize is a multi-ethnic, multicultural, and multilingual society. An important aspect of such a reform would necessarily involve the strengthening of bilingual and multicultural education opportunities. Guatemala has developed some interesting programs in this respect that could be used as examples in transmitting Mayan culture.

13.4.4 Reform the Financing of Education

In view of Belize's tight budget and the already elevated levels of public education expenditure, to make it possible to implement the reforms recommended in the preceding subsections, the country needs to increase the efficiency of its spending in the sector. Human resources expenditures at the central and district levels should be reviewed, since this is the only personnel spending that could be reduced without affecting student-teacher ratios.

Although efficiency gains need to be achieved at all levels, the situation is particularly alarming in secondary education, where the high per-student spending is not reflected in key indicators such as the proportion of youth between 15 and 19 years of age who complete ninth grade. It is incumbent on the country to use existing resources at this level more effectively. Belize should therefore reform its system for financing of secondary education to achieve better results with existing resources.

There are many models for financing secondary education, with each model responding to historical patterns of finance, strategies for attaining equity and quality in education, and government structures. Federal systems, for example, share government funding with lower levels of government, while nonfederal systems tend to bypass local governments and fund schools directly. School control over funds may be full, partial, or completely absent. The amount of funding can be based either on the number of students or on the payroll.

Very little evidence links funding levels or internal efficiency to test scores or academic performance, mainly because educational performance is the result of the interplay of many different variables, some of which are difficult to quantify, such as school leadership, teacher quality, and parent input. If one uses education indicators from different countries to evaluate the appropriateness of a particular funding formula—without taking context into consideration—it is easy to reach a wrong conclusion. The direction of the incentives produced by a funding formula should run in the same direction as the desired policy goal. Thus, if one seeks equity in access, paying all teachers the same salary without any concern for targeting disadvantaged populations via salary supplementation for teachers of students who belong to those populations is bound to be counterproductive, whereas providing extra compensation to schools with high populations of students who live in poverty or have special needs is bound to produce a more equitable system.

The main change proposed in regard to Belize's funding of secondary education is to link secondary school financing to the number of students and the standardized curriculum to which they have access, replacing the existing link to teacher salaries and historical grants. Such a change would significantly increase equity in school financing and ensure that students from different socioeconomic and ethnic groups have equal opportunity to study a sufficiently broad and relevant curriculum. The new financing system should also incorporate mechanisms to increase enrollment among children with special education needs. It is also critical that a mechanism be put in place that rewards schools for decreasing repetition rates and increasing completion rates.

At the pedagogical level, the implementation of such a financing mechanism would involve a compromise: poor schools that currently cannot teach a basic curriculum would see their resources increased and, by implication, increase the quality of the education offered to their students. Schools that now offer curricular programs that exceed the requirements of the basic curriculum would have to find nongovernmental sources of funding to continue the same curriculum. For large denominational schools in urban areas, the implementation of this type of system would probably mean an increase in school fees to families at the top of the country's income distribution. Arcia (2007) finds that families in Belize's upper expenditure quintiles should be able to support an increase of some 10 percentage points in private participation in the total cost of education, bringing the country more in line with other countries in the region. That may not be popular and may not be feasible in the short run, since these are families with substantial political influence. Hence, any change in the pattern of grant allocation would have to be gradual. Rather than actually decreasing allocations, it might be more politically palatable simply to freeze funding to richer schools at current levels (Näslund-Hadley, Arcia, and Cerrone, forthcoming).

13.5 Conclusions

The review of Belize's education system and related policy options presented in this chapter recommends four policy shifts for education reform in Belize: (1) strengthening the capacity of the Ministry of Education to monitor the education system and to collect and use data to inform decision making; (2) improving the quality of the country's teaching force, including the strengthening of both initial and in-service training of teachers; (3) enhancing enrollment and achievement among disadvantaged populations, including the poor, indigenous populations, and males; and (4) using resources more efficiently, particularly at the secondary level. These recommendations are consistent with a wide body of literature and empirical evidence on education sector reform. They seek to improve education quality and equity at all levels and increase access and completion rates at the secondary level.

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Indigenous Peoples: Cross-Cutting Concerns and Needs

14.1 Introduction

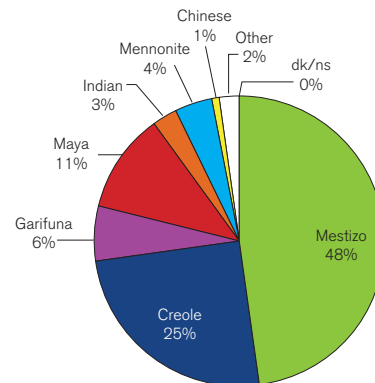
Belize is often referred to as a multicultural success story because of the positive relationships between disparate groups within the country and the relatively low level of violent conflict (Moore 2008, 4). Ethnic tensions do exist in Belize, however, and changes in demographics and shifting national and regional politics—including the development of revenue-generating activities such as tourism—will require that these relationships and tensions be more actively addressed.

In general, Belize has four main ethnic groups: Mestizos, Creoles, Maya, and Garifuna (Figure 14.1). The Mestizos (of mixed European and Yucatec Maya background) live in Corozal, Orange Walk, and Cayo Districts, and the Creoles or Blacks (of mixed European and African background)¹ are mostly based in Belize District. These two groups tend to dominate politics and economics in Belize and have often been referred to as the country's "elite." Until recently, Creoles constituted the majority of Belize's population, but the 2000 population census (Central Statistical Office 2000) shows that Mestizos now dominate the population. This shift can be explained by the large influx of migrants and refugees from surrounding Spanish-speaking Central American countries that identify as Mestizo. Other socioethnic groups include the Mennonites (3.2 percent; religious rather than ethnic group), East Indians (3 percent), Chinese (0.9 percent), and people of Arab descent (Lebanese, Afghani, and Palestinian).

14.2 Indigenous Populations

According to Belize's 2004 Labor Force Survey, the Maya and Garifuna represent approximately 16 percent of the total population of Belize (a decrease of 1 percent since the 2000 census). The Mopan and Q'eqchi' Maya live in about 50 inland communities in Toledo and Stann Creek Districts, and the Garifuna are primarily located in coastal towns and villages in the same districts.

FIGURE 14.1. POPULATION OF BELIZE BY ETHNICITY



Source: Central Statistical Office.

Note: dk/ns = don't know/not specified.

¹ The Creoles are descendants of enslaved Africans brought to Belize by the British to work in the timber industry.

14.2.1 The Maya of Southern Belize

According to Belize's 2000 census, Mayans represent approximately 11 percent (or 24,501 persons) of the total population of Belize. They belong to three different ethnic groups: Yucatec (1.4 percent), Mopan (3.9 percent), and Q'eqchi'

(5.3 percent), all of whom are the direct descendants of the ancient Maya civilization that inhabited Belize before the arrival of the Europeans in 1650. Of these, 74 percent (approximately 18,000 individuals), primarily Mopan and Q'eqchi', live in the Toledo and Stann Creek Districts (Figure 14.2), with the vast majority living in rural

FIGURE 14.2. MAP OF BELIZE



Source: Toledo Maya Cultural Council/Toledo Alcaldes Association (1997).

TABLE 14.1. GARIFUNA AND MAYA POPULATION BY DISTRICT, 2000 CENSUS

District	Garifuna		Maya	
Corozal	332	2%	921	4%
Orange Walk	372	3%	1,229	5%
Belize	3,487	25%	708	3%
Cayo	747	5%	3,616	15%
Stann Creek	7,584	54%	2,898	12%
Toledo	1,539	11%	15,129	62%
Country total	14,061	100%	24,501	100%
Urban	10,785	77%	3,140	13%
Rural	3,276	33%	21,361	87%

Source: Central Statistical Office (2000).

areas (see Table 14.1). A small number of Yucatec Maya live in northern Belize, close to their relatives across the border in Mexico.

The Maya have largely retained their distinct cultural identity, including language, religion, music, and other forms of cultural expression.² Land and natural resources are central to their economic and cultural livelihood and integrity. They practice rotational farming and communal use of land, which distinguishes them from other Belizeans engaged in agriculture. This system, called *milpa agriculture*, allows for two years of cultivation of a particular area followed by eight years of letting it lie fallow. Agronomists point out that the system is designed to produce relatively large yields of food crops without the use of artificial pesticides or fertilizers, but they caution that although it is self-sustaining at current levels of consumption, it may not be at more intensive levels. It is important to note that *milpa* is a sociocultural construct rather than simply a system of agriculture. It involves complex interactions and relationships between farmers, as well as distinct personal relationships with both the crops and the land. For example, it has been noted that “the making of *milpa* is the central, most sacred act, one which binds together the family, the community, the universe. . . . [It] forms the core institution of In-

dian society in Mesoamerica and its religious and social importance often appear to exceed its nutritional and economic importance” (Nigh 1976).

14.2.2 The Garifuna

The Garifuna are the descendants of Arawak (Taino) and Carib peoples who intermixed with Africans (believed to be of Yoruba, Ibo, and Ashanti descent) on the island of St. Vincent during the seventeenth century. In 1797, the British forcibly relocated the “Black Caribs,” as they were known at the time, to the island of Roatán, off the coast of Honduras. It is widely believed that the first Garifuna settlement in Belize was established in 1799, and the Garifuna assert that, unlike the Creoles, they entered Belize as free people, not slaves.³

In 2000, the total Garifuna population in Belize numbered 14,061, or 6 percent of the total population. Whereas they were traditionally self-sufficient communities of fishermen and farmers, many Garinagu⁴ now maintain urban lifestyles and are employed as teachers and other professionals in the public and private sectors. A majority live in coastal villages and towns in Stann Creek and Toledo Districts, with a significant number now living in Belize City (see Table 14.1). In addition, many Garinagu have migrated to the United States and live in large cities such as Los Angeles and New York.

The Garifuna speak a distinct language that is a mixture of African, Carib, European, and other languages. In this language, some forms and structures are marked for exclusive male or female use—a rare linguistic feature. For example, a man and a woman engaged in conversation will use different words to refer to the same thing. In 2001, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) proclaimed the Garifuna language, music, and dance of Belize “a Masterpiece of the Oral and Intangible Heritage of Humanity.” However, Garifuna cul-

² Many Maya are now nominally Catholic, Nazarene, Baptist, or Pentecostal as a result of the historical efforts of missionaries. Although some practice these religions, many have combined them with traditional spiritual beliefs and practices.

³ November 19 is recognized annually as Garifuna Settlement Day and is celebrated as a national holiday. It is celebrated in Dangriga, Stann Creek; people arrive in canoes loaded with drums, utensils, cassava, and banana saplings as a reenactment of the arrival of their ancestors.

⁴ This is the plural form of Garifuna in the Garifuna language and is used when referring to multiple members of the ethnic group; the Garifuna is generally used when referring to the ethnic group as a whole.

ture is increasingly threatened, largely as a result of “migration in search of economic opportunities not available in Garifuna communities, discrimination and the failure of the school system to acknowledge the language and culture in the educational curriculum, even in Garifuna communities” (Cayetano and Cayetano 2005, 243).

14.3 Socioeconomic Indicators

14.3.1 The Challenge of Data

Recently, efforts have been made to improve the collection of data to enable disaggregation and to include the views of indigenous peoples in national planning processes such as the National Poverty Assessment.⁵ The government of Belize does not systematically collect data in such a way that it can be disaggregated by ethnic or indigenous origin; most indicators are not disaggregated further than the district level (Central Statistical Office 2005). Policymakers in Belize resist the collection of data to permit finer disaggregation, as there is some belief that policies targeting indigenous peoples are discriminatory because they accord preferential treatment to one ethnic group over another. This position stands in marked contrast to the increasing recognition by the international community and most countries in the region that programs targeting indigenous peoples do not necessarily provide preferential treatment, but that special programs or adaptations are needed to ensure that these populations receive the full benefit of interventions and investments, and that disaggregated data allow governments and donors to better target their projects and monitor impacts and results (see, among others, CERD 1997). At a United Nations Permanent Forum on Indigenous Issues workshop, “Data Collection and Disaggregation for Indigenous Peoples,” the Inter-Agency Support Group on Indigenous Issues (2005, para. 51) stressed the fundamental importance of collecting data that can be disaggregated by gender and ethnic identity in order to gain “an accurate

understanding of indigenous peoples’ poverty situation, to qualify policies, and to develop appropriate programs and monitor impact.”

Despite the government policy against data collection practices that enable certain types of disaggregation, the 2006 Multiple Indicator Cluster Survey (MICS) (Statistical Institute of Belize 2006) does include some disaggregated data. MICS, developed by the United Nations Children’s Fund (UNICEF), surveys households to assist countries in filling data gaps for monitoring human development in general and the situation of children and women in particular; it is capable of producing statistically sound, internationally comparable estimates of social indicators. The current round of MICS focused on providing a tool for monitoring progress toward the Millennium Development Goals and the World Fit for Children, as well as for other major international commitments, such as the United Nations General Assembly Special Session on HIV/AIDS and the Abuja targets for malaria. MICS consists of several questionnaires: one for households, one for women aged 15–49, and one for children under the age of 5 (to be administered to the mother or caretaker). The questionnaires are modular, and other than a set of core modules, countries can select which modules they want to include in each questionnaire. The 2006 MICS was the third conducted by the Statistical Institute of Belize with the support and assistance of UNICEF and other partners. One of its conclusions was that rural children, generally Maya and Garifuna, are less likely to be registered at birth than their urban peers, which makes the disaggregation and subsequent analysis of collected data even more difficult.⁶

The 2002 *Poverty Assessment Report* (PAR) (Central Statistical Office 2004) is the most recent assessment of poverty in the country. It consists of a Living Standards Measurement Survey covering 1,680 households and 15 focus group interviews: 5 presurvey and 10 postsurvey.⁷ Although

⁵ Although the Poverty Assessment Report mentions Maya and Garifuna and some effort has been made to collect the different ethnic groups’ views on poverty in the Public Consultation Report for the country’s National Poverty Elimination Strategy and Action Plan, the strategy and action plan themselves are silent on policies focusing on Maya and Garifuna. The same is true for the Ministry of Education Plan of Action 2005–2010 and the 2004 Millennium Development Goals report for the country.

⁶ For more on this, see Harbitz and Boekle (2009).

⁷ In an attempt to mitigate the typical reluctance to share information on incomes, the Living Standards Measurement Survey collected data on expenditures on food and nonfood items for two periods: the 7 days and the 30 days prior to the survey date.

the PAR does include some data disaggregated by ethnicity, the reported sample size for the Living Standards Measurement Survey is small: only 3.1 percent of total households were surveyed, compared with the 10 percent figure normally used by the Central Statistical Office (2004, Appendix C). The focus groups included only one Maya village (San Antonio in Toledo District) and one Garifuna town (Dangriga in Stann Creek District), with a total of 46 Maya and 46 Garifuna participants: clearly, the results are not representative of the experience of all Maya and Garinagu living in Belize.⁸

Given that most available data on Belize are not disaggregated, many of the results obtained through these various instruments are of limited value in the context of this chapter. However, important indicators can be extrapolated from the data collected in Toledo District, where Maya represent 65 percent of the total population, and Stann Creek District, where the Garifuna represent the largest population group at 31 percent (Central Statistical Office 2000).

14.3.2 Poverty

According to the National Poverty Elimination Action Plan for 2007–2011 (Ministry of National Development, Investment and Culture 2007a), the poverty line in Belize was derived by adding the minimum estimated cost of nonfood items that a household requires to meet its basic needs to the indigent line, which is the minimum estimated cost of food necessary for healthy existence; thus the poverty line is based on the minimum cost of both basic food and nonfood items. It is adjusted by district; in the two districts of interest for this chapter, the monthly poverty line is BZ\$236.81 (US\$119.90) for Toledo District and BZ\$179.03 (US\$90.65) for Stann Creek. The monthly indigent line is BZ\$128.70 (US\$65.16) and BZ\$102.30 (US\$51.79) for the two districts, respectively.

The 2002 PAR indicates that among Belize's ethnic groups, the estimated incidence of poverty is

TABLE 14.2. POOR POPULATION BY DISTRICT

(percent)

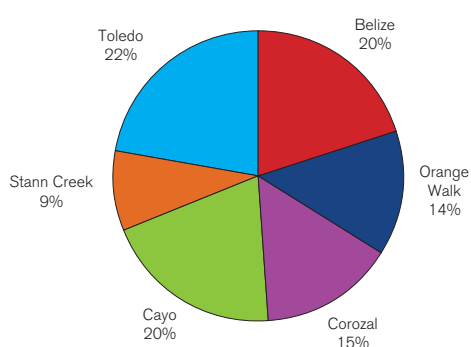
District	
Corozal	26.1
Orange Walk	34.9
Belize	24.8
Cayo	27.4
Stann Creek	34.8
Toledo	79.0
Country average	33.5

Source: Central Statistical Office (2004).

highest among the Maya (77 percent) and lowest among the Garifuna (24.3 percent). With a national average of 33.5 percent living below the poverty line, Toledo District stands out at 79 percent (see Table 14.2), with 56.1 percent being “very poor” or indigent. Poverty affects children most profoundly, and according to PAR estimates, 83.3 percent of Maya children under 17 years of age live in poverty, compared with 39 percent of all Belizean children in that age group. Education and health indicators show similar gaps.

In general, the government of Belize is addressing poverty reduction in indigenous communities through a series of direct investments: the Social Investment Fund, the Belize Rural Development Programme, and the Toledo Strategy and Action Plan. The Social Investment Fund (SIF) aims to improve social stability and increase the productivity of the poor. SIF investments are used mainly for infrastructure (potable water systems, health and education facilities, roads, and drains), but also for community empowerment and capacity building. Despite the identification of Toledo District as a priority area for the fund, a review of SIF projects completed since 1997 shows that Toledo received only 22 percent of the total investments, about the same as Cayo and Belize Districts (Figure 14.3). Of a total of BZ\$2.1 million for economic infrastructure projects, Cayo received 69 percent of the investments, compared with 5 percent for Stann Creek; there were no economic infrastructure projects in Toledo (Social

⁸ It is generally acknowledged among international and intergovernmental organizations that data collected for National Poverty Assessments, Poverty Reduction Strategy Papers, or the Millennium Development Goals do not adequately capture the situation of indigenous peoples because of their relatively small sample sizes and the low levels of birth registration among these peoples, which result in overall weak data.

FIGURE 14.3. TOTAL SIF INVESTMENT BY DISTRICT, 1997 TO SEPTEMBER 2007

Source: Social Investment Fund/Basic Needs Trust Fund (2007).

Investment Fund/Basic Needs Trust Fund 2007). Although the government asserts that the SIF's geographic focus alone ensures that indigenous peoples will be the major beneficiaries of SIF investments, it is difficult to monitor and/or measure any benefits that may accrue without proper baselines and disaggregated data.

Similar to but distinct from the Social Investment Fund, the Belize Rural Development Programme (BRDP) was created in 2006 with approximately US\$20 million in funding from the European Union. Its objective is to alleviate poverty in rural areas through enterprise development. The BRDP provides training, marketing support, and equipment for small productive projects, and microgrants are available for specific vulnerable groups. Assessments of the program's impact on and relevance for Maya and Garifuna communities and to what extent they will benefit have yet to be conducted, but most Garifuna will clearly be excluded, as they are based in urban areas, which are not the program's geographical target.

The Toledo Strategy and Action Plan 2006–2009 (TSAP) is considered the government's comprehensive approach to development in the district (Toledo Development Corporation 2006) and was initially prepared by the Toledo Development Corporation (TDC), established as part of the government's Environmental and Social Technical Assistance Project. The TDC was intended to be the overall coordinating body for the development of the Toledo District, including monitoring the eventual implementation of another plan, the Regional Development Plan for Toledo.

In general, TSAP is a poverty reduction strategy that uses a geographical rather than a population-targeting approach (Toledo Development Corporation 2006, 16). It focuses on a number of priority areas for investment: agriculture and fisheries, education and awareness, infrastructure, land use and natural resource management, governance and networking, opportunities and enterprise development, and health and nutrition. Given that it is a regional development plan, its implementation depends on fulfillment of a number of conditions: continued national consensus and political will among all levels of government to provide the necessary resources to implement the plan; good governance and absence of corruption, minimizing political intervention as it may deviate from implementation of the strategy; good management or absence of major natural disasters; and a stable global economy and a good relationship between Belize and Guatemala. The National Poverty Elimination Strategy highlighted the need to build the TDC's capacity to manage the plan and that funding for the program had not yet been finalized (Ministry of National Development, Investment and Culture 2007b, 50).

TSAP was developed without the systematic participation of the indigenous communities (both Maya and Garifuna) in Toledo, which are effectively the plan's major target groups. Although the government refers to TSAP as "the product of large scale public consultations with the residents of Toledo," few details are available regarding the participation methodology or participants (Ministry of National Development, Investment, and Culture 2007b, 50). When questioned about this statement, a representative of the Maya Leaders Alliance could not recall being consulted or receiving the final document and indicated that the plan includes few Maya and Garifuna development priorities.

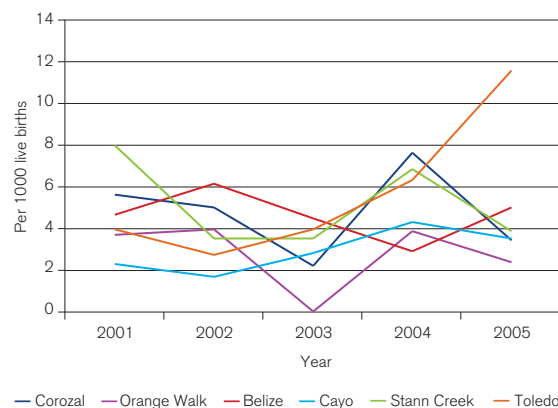
14.3.3 Health

To date, there has been no comprehensive study on the specific health situation of the Maya and the Garifuna. The Belize National Health Agenda 2007–2011 refers only generally to indigenous peoples, stating that "distant communities with high proportion of rural and indigenous population are in need to improve their health and availability of health professionals" (Ministry of Health 2006, 32).

Statistics provided in the agenda on consultations and primary health care interventions conducted at the community hospital in Toledo and at the Southern Regional Hospital in Dangriga are generally high compared with those for the rest of the country, but they do not specify whether the patients receiving the services were primarily indigenous or members of other ethnic groups living in the district. The 2002 PAR found that although Mayans and Garinagu were most likely among the country's ethnic groups to report illnesses (26.9 percent and 20.1 percent), fewer Mayans (62.0 percent) sought conventional health care than Mestizos (65.1 percent), Garinagu (73.0 percent), and Creoles (77.5 percent). The PAR also found that Mayans often used health care facilities in Guatemala because they were perceived to be more reliable and effective than public health care in Belize. It also found that many Maya still used traditional healers and medicines to reduce health care costs (Central Statistical Office 2004, 44). Anthropologist Liza Grandia (2004, 59) reports that Mayans often turn to traditional healers for conventional illnesses, like diarrhea, fevers, cuts, and wounds, as well as for illnesses that they feel Western medicine is less effective at healing, such as problems with bones and rheumatism/arthritis, snakebites, reproductive and women's health, medicine, and mental illness. As a result, the high number of consultations and primary health care interventions reported in these two districts might not accurately represent the level of primary health care received by the Mayan population in particular.

Despite the limitations of the data, it is clear that child mortality rates in Toledo District show a sharp upward trend, from 4.0 (per thousand live births) in 2000 to 11.6 in 2005, significantly higher than the national average of 4.4 in the same year. In Stann Creek District, by contrast, child mortality rates decreased from 8.0 in 2001 to 3.9 in 2005 (Figure 14.4). In terms of child health, in the 2002 PAR, 39.8 percent of Mayans were found to have low height for age (stunting), the highest percentage among all ethnic groups.⁹

FIGURE 14.4. CHILD MORTALITY RATE BY DISTRICT, 2001–2005



Source: Central Statistical Office (2005).

No significant differences were found in the level of wasting (low weight for age).¹⁰

The maternal mortality ratio¹¹ shows the same disparities between Toledo District and the rest of Belize: 147.3 per 100,000 live births in 2000, compared with the national average of 68.4 for that year. In 2005, this increased to 231.7 in Toledo, compared with 0 in Corozal, 59.7 in Orange Walk, 98.8 in Cayo, 195.5 in Stann Creek, and 135.4 in Belize, with the national average at 119.1. The majority of mothers in Belize District gave birth in a health facility compared with only half of the mothers in Toledo District (52.4 percent). A nurse or midwife attended the majority of those who gave birth at home (Statistical Institute of Belize 2006). The 2006 MICS found that only 79.5 percent of women in Toledo District received prenatal care, compared with 93–100 percent of women in all other districts. The survey also found that the percentage of women using any method of contraception in Maya-speaking households is very low (15.4 percent) (Statistical Institute of Belize 2006).

Although the results of studies on the prevalence of HIV/AIDS remain controversial because of the lack of disaggregated data, it is generally

⁹ The 2006 MICS estimates that growth retardation is more apparent in children of Maya descent (50 percent).

¹⁰ There is some doubt about the quality of the anthropometric data collected by the 2002 PAR. Apparently, the measuring scales used to conduct the anthropometrics had to be transported on rough roads, which caused irreparable damage to some of the equipment, and some of the buildings used for the anthropometrics "were not leveled which might have caused some inconsistencies in the measures" (Central Statistical Office 2004, Appendix C).

¹¹ It should be noted that the small size of the population relative to the measure makes the statistics regarding this ratio unreliable.

agreed that HIV/AIDS incidence is higher than average in Belize and Stann Creek Districts, which has led to the conclusion that the Garifuna are disproportionally affected. However, given that the Garifuna make up only 31 percent of the population in Stann Creek and the data are not disaggregated by ethnic group, this conclusion is questionable. According to the head of the National AIDS Commission, the Ministry of Health does not collect and “does not intend to collect data disaggregated by ethnic group,” as this might lead to stigmatization.¹²

Health Care Delivery in Toledo District

For the most part, primary health care in the remote areas of Toledo District is provided by mobile health clinics run by the private, faith-based nongovernmental organization (NGO) Hillside Healthcare International.¹³ Each community in the district is visited about once every six weeks by representatives of the NGO, and most communities have community nurse’s assistants trained by the Ministry of Health to provide basic medical services. However, villagers complain that the nurse’s assistants lack medical supplies and have little training to provide more than very basic care such as suturing (University of Wisconsin Medical School 2005).

For emergency or tertiary medical care, patients in the district must travel to the public hospital in Punta Gorda. This is difficult because most people do not have cars and rely on walking, biking, or bus to travel outside their village. Public buses are generally available only four times a week, and an ambulance service is available but is unreliable and can take 1–4 hours to reach Punta Gorda because of the bad state of the roads. The Punta Gorda hospital employs only general physicians; for major operations or specialist medical care, patients are referred to hospitals in Dangriga, Belize City, or abroad if services are not available in Belize.

14.3.4 Education

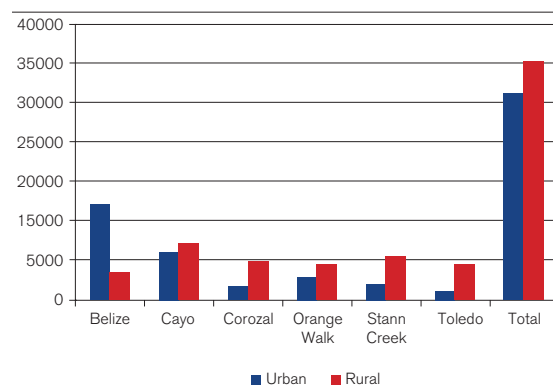
As with the available health data, the gaps between the Toledo District and the rest of Belize

are clearly visible in the education statistics. Primary school enrollment, which was 88.1 percent nationally in 2005/06, is lowest in Toledo District (Figure 14.5). Toledo also has the highest repetition rate at 12.5 percent, compared with 6.1 percent in Belize District, and the highest number of untrained teachers (Castellanos 2007, 34). Despite a low rate of trained teachers nationally (46.7 percent), Toledo and Stann Creek District have an even lower proportion of trained teachers: 36.3 and 36.1 percent, respectively (Table 14.3).

The national repetition and dropout rates show significant gender disparities, with increasingly higher dropout rates reported for boys. According to Castellanos (2007, 34), for the 2005–06 year, of the total enrollment, 3,507 male students (10.8 percent) repeated a grade, in contrast to 2,549 females (8.2 percent). Ministry of Education statistics for 2005–06 indicate that whereas the Stann Creek District follows the national trend in regard to dropout rates (with a higher rate for males), Toledo District does not: there, more girls drop out of primary school than boys (Ministry of Education 2006, Table 8).

Despite the disparities in education indicators between the Toledo and Stann Creek Districts and the rest of the country, the Ministry of Education’s (2005) action plan for 2005–2010 includes no specific actions or policies aimed at narrowing the gender gaps in repetition and dropout rates.

FIGURE 14.5. PRIMARY ENROLLMENT BY DISTRICT AND AREA, 2005



Source: Castellanos (2007), Figure 8.

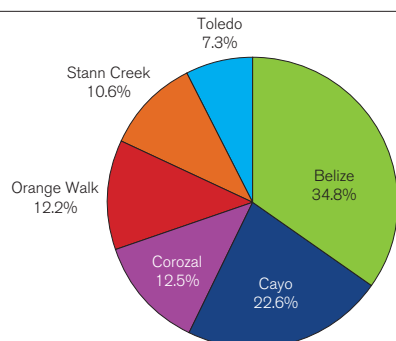
¹² Dr. Marvin Manzanero, Ministry of Health, personal communication, November 8, 2007.

¹³ Additional information about this organization is available on its website at www.hillsidebelize.org.

Secondary Education

As illustrated in Figure 14.6, secondary enrollment in Belize is lowest in Toledo (7.3 percent) and highest in Belize District (34.8 percent). Access to secondary education is limited in Toledo District by the lack of schools; in 2005, there were 50 primary schools in Toledo, but only 4 secondary schools and 1 junior college (Ministry of Education 2006, Table 2). By contrast, Stann Creek boasted 32 primary schools, 4 secondary schools, and 1 junior college. Cayo District, with few Mayans and Garinagu, has 61 primary and 11 secondary schools and 2 junior colleges (Table 14.3).

FIGURE 14.6. SECONDARY ENROLLMENT BY DISTRICT, 2005-06



Source: Castellanos (2007), Figure 10.

In addition to limited access to facilities, financial costs were also cited in the 2002 *Poverty Assessment Report* as a major reason why Mayan families were unable to send their children to secondary school.¹⁴ Mayans were estimated in that report to have the lowest access to financial assistance for education: 93.5 percent of the Mayans interviewed for the report said they had no source of financial assistance, as compared with 71.8 percent of Creoles, 73.9 percent of Garifuna, and 87.9 percent of Mestizo (Central Statistical Office 2004, Table 5-9).

Intercultural and Bilingual Education

In general, instruction in the schools in Maya and Garifuna communities is provided in English, and all schools follow the national curriculum. The lack of a national government policy on intercultural and bilingual education makes Belize an exception in the region.¹⁵

On the initiative of the Maya Leaders Alliance and the National Garifuna Council, several programs for intercultural bilingual education have been established. For example, the Tumul K'in Center of Learning in Blue Creek, Toledo District,¹⁶ a five-year residential high school governed entirely by Maya, was established in 2002 by the Maya Leaders Alliance with the mission of "promoting

TABLE 14.3. PERCENTAGE OF TRAINED PRIMARY SCHOOL TEACHERS BY DISTRICT AND NUMBER OF SCHOOLS BY LEVEL AND DISTRICT

District	Percentage of trained primary school teachers	Number of pre-schools	Number of primary schools	Number of secondary schools	Number of junior colleges	Number of tertiary schools
Corozal	63.1	27	42	6	2	0
Orange Walk	56.0	14	37	7	1	0
Belize	45.3	45	96	18	5	4
Cayo	44.8	24	61	11	2	2
Stann Creek	36.1	19	32	4	1	0
Toledo	36.3	13	50	4	1	1
Overall	46.7	142	288	50	10	5

Source: Ministry of Education (2006).

¹⁴ In 2002, secondary-level students paid BZ\$1,006 and tertiary-level students BZ\$3,443 for school fees, transportation, and materials (Central Statistical Office 2004, Table 5-8, 48).

¹⁵ In 2004, UNICEF reported that 18 countries in the region (out of 24 surveyed) included bilingual education services as part of their public policy.

¹⁶ The center's website is available at <http://tumulkinbelize.org>.

sustainable development with identity through intercultural education, training, and research fusing modern and Maya values, knowledge, and philosophy” (Tumul K’in Center of Learning, 2010a). Programs include agricultural production and food processing, and the school calendar is adapted to the Maya community calendar, allowing the students to return to their homes and assist their families with seasonal agricultural activities. During their fifth year, students work on a business plan that integrates traditional knowledge and modern technology. The center has also established Ak’ kutan, an indigenous community-based radio station that serves as a community information resource as well as a training tool for the Tumul K’in curriculum. Although Tumul K’in is based on Maya values and philosophy, attendance is not limited to Maya students. There are Garifuna students enrolled in the program, and efforts are made to incorporate Garifuna culture into the program.¹⁷ The Ministry of Education now pays 70 percent of the teachers’ salaries.

In addition to its own curriculum, Tumul K’in is also coordinating a pilot project, executed in partnership with the National Garifuna Council and the Maya Leaders Alliance, which has introduced intercultural and bilingual education in three primary schools: one for Garifuna children in Dangriga (the Gulisi Community Primary School, established in 2007 by the National Garifuna Council, which follows the national curriculum but incorporates Garifuna language and culture in all lessons), one in a Mopan community, and one in a Q’eqchi’ village. The UNICEF-supported project’s goal is “to improve the overall quality of education and promote a more inclusive society” (Tumul K’in Center of Learning, 2010b). The curriculum includes language training for teachers in reading, writing, and teaching of indigenous languages and a school-based language program accompanied by an increase in parental and community involvement in education.

14.4 National Legal and Political Framework

Belize has no national legislative framework or government policy that specifically addresses the rights and interests of indigenous peoples. Unlike in neighboring countries, there is no specific ministry or minister responsible for indigenous affairs, nor is there a formal national-level body to coordinate and mainstream policies and activities affecting these populations. The government asserts that these are unnecessary because the Maya, in particular, belong to the poorest segment of Belize society and will therefore benefit from national programs, such as the Toledo Strategy and Action Plan, which is targeted at the Toledo District, where they form the majority population. However, their overall socioeconomic indicators remain low, and the lack of disaggregated data and baselines makes it difficult to discern whether they are in fact benefiting from these programs and the associated services.¹⁸

National legislation on indigenous rights in Belize is limited to the Belize Constitution, which contains one reference in the Preamble:

Whereas the people of Belize...(a) affirm that the Nation of Belize shall be founded upon principles which acknowledge...faith in human rights and fundamental freedoms ...and the equal and inalienable rights with which all members of the human family are endowed...(e) *require policies of state which protect...the identity, dignity and social and cultural values of Belizeans, including Belize’s indigenous peoples...with respect for international law and treaty obligations in the dealings among nations.*¹⁹

In the recently decided *Maya Villages* case, the Supreme Court of Belize recently interpreted this to include rights to land and natural resources.²⁰

¹⁷ Esther Sanchez, Director, Tumul K’in Center, personal communication, November 2, 2007.

¹⁸ See Ministry of National Development, Investment, and Culture (2007b, 50): “Toledo District, with 79 percent of its population below the poverty line remains the poorest district in Belize. . . . The predominantly Maya inhabitants observe mostly traditional patterns of production and culture. A large proportion of communities identified by the Poverty Map as extremely poor are located in Toledo. . . . GOB [Government of Belize] has formulated a more comprehensive approach to development in the District and a Toledo Strategy and Action Plan (TSAP) was published in 2006.”

¹⁹ Belize Constitution Act, Chapter 4 of the Laws of Belize (Revised Edition 2000), available at www.belize-law.org/lawadmin/index2.html (emphasis added).

²⁰ Aurelio Cal, et al v. Attorney General of Belize and Coy et al. v. Attorney General of Belize, Consolidated Claims 171 and 172 of 2007, Supreme Court of Belize (referred to as the *Maya Villages* case).

In his decision, Chief Justice Abdulai Conteh affirmed the rights of Belize's Maya communities to their traditional lands and resources and declared that the Constitution of Belize protects these rights. He consequently ordered the state to delimit, demarcate, and title the lands in question. In framing his decision, the Chief Justice indicated that Belize is subject to "relevant international law," which includes the various declarations, treaties, and conventions adopted by international organizations such as the United Nations, Organization of American States, Central American Integration System, British Commonwealth, and Caribbean Community.²¹ According to the decision, these instruments protect, among other things, rights to land, natural resources, culture, the right to an identity, and other social and economic rights, such as the right to live in a healthy environment.

There is no minister of department responsible specifically for indigenous peoples in Belize. The Garifuna, however, have established the National Garifuna Council of Belize (NGC), and the government signed a Memorandum of Understanding in 1999 in which the government recognized the NGC as a legitimate representative of the Garinagu in Belize and committed to "consult the NGC whenever consideration is being given to legislative or administrative measures which will directly and especially affect the Garinagu of Belize" (National Garifuna Council of Belize and Government of Belize 1999, para. 3). For its part, the NGC, which was established in 1981, endeavored to cooperate fully with the government in "identifying, planning and implementing development projects and programs which affect the Garinagu in Belize" (para. 8). Although the NGC has been invited to express its views on issues affecting the Garifuna, there is still no formal procedure or institution in place that allows for effective consultation or participation of the Garifuna in government policies and decisions affecting them.

There is no Mayan organization that is formally recognized by the government. However, the

Toledo Maya Women's Council participated in the stakeholders' consultative process and focus groups that were organized in two Maya communities during the development of the National Poverty Elimination Action Plan.²² However, there may be a role for Mayan representative organizations such as the Maya Leaders Alliance in providing inputs for national planning and decision-making processes.

14.5 Community-Level Government

The Maya are the only ethnic group in Belize that have retained a traditional form of self-government in the form of the *alcalde* system. Although this system was adopted by the Spanish in Central America, and later embraced by the British in Belize, it is of pre-Columbian origin. In this system, the *alcalde* or chief (in Mopan the term *Notch Winic* or *Pohlil Kah* is used, and in Q'eqchi' he is known as *Mamb* or *Ruj'il*) is democratically elected by the community every two years. He appoints a second and third *alcalde* (Toledo Maya Cultural Council/Toledo Alcaldes Association 1997, 6). The *alcaldes* receive a small stipend from the government of BZ\$50–100 (US\$25–50) per month. Anthropology Professor Richard Wilk, who served as an expert witness in the Supreme Court of Belize in the *Maya Villages* case, described the current role and function of the *alcaldes* as follows in an affidavit filed in that case:

Alcaldes continue to administer customary law in its judicial, economic, social and religious aspects, including the customary land tenure system in Maya villages, with the full knowledge and acquiescence of the Government. For example, in January 2000, the Final Report of Political Reform Commission, in recommending the Village Councils Act not be imposed upon Maya villages, reported that:

[The *Alcalde* system] is the traditional Maya way of administering villages and has been historically acknowledged by governments.

²¹ Belize has not ratified the American Convention on Human Rights nor has it accepted the jurisdiction of the Inter-American Court on Human Rights.

²² There was also no indication that there was meaningful participation of indigenous peoples, either at the community level or through the representative organizations, in the development of the 2002 Poverty Assessment (United Nations 2005), the UN Development Assistance Framework 2007–2011 (UNDAF Belize), or Belize's First Millennium Development Goals Report 2004 (Government of Belize/Ministry of National Development 2005).

The alcalde or mayor, who is elected by the men of the village, ...has the responsibility to decide who resides in a village, to pass judgments on disputes among residents and to hand out punishment for some crimes...

The Government of Belize website states that: "The alcalde system is part of the local government structure of Belize. ...The alcaldes are effectively local magistrates operating at the village and community level. ... They have the power to decide who can live in the village and can call for the communal cleaning of a village. They are responsible for managing the communal land and act as school officers."²³

The Toledo Alcaldes Association was established in 1992 to advocate on alcaldes' behalf and to address the concerns of the Maya community in general. Martin Chen, the former chairman of the association, argues that the alcaldes are key to social order in the communities and that "there is not much crime in the Maya communities and we should keep that (alcaldes)."²⁴ He calls for full recognition of the alcaldes as part of the central government. In his view, the main challenges for the present alcalde system are potential for conflicts with the village council system that was introduced in 1998 and the lack of resources, such as transportation and office space, that are necessary for alcaldes to do their work.

By contrast, although the alcalde system was also introduced in the Garifuna communities during the 1940s and 1950s, the colonial administration felt that traditional leadership was autocratic and at odds with formal democracy. In 1969, the last Garifuna alcaldes were removed and replaced with a village council (Moberg 2005, 90–91).

14.6 Nongovernmental Organizations

Given the lack of a larger national policy framework, NGOs (Box 14.1) play an increasingly important role in Belize in representing indigenous peoples at the federal level and in the delivery of

services in rural areas. Both the Garifuna and the Maya have strong nongovernmental representation through the National Garifuna Council and the Maya Leaders Alliance. In addition, the council has official consultative status with the central government, and the alliance has provided inputs for national policy dialogues.

The Maya Leaders Alliance was established in 1999 as an umbrella membership organization that originally comprised a number of high-profile indigenous organizations: the Toledo Alcaldes Association, Ke'kchi Council of Belize, Julian Cho Society, Toledo Maya Cultural Council, Toledo Maya Women's Council, and Village Council Association. The organization has been undergoing some changes recently, and some of the original member organizations have changed. The current members are the Toledo Alcaldes Association, Ke'kchi Council of Belize, Toledo Maya Cultural Council, Julian Cho Society, and Tumul K'in Center of Learning. In general, most of the work of the member organizations is focused on projects and programs in the Toledo District. The Toledo Maya Cultural Council and the Toledo Alcaldes Association have also worked extensively with international organizations and represent the Maya at international meetings and sessions such as those organized by the United Nations and the Organization of American States.

The Toledo Maya Cultural Council was founded on April 15, 1978, with a mandate to supervise and promote the economic, social, and cultural activities of the Maya; work for the recognition of the Maya as the country's indigenous people; and pursue resolution of their land rights. The council was one of the petitioners in the *Maya Villages* case. In the early 1990s, the council worked in close collaboration with the Toledo Alcaldes Association to develop the *Maya Atlas* (Toledo Maya Cultural Council/Toledo Alcaldes Association 1997), an impressive book that documents the land and life of the 42 Maya communities located in Toledo and Stann Creek Districts. The Maya worked with geographers from the University of California at Berkeley and published the *Atlas* in 1997 under joint copyright with the university's Geology De-

²³ Second Affidavit of Richard Wilk in the *Maya Villages* case, paras. 69–70, available at http://www.law.arizona.edu/Depts/ipplp/advocacy/maya_belize/documents/SecondAffidavitofRichardWilkfiledJune132007.pdf.

²⁴ Martin Chen, personal communication, October 14, 2007.

BOX 14.1 Key Indigenous Organizations in Belize

The National Garifuna Council of Belize has branches in every district and in every community where there are Garifuna.

The Maya Leaders Alliance is an umbrella group comprising

- The Toledo Alcaldes Association
- The Ke'kchi Council of Belize
- The Julian Cho Society
- The Toledo Maya Cultural Council
- The Tumul K'in Center of Learning

The executive membership of the alliance also includes past leaders of the Toledo Alcaldes Association and Toledo Maya Women's Council, as well as Maya Village leaders.

Other indigenous organizations:

- The Toledo Cacao Growers' Association
- Toledo Maya Women's Council
- Sarstoon-Temash Institute for Indigenous Management
- Yaakche Ache

partment.²⁵ At time of writing, this organization was also undergoing many changes and lacked a full-time staff, limiting its operating ability.

A community-based indigenous environmental organization, the Sarstoon-Temash Institute for Indigenous Management,²⁶ works to protect the ecological integrity and cultural values of Belize's southern region. In particular, SATIIM comanages, in collaboration with the Belizean Forestry Department, the 41,898-acre Sarstoon-Temash National Park which was established in 1994 on lands traditionally used by the Garifuna and Maya communities. The park is home to an impressive variety of flora and fauna, including jaguar, manatee, and ocelot. Although SATIIM's agreement with the government of Belize to comanage the park expired in April 2008, the Forest Department has given verbal assurances to SATIIM that it should continue to do so. The organization is governed by a nine-member Board of Directors, five of whom are elected by the neighboring communities (Barranco, Midway, Sunday Wood,

Conejo, and Crique Sarco) and one each appointed by the Ke'kchi Council of Belize, the Toledo Alcaldes Association, the National Garifuna Council, and the Forest Department, respectively. The institute has recently been quite vocal in its opposition to seismic activity and oil exploration in the park (see Section 14.7).

14.7 Protection of Lands, Territories, and Resources

As in many countries in Latin America, the issue of land rights and most importantly of reconciling these rights with long and complicated histories of land tenure and use has been a continuing challenge for the government of Belize and indigenous communities. For the Maya of southern Belize, in particular, the lack of land security is perceived as the "overarching problem, from which several other issues threatening Mayan existence originate" (Toledo Maya Cultural Council/Toledo Alcaldes Association 1997, 122).²⁷ Activities as-

²⁵ "The Making of the Maya Atlas," available on the university's website at <http://geography.berkeley.edu/ProjectsResources/MayanAtlas/MayaAtlas/making.htm>, offers a detailed look into the process of compiling and publishing the Atlas.

²⁶ Further information on the institute is available on its website at <http://www.satiim.org.bz>.

²⁷ This position was affirmed during the research for this chapter, at a focus group interview conducted with the Maya Leaders Alliance and in personal interviews and informal conversations with villagers.

sociated with oil and tourism have presented particular challenges to traditional land rights among the Maya and Garifuna.

Oil exploration in southern Belize in particular is increasing pressure on Maya lands. In April 2006, the government of Belize granted an exploratory permit to Texas-based U.S. Capital Energy to begin seismic testing in the Sarstoon-Temash National Park. The Maya claim that granting this permit without the prior informed consent of the Maya violates their indigenous rights. In May of that year, SATIIM filed a lawsuit asking the Supreme Court of Belize to revoke the permit. The Court subsequently granted SATIIM's request for revocation of the permit, ordering the government and the company to comply with the Environmental Protection Act, which mandates an environmental impact assessment prior to any seismic and/or other exploratory activity.

Tourism activities along the country's Atlantic coast are a source of pressure in regard to traditional Garifuna lands. Increasing investment in tourism, especially near Placencia and Hopkins, has resulted in the alienation of lands previously used by the Garifuna without their consent or involvement (and with no benefit accruing to them).

14.7.1 Maya Land and Natural Resource Use and Customary Law

Maya land use patterns are governed by unwritten, customary law. The lands and resources of the 40-plus Maya communities in southern Belize are held collectively under customary law, and individuals and families enjoy rights of use and occupancy using the milpa (rotational farming) system. As anthropologist Liza Grandia (2004, 27) explains, although this system has sometimes been misinterpreted as "communism," it is not:

Quite to the contrary, an individual Maya farmer works his own land, but it *is* part of a customary or community system. The basis for customary land management is a concept of "usufruct" rights—that is, the person who uses the land has a right to control it. He or she may recruit group labor, but ultimately the land and the crops are his/hers. If someone clears a piece of forest, other members of

the community will respect that land as his/hers even as it lays fallow. That allows people to rotate their crops every five to seven years so that the soil will be aerated and nutrients restored by the forest regrowth.

Corn is an important traditional crop that has both a nutritive and a ceremonial role in Mayan life. Mayan farmers also cultivate a wide variety of other crops, including rice, citrus, and cacao, for commercial purposes; the market for organically grown cacao in particular shows great revenue-generating potential (IFAD 2007, xiii). Mayan farmers also use their traditional lands for hunting, fishing, and gathering of wild foods and medicinal plants, and the forest provides firewood and materials for building houses, canoes, and baskets.

Access to land and natural resources is extremely important for Mayan religious beliefs and spirituality. Every Mayan community has at least one sacred site in the form of a cave or a mountain, and the religious and spiritual significance of the land and resources is apparent in all aspects of Mayan livelihoods and daily life (see Toledo Maya Cultural Council/Toledo Alcaldes Association 1997; Grandia 2004). Milpa agriculture, for example, "is not merely a mode of production but an entire way of life . . . the milpa cycle confirms and reaffirms religious holidays, kinship and friendships, and really the whole human lifecycle" (Grandia 2004, 27).

14.7.2 Legal Status of Maya Lands

The Supreme Court of Belize's September 2007 decision in the *Maya Villages* case resolved a long-standing dispute regarding the legal status of Maya lands in southern Belize. In the decision, Chief Justice Abdulai Conteh ruled that the Maya villages and their members hold collective and individual rights to the lands and resources they have used and occupied according to Maya customary practices and that these rights constitute "property" under the Belize Constitution. He ordered the government to "determine, demarcate and provide official documentation of Santa Cruz's and Conejo's title and rights in accordance with Maya customary law and practices, without prejudice to the rights of neighboring villages" and to cease and abstain from any acts, includ-

ing the issuance of leases, grants, or concessions for resource development, that might affect the existence, value, use, or enjoyment of the property located in the geographic area occupied and used by the Maya people of Santa Cruz and Conejo without their informed consent.²⁸

Shortly after the *Maya Villages* decision, then-Prime Minister Said Musa announced that his government would not appeal the case and publicly welcomed the “landmark decision.”²⁹ The Maya Leaders Association has met numerous times with the government of current Prime Minister Dean Barrow since his February 2008 election. A government directive issued in late March, suspending the issuing of leasing permits and other land-use-related permits in the Toledo District pending the process of implementing the Supreme Court decision, was seen as an encouraging sign. However, a few weeks later, on April 23, the government effectively revoked the directive by limiting its application to the two claimant villages in the lawsuit. In response, the association filed a second lawsuit, which at the time of writing had not yet been heard by the Court, in June 2008, asking the government to maintain the status quo on Maya lands by not issuing new permits and concessions.

Prior to the *Maya Villages* decision, the government considered most land in southern Belize, with the exception of several plots for which a few Mayans had obtained individual land leases or grants, to be national land. Belize’s British colonial government created several Maya reservations totaling approximately 77,000 acres in the late nineteenth century, but the boundaries of these “reservations” did not conform to Maya land use practices, and their legal status remains uncertain, as they are not referenced in the National Lands Act. Only a few of these reservations remain, and they are considered national lands and are the property of the state, requiring payment of annual rents and fees, while the government retains the right

to sell, lease, or grant licenses over the reservation lands without any compensation to the Maya (Toledo Maya Cultural Council/Toledo Alcaldes Association 1997, 7; Berkey 1994, 33).

The petitioners in the case, the Maya Leaders Alliance, stated that the nature of Belize’s lease system conflicts with the traditional Maya form of land tenure because the lease areas are “not big enough to accommodate the long fallow agricultural system (*milpa*) the Maya have developed over centuries to maintain soil fertility, and leases do not take into account the needs of future generations within that system.” They further stated that

Many Maya cannot afford to obtain a lease at all, and even for those that can, they are only able to lease a small portion of the larger area of land to which they have customary rights, which is inadequate to sustain themselves and their families over time. Furthermore, the expense of the leasing process forces many members of the claimant communities to mortgage their lease lands, with the associated significant risk of complete dispossession by foreclosure. This increases the likelihood, as permitted under the National Lands Act, that leases will be transferred to outsiders without the consent of the community.³⁰

It is important to note that the Chief Justice cited international and inter-American jurisprudence in his decision in the *Maya Villages* case, which codifies many of the principles included in the Ten Points Agreement between the Maya Peoples of Southern Belize and the Government of Belize³¹ as well as the conclusions of the 2004 Inter-American Commission on Human Rights report on the case. For example, the Ten Points Agreement recognized the rights of the Maya people to lands and resources in southern Belize and provided for a program to survey and protect communal lands. The commission’s report rec-

²⁸ The full text of the judgment in the case is available at http://www.law.arizona.edu/Depts/iplp/advocacy/maya_belize/documents/ClaimsNos171and172of2007.pdf.

²⁹ Belize Times, “‘Landmark Decision’ says Prime Minister, Rt. Hon. Said Musa,” October 28, 2007.

³⁰ “First Joint Affidavit of Gregorio Choc, Cristina Coc, and Martin Chen in the Supreme Court Case of Aurelio Cal and others versus Belize,” paras. 39–40, available at http://www.law.arizona.edu/Depts/iplp/advocacy/maya_belize/documents/AffidavitfromtheMaya-LeadersAlliance.pdf.

³¹ “Ten Points of Agreement between the Government of Belize and the Maya Peoples of Southern Belize” (2000), available at http://www.law.arizona.edu/Depts/iplp/advocacy/maya_belize/documents/TENPOINTSOFACTREEMENT.pdf

ommended that the state, through informed consultations with the Maya, adopt and implement legislative, administrative, and other measures for the delimitation, demarcation, and titling of the territory in which the Maya have a communal property right. It also recommended that the state abstain from any acts that might affect the existence, value, use or enjoyment of the property occupied and used by the Maya people and that it repair the environmental damage caused by the logging concessions granted by the state (Inter-American Commission on Human Rights 2004, paras. 193–96).³²

14.7.3 Garifuna Land Rights

After their forced relocation from the Caribbean island of St. Vincent to Central America in the eighteenth century, the Garifuna survived by engaging in seasonal wage labor, subsistence farming, hunting, fishing, and gathering of medicinal herbs and other forest products used for the construction of houses, canoes, and the production of household items. They settled primarily in coastal communities from Honduras to southern Belize. The majority of the Garifuna now live in urban settings where, according to Joseph Palacio (2001), they “engage minimally in the primary income-earning coastal activities of fishing and tourism.” Despite urbanization and migration, however, the Garifuna maintain their cultural and social attachment to the land, sea, islands, and coasts of the areas they have traditionally occupied and used. For example, certain islands (cayes) continue to be used in the *adugahani* (or *düğü*, as it is also known), a three- to four-day ritual intended to appease ancestor spirits, which can attract hundreds of Garinagu from all over the diaspora (Palacio 2005, 109).

The traditional lands of the Garifuna, notably in and around the villages of Hopkins and Seine Bight, are now under increasing pressure resulting from their high tourism potential. Improved infrastructure and white sandy beaches are attracting both Belizean and international investors, which has resulted in much land development and a boom in property prices. Almost all the

land on both sides of Hopkins and Seine Bight has now been purchased—primarily by non-Garinagu—and the cayes to which the Garifuna have traditionally had unrestricted access are being purchased, mostly by foreign investors.

The National Garifuna Council is very concerned about the difficulty Garinagu are now experiencing in securing land titles in and around their communities and their increasing loss of access to the cayes.³³ A preliminary legal analysis of Garifuna land rights by the International Human Rights Advocacy Center concluded that the Garifuna “do possess some form of land rights which is entitled to protection under domestic and international law” (Noe 2001, 1). However, there is lack of clarity among the Garinagu about the nature of their title and rights to lands and resources (e.g., individual titles, communal titles, or a mix of both), and they have indicated that this issue needs to be discussed more thoroughly in the communities, particularly in Hopkins, Seine Bight, and Barranco.

14.8 Conclusion

Belize clearly represents a unique set of circumstances in the region in regard to its treatment of indigenous peoples, with multiple, sometimes contradictory messages regarding the country’s attitudes toward its indigenous groups. Though there is a high degree of ethnic diversity in the country and a distinct indigenous presence, Belize has no official government policy on indigenous peoples. Yet the country’s Supreme Court has taken a progressive position on land rights for indigenous peoples. On the other hand, that decision has not yet been implemented. These conflicting impulses regarding the country’s indigenous population make an assessment of the situation of indigenous peoples in Belize a daunting undertaking.

Socioeconomic indicators for indigenous peoples and Garifuna remain low compared with the rest of the country despite relatively high levels of investment in the districts in which they live. A lack

³² At least 17 logging concessions were issued in the 1990s; more recently, as noted earlier, the government granted an oil exploration concession to a U.S. company, U.S. Capital Energy.

³³ National Garifuna Council of Belize (n.d.) and Michael Polonio, personal communication, October 5, 2007.

of disaggregated data makes it difficult to design and target such investments as well as to monitor and evaluate their impact. As a result, there is a need for comprehensive assessments of the health and education status of Maya and Garifuna communities, including barriers to access and quality of service, in order to design programs and measures that will fully benefit these communities. To ensure their relevance and appropriateness, Maya and Garifuna representatives should participate in the design, implementation, and results sharing of any assessments conducted.

The traditional lands, territories, and resources of the Maya in Belize are extremely vulnerable to increasing pressure from land development related to expanding tourism along the Caribbean coast, seismic exploration in the country's south, and climate change initiatives such as carbon credits that limit use. The recent Supreme Court of Belize decision in the *Maya Villages* case provides some certainty regarding indigenous rights to land, but implementation of the decision is likely to be problematic. This means that land tenure for both the Maya and

the Garifuna is still highly uncertain, and protection of these lands, territories, and resources remains the number-one priority for these communities. Land tenure security is also important for sustainable economic development activities. Both the Maya and Garifuna are looking for new ways to participate in traditional economic activities such as agriculture as well as new areas of opportunity in tourism, and having titles to their lands and, therefore, exerting control over the associated resources are seen as important prerequisites to any kind of significant investment. Closely related to both land tenure and sustainable economic development is effective participation in decision making. Both the Maya and the Garifuna have identified capacity building, inclusion of women, and strengthening traditional governance systems as key long-term priorities for their communities. Strong and effective governance at the local level will ensure that their needs and concerns are heard at the national level and that they are prepared to participate and contribute to national-level planning and decision making regarding issues that affect their lives and livelihoods.

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The Growing Threat to Citizen Security

15.1 Introduction

Citizen security in Belize is an issue that is growing in its importance and urgency. An increase in violent crimes is causing a serious deterioration in the level of citizen security, especially in some areas of the country, and the measures implemented to deal with this have so far not been sufficient to reverse this trend.

Growing crime and violence directly damages its victims, sometimes costing them their lives, and indirectly affects the whole population by creating insecurity and lowering their subjective sense of well-being. Besides these apparent impacts, it can impede a country's economy, particularly in the medium and long term, as it raises business costs and discourages investment. Foreign direct investment, which will be so crucial for Belize's economic growth over the medium term (Chapter 1), may be particularly sensitive. It is well documented that one of the conditions potential foreign investors in a country look for is the citizens' sense of security (whether factual or perceived) (see, for example, Daniele and Marani 2008). Crime and violence deters foreign visitors, and Belize's tourism industry has consistently raised it as a long-term concern. Furthermore, crime—particularly organized crime related to drug trafficking—can undermine governance.

This chapter is structured in the following way: first it presents information on violence and crime in Belize. Then it summarizes the broad institutional issues related to organizations involved in citizen security in the country, as well as recent government policy reform efforts. Finally, it sets out additional policy options regarding citizen security, taking into consideration the specificities of the country.

15.2 Violence in Belize

As noted in the previous section, citizen security is an important theme not only from the viewpoint of the well-being of a country's residents, but also from that of its economic growth and governance. To demonstrate the dimension of the problem in Belize, this section includes key information about crimes and violence in the country, providing some international comparisons. It is intended to highlight some of the characteristics of citizen security in Belize, with a special emphasis on juvenile violence.

15.2.1 *Characteristics of Violence and Crime in the Country*

In essence, Belize's violence and crime situation is characterized by high rates of homicide, its urban nature, high levels of firearm use, a strong relationship to drug trafficking, and the generally young age of both perpetrators and victims.

In spite of data limitations (see the Appendix), criminal statistics for Belize show that violence in the country increased over the last decade. The number of homicides, the most common indicator used to analyze a country's level of violence, steadily increased between 2003 and 2008 (see Figure 15.1). Nevertheless, total numbers of several major crimes (rape, burglary, and theft) have declined since 2006 (see Table 15.1). The total numbers of all five categories of major crime declined from 2008 to 2009, although it is too soon to tell whether crime has peaked.

International comparison shows that Belize has a high homicide rate (32 murders per 100,000 inhabitants in 2008) even by Latin American standards. Not only is it higher than the Caribbean

or Latin American average, but it nears the levels observed in Jamaica, Guatemala, Honduras, or Colombia, countries known for their high crime rates (see Figure 15.2).

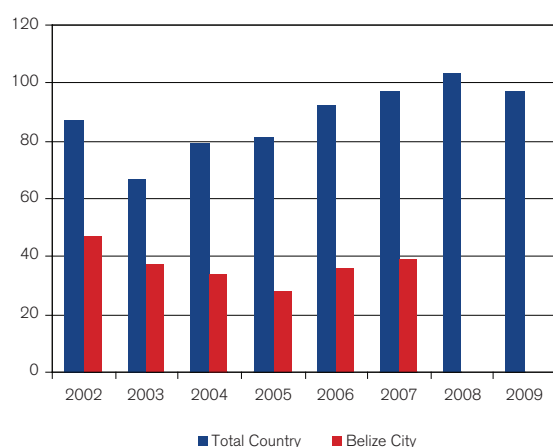
Crime in Belize is predominantly urban. Of the murders committed in the country during 2005–07, 42 percent occurred in Belize City, where 25 percent of the country's population lives. The murder rate in Belize City increased to 61 for every 100,000 inhabitants in 2007. Most of the murders took place in three constituencies of the city (Lake Independence, Port Loyola, and Collet), all of which are areas of extreme poverty.

The majority of Belize's murder victims are young and male. In 70 percent of the murders in Belize City in 2006, the victims were men under the age of 35. Declining arrest, prosecution, and conviction rates resulted in a conviction in only one in ten murder cases between 1999 and 2007 (Crooks 2008).

Another predominant feature of the crime situation in Belize is the high levels of use of firearms in the commission of crimes. Most murders in the country are committed with firearms. As of 2008, the percentage of people injured by firearms was significantly higher in Belize, compared to other Central American countries (see Figure 15.3). Additionally, firearms are used in the majority of the country's violent robberies.

According to the Belize Police Department, crimes against property have decreased in number since 2005 (see Table 15.1), but at the same time, the

FIGURE 15.1. HOMICIDES IN BELIZE AND BELIZE CITY, 2002–09



Source: Police Department statistics.

Note: Data on homicides are not available for Belize City in 2008 and 2009.

TABLE 15.1. FREQUENCY OF FIVE MAJOR CRIMES, BELIZE, 2003–09

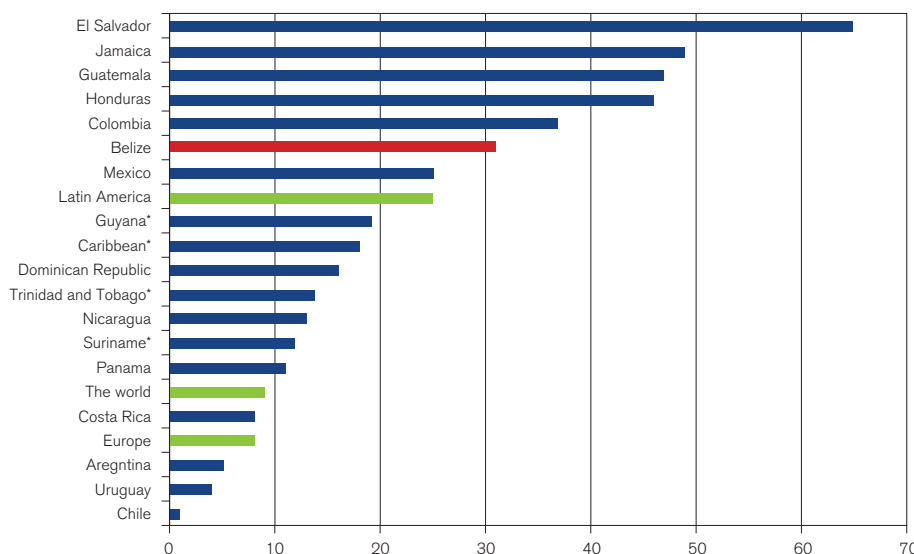
Crime	2003	2004	2005	2006	2007	2008	2009
Murder	66	79	81	92	95	103	97
Rape	50	53	47	43	38	38	30
Robbery	443	440	653	526	514	532	526
Burglary	1,741	1,660	1,758	1,514	1,256	1,303	1,286
Theft	1,707	1,533	1,587	1,587	1,233	1,413	1,332
Carnal knowledge	n/a	n/a	n/a	90	66	98	62
Total	4,007	3,765	4,126	3,852	3,202	3,487	3,333

Source: Belize Government Official Portal (<http://www.belize.gov.bz/>).

Note: n/a = not available

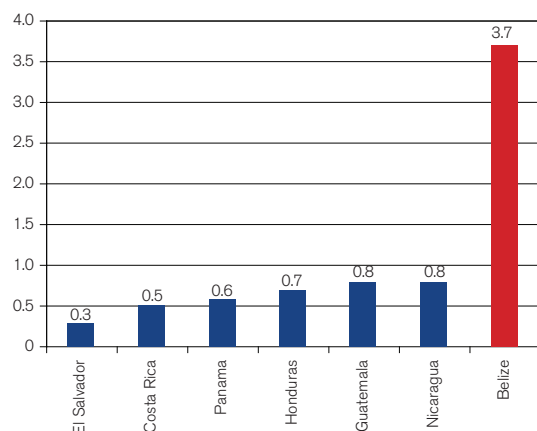
FIGURE 15.2. INTERNATIONAL COMPARISON OF HOMICIDE RATES

(murders per 100,000 inhabitants)



Source: Geneva Declaration Secretariat (2008).

Note: Data are from 2006, except for countries marked with an asterisk, for which the most recent data available are for 2004.

FIGURE 15.3. PERCENTAGE OF PEOPLE INJURED BY FIREARMS, 2008

Source: UNDP (2009).

total dollar amounts involved are increasing, even after adjustments for inflation. Property crimes contribute to increases in the perception of insecurity, particularly in urban areas like Belize City, where more than half of violent robberies in Belize are committed (although the trend has fluctuated).

The illegal trafficking of drugs—border trafficking or retail trafficking within the country—sets

a backdrop of violence and criminality in Belize. Like other Central American countries, Belize is a drug transit and distribution center for drugs going to countries outside the region. The country's geography and topography make it ideal for drug smuggling. It is located between major cocaine-producing and -consuming countries, shares borders with Guatemala and Mexico, two major heroin and marijuana producers, and has a long, hard-to-monitor coastline. It also has dense unpopulated jungle areas and numerous inland waterways. In addition, there are about 140 isolated airstrips and virtually no radar coverage except for an area within a 30-mile radius of the international airport near Belize City (Taylor 2000).

The extensive flow of drugs through the country ensures accessibility of a supply of drugs for the country's internal market as well. Belize's incidence of drug crime is much higher than that in neighboring countries and nears the level of the United States (see Table 15.2).

Police Department and Coast Guard intervention has resulted in the seizure of increasing amounts of illegal drugs in the country, mostly processed cannabis and cocaine in powder form.

¹ This statistic was taken from the "Belize Central Prison Statistics" page on the Kolbe Foundation's website (<http://www.kolbe.bz/main/index.php?section=20>). Note that "prisoners" include those remanded, not only those convicted.

TABLE 15.2. SUSPECTED DRUG CRIMES IN SELECT COUNTRIES, 2005–06

(per 100,000 inhabitants)

Country	2005	2006
United States	615.8	624.0
Belize	612.2	444.2
El Salvador	48.1	n/a
Dominican Republic	40.8	44.5
Nicaragua	34.5	34.7
Costa Rica	4.5	10.8

Source: UNODC (2007).

Note: n/a = not available.

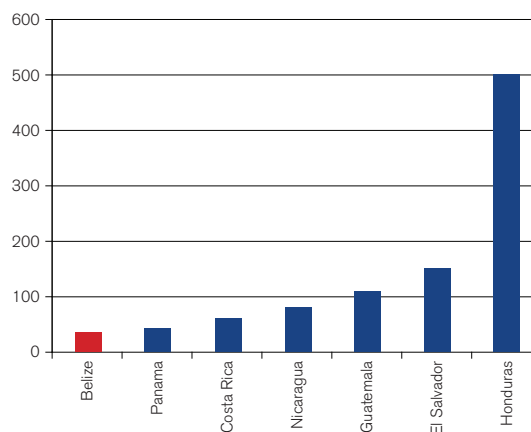
The U.S. Overseas Security Advisory Council considers organized crime in Belize, including money laundering, trafficking in stolen vehicles, human trafficking, drug trafficking, and stealing among different drug traffickers, to be beyond the ability of the police to address effectively (OSAC 2009).

Belize's location, adjacent to the northern triangle of Central American countries, places it in a vulnerable position for importing the practice of juvenile gang formation, which takes on substantial implications given the country's sizable young population (see Section 15.2.2). There are numerous indications of a growing presence of internationally organized gang groups in the country. Seventeen to twenty gangs have been identified, with around 900 documented members (Crooks 2008). For example, Mara Salvatrucha, a large U.S.-based gang group whose members are typically either Salvadoran nationals or first-generation Salvadoran Americans, is now confirmed to be accepting members from Belize (U.S. Department of Justice 2002). However, in terms of international comparison, the levels of gang membership in Belize at this point are still low (see Figure 15.4).

As has happened with citizens from other Caribbean and Central American countries, deportations of Belizeans from the United States have risen. The number of Belizean deportees from that country rose by 26 percent between 2003 and 2007, although the trend is somewhat uneven (see Table 15.3) (Statistical Institute of Belize 2008). The number of deportees from Belize is lower than those for other countries of the region, but the annual rate of deportees is proportionally

FIGURE 15.4. GANG MEMBERSHIP IN SELECTED LATIN AMERICAN COUNTRIES, 2005

(per 100,000 inhabitants)



Source: UNODC (2007).

higher in Belize than in El Salvador, the Central American country that receives the highest number of deportees per year. Belizean deportees are mainly young people, possibly juvenile offenders who have been gang members.

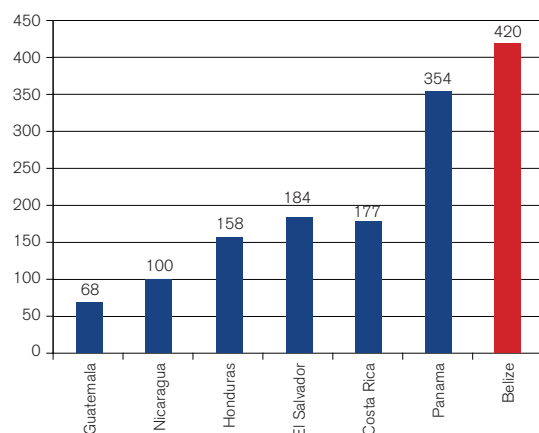
Belize's high number of prisoners relative to the country's population (see Figure 15.5) may be attributed to several factors. First, the delays in the country's judiciary process are increasing the prison population. In every year between 2004 and 2007, the number of persons remanded exceeded the number of persons convicted. Second, the high levels of drug-related crimes in the country, as previously described, are contributing to the higher number of prisoners. In both 2006 and 2007, approximately 20 percent of convictions in the country were in the offense category of "dangerous drugs."

More than 85 percent of the country's prisoners are Belizean; the rest are from other countries, mostly from Central America and the Caribbean.

TABLE 15.3. BELIZEAN DEPORTEES FROM THE UNITED STATES, 2003–07

Year	Number of deportees
2003	134
2004	173
2005	162
2006	152
2007	169

Source: Belize Police Department.

FIGURE 15.5. NUMBER OF PRISONERS PER 100,000 INHABITANTS, 2005

Source: UNODC (n.d.).

Note: The information is from the end of February 2005, the latest available data.

Non-Belizeans—mainly Guatemalans, Salvadorans, and Hondurans—have a substantial presence in the country's prison system, accounting for 20–30 percent of the those convicted of crimes in the country each year between 2004 and 2007.¹

Domestic violence represents another substantial threat to security in the country. Since all violence is mostly a learned behavior, national authorities have been making significant efforts to curb domestic violence to avoid its intergenerational transmission. Although data related to domestic violence in Belize vary depending on whether they are provided by the Belize Police Department or the Women's Department of the Ministry of Human Development, the figures are in any case a cause for concern. According to the Women's Department's 2006 Annual Report, there were close to 800 reported cases of domestic violence in the country in that year. Typically, reported instances represent only a small percentage of all occurrences, because of a general reluctance to report domestic violence to the authorities.

15.2.2 Juvenile Violence and the Vulnerability of Young People

The average age of Belize's population is 20; three-fourths of the population is under age 35, and almost half is under age 18. This makes Belize a country of significantly young population in global comparison (Population Reference Bureau 2010).

Thus, juvenile violence in the country is a particularly pressing concern. Children and youth are the most violence-prone groups in the country; youth are the main victims of violent crimes in Belize and, in the majority of the cases, also the perpetrators.

Most crimes in Belize are committed by young offenders, mostly male. According to the Belize Police Department (2006), 47 percent of those persons convicted of crimes in the country between 2004 and 2006 were between 16 and 25 years old, and 32 percent were between 26 and 35; 80 percent were male. The average age of adults serving a prison sentence is 23, and nearly 40 percent of those in prison are between ages 16 and 25.

Living conditions for young people in Belize contribute heavily to the crime rates among youth. According to data from the latest *Country Poverty Assessment Report* (Government of Belize 2009), 60 percent of the country's poor are under 24 years old, and the proportion of children under age 17 who are poor ranges between 46 and 56 percent (Table 15.4).

Lack of job opportunities; an unemployment rate of 33 percent for youth ages 14 to 19 (Table 15.5), according to the latest *Country Poverty Assessment Report* (Government of Belize 2009); low salaries for the jobs that are available; broken families; and a lack of basic public services are all factors that cause stress for Belize's young people.

A substantial number of these Belizean youths report having economic difficulties (they have to support their families or are unemployed), having emotional deficiencies (they have been ver-

TABLE 15.4. POVERTY AMONG BELIZE'S CHILDREN

Age group	Percentage poor		Change, 2002–09
	2002	2009	
0–4	38	46	+8%
5–13	41	48	+7%
14–17	37	56	+19%
18–24	32	44	+12%

Source: Government of Belize (2009).

TABLE 15.5. UNEMPLOYMENT RATES BY SEX AND AGE GROUP, 2009

(percent)

Age group	Female	Male	Both sexes	Difference between sexes
14–19	43.4	26.1	33.0	17.3
20–24	27.9	16.2	20.8	11.7
25–49	15.9	5.0	9.6	10.8
50–64	21.1	6.3	11.3	14.7
65+	9.4	4.6	5.7	4.8
All ages	21.1	9.1	13.9	12.0

Source: Government of Belize (2009).

bally or psychologically assaulted), and having suffered physical assault. All these factors create obstacles to their social integration. Because of the lack of educational, recreational, and professional opportunities, as a result of programs that do not reach these vulnerable youth, many times they seek solutions to their problems through illegal means, that is, by committing violent acts and crimes in general, as can be seen in the data on convicted persons by age group cited above (Rosberg 2005).

A striking increase in the incidence of young offenders is aggravating this situation. According to statistics from Belize's judiciary, between 2001 and 2006, the number of offenders under age 16—whose cases are heard by the Family Court, in accordance with the country's Juvenile Offenders Act, since they are under the age of criminal responsibility—rose almost 500 percent. According to the Belize Police Department's 2006 Annual Report, 196 youths under age 16 were convicted of crimes in that year; crimes against property were committed in 110 of the reported cases, including 20 robberies, 28 burglaries, and 36 thefts.

As a result of the country's heavy drug trafficking (see Section 15.2.1), drugs are readily available to the country's youth, as they are to the population overall, especially in urban settings. Many urban young people lack recreational areas and education or training to provide skills that would facilitate their entry into the labor market, making them easy prey to the rampant drug dealing in urban areas.

15.3 Institutional Issues

Although a number of ministries and agencies have undertaken various initiatives under the responsibilities assigned to them by law, crime and delinquency in Belize have nevertheless been on the increase. A qualitative diagnostic of the country's institutions² suggests that a number of factors may be linked to the difficulty in halting and reversing this trend:

1. **Resource and information factors.** In general, most institutions involved in the area of citizen security suffer from a shortage of financial and human resources and lack an adequate information system. The Belize Police Department, while making progress in the professionalization of its responsibilities, suffers from various dimensions of institutional weakness, including the lack of an integral security strategy that guides the department's activities, deficiencies in its data system, the lack of a system for monitoring and evaluating the impact and/or result of the activities it carries out, and weak support for the Community Policing Unit. On the other hand, Belize spends significant resources on its police force. As of 2007, the Belize Police Department had 1,234 officers—one for every 252 inhabitants. This is a high ratio of police to citizens compared to other countries in the region, which have many more inhabitants per police officer. For example, Guatemala, Honduras, and Nicaragua show 641, 791, and 557 inhabitants per officer, respectively (see Table 15.6).

² See the Appendix, "Data and Methodology Issues," regarding the basis for this diagnostic.

TABLE 15.6. TOTAL NUMBER OF POLICE OFFICERS AND NUMBER OF INHABITANTS PER OFFICER

(as of December 2007)

Country	Number of police officers	Number of inhabitants per officer
Belize	1,234	252
Costa Rica	12,553	350
El Salvador	21,000	332
Guatemala	20,299	641
Honduras	8,887	791
Nicaragua	9,216	557
Panama	17,113	195

Source: UNDP (2009).

By contrast, Belize's penitentiary system relies on financial sources outside the government, as the resources obtained from the national budget are insufficient to cover the operating costs. These sources finance one-third of the costs, which could potentially affect the continuity of the treatment inmates receive, as the levels of funding from these sources cannot be considered stable.

2. **Coordination and dialogue factors.** With a few exceptions, little coordination exists among the institutions involved. For example, there is no system for sharing information among public prosecutors, the Police Department, and the judiciary, which would allow the sharing of common statistical data regarding crime; thus, the information released to the public by each institution has not been rigorously cross-checked for precision. Local government participation in citizen security matters is still at very incipient stages. Local governments lack experience with projects to prevent violence and crime, limiting their capacity to plan and execute activities associated with such projects. Their capacity to involve communities in these types of projects is still weak. The participation of civil society in citizen security matters has been scarce as regards the definition of policies and the supervision of initiatives. This is making it difficult for the society as a whole to face the problem of citizen security, which could potentially contribute to reducing the cost of crime prevention and control. Delays and decisions in the judicial process are not duly explained to the public, which weak-

ens the public's perceptions of the reliability of the process and hence public support for the judicial system and its important duties.

Most of the initiatives implemented historically to prevent violence and crime in the country have been isolated; as they have not arisen from a common diagnosis regarding the situation of violence and crime, they have failed to thread together control and prevention.

15.4 Government Policy Reform Efforts

In order to address the country's challenges related to citizen security, in June 2010, Belize's Prime Minister, Dean Barrow, announced a new crime prevention initiative: Restore (Re-Establish Security Through Outreach, Rehabilitation and Education) Belize. Restore Belize will operate out of the Office of the Prime Minister and replace the current Inter-Ministerial Committee on Crime. The initiative will pull together all government agencies to address the range of institutional, social, and economic risk factors behind the surge in violent crime in Belize. At the political level, it will be governed by the Restore Belize Council, chaired by the Prime Minister and composed of the Ministers of the Police and Public Safety, Defense, Education and Youth, Health, Human Development, Labour, and Sports. There will also be a Steering Committee at the operational level, composed of the chief executive officers of the seven ministries, the Chair of the Crimes Control Council, and representatives from the business community and nongovernmental and community-based organizations. The umbrella initiative will coordinate the resources of the seven ministries represented on the council to bring forth a holistic, integrated, and targeted approach to crime and violence. Its activities will include (1) law enforcement aimed at the main drivers of crime in targeted areas, (2) physical rehabilitation of communities, (3) social outreach activities, (4) community-strengthening initiatives, and (5) interventions targeted toward preventing violence among vulnerable youths.

15.5 Lessons from Experiences in Other Countries

Belize could benefit from valuable lessons provided by international experience as it grapples with

citizen security issues. Successful and cost-effective activities related to citizen security in Latin America and the Caribbean are well documented (see, for example, Buvinić, Alda, and Lamas 2005) and include institutional strengthening of the organizations involved, crime prevention programs focused on youth, activities for social reintegration of youth in conflict with the law, and support programs for family members of delinquent youth. Many of these activities and programs have been executed with modest resources, which makes it feasible for Belize to replicate them.

In general, international experience has shown that violence tends to subside when a holistic, integrated and interagency approach is implemented, with precise targets at the local level (IDB 2010). However, this strategy also requires the engagement and ownership of local communities. In these respects, Restore Belize shows considerable promise. It is a coherent and integrated program that recognizes the need to act in the short, medium, and long terms. It is also based on considerable input from stakeholders, such as local communities and the private sector, and intends to promote partnerships between different actors.

Experience in Nicaragua points to the value of community policing and to the importance of exploiting existing institutional strengths. An evaluation of Nicaragua's Citizen Security Program (Vera Institute of Justice 2009) shows that its strength is that its design was based on a philosophical foundation of community policing and governance that already existed in Nicaragua. When the country's National Police were established approximately 30 years ago, most of the officers were recruited from the ranks of revolutionary forces, which had strong links with the community. Their strength is also backed by the significant voluntary participation of community members, which was sensible in the case of Nicaragua, where there appears to be a culture of voluntarism. The Belize Police Department mission statement emphasizes the concept of "the police and community working in partnership for a safer Belize," and its vision stresses the strengthening of links with all community members. While Belize has no historical background equivalent to that of the revolutionary forces in Nicaragua, Belize could study and incorporate some useful

elements from Nicaragua's model for establishing and maintaining ties with each neighborhood.

International experience also underlines the importance of strengthening data collection and processing capacities in order to enable evidence-based policy to be made. The same evaluation of Nicaragua's program concludes that the weakness of the program lies in its failure to implement a citizen security clearinghouse to collect, validate, systematize, disseminate, and generate reports on data and successful practices in the area of prevention and control of violence and crime. Since such a clearinghouse has not been developed to date, the study says, the country lacks trustworthy and integrated data management tools regarding crime and violence to permit more efficient and optimal focusing of the country's limited resources.

Of course, lessons can be learned as well from examples in developed countries. One well-known U.S. case is that of Boston. To cope with the city's high incidence of gang violence and murder in the late 1980s, city authorities undertook a comprehensive community-based strategy to reach at-risk youth before they took their first step into crime and to deal with those already in trouble. The Youth Violence Strike Force, a coordinated multiagency task force of 45 full-time police officers and 15 officers from outside agencies, includes representatives of the U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives, the Massachusetts State Police, and juvenile corrections officers. It is characterized by the involvement of many different parties in the fight against youth violence and the use of close communication with youth. The strike force carried out nightly home visits, meeting with gang members to let them know about the city's zero-tolerance policy (under which they would be automatically and severely punished for a variety of infractions), and undertook partnerships with businesses to engage at-risk youth in activities geared to teach youth leadership and life skills, including conflict resolution and time management, and also to assign them mentors. As a result, youth homicides dropped some 80 percent citywide between 1990 and 1995, and in 1996, not a single youth died in a firearm homicide in the city. Violent crime in public schools decreased more than 20 percent in the 1995–1996 school year, and more than 150 drug dens were closed

through joint federal-state-local cooperation (OJJDP 1999). As discussed earlier in the chapter, available data indicate that crime and violence in Belize is characterized by urban nature, high levels of firearm use, a strong relationship to drug trafficking, and the generally young age of both perpetrators and victims. As these same elements were covered in the Boston experience with good results, it seems plausible that the approach used in Boston might be able to be applied successfully in Belize as well. Additionally, the interinstitutional approach involving families and local communities used in the Boston experience could be characterized as one cost-effective way of preventing crime, as opposed to expending resources on isolated and uncoordinated efforts.

The U.S. Centers for Disease Control and Prevention (Thornton et al. 2002) offers various types of strategies on youth violence prevention, drawing on many experiences in this area: parent- and family-based strategies, home-visiting strategies, social-cognitive strategies, and mentoring strategies. For each type of strategy, an analysis is presented identifying elements that need to be considered in designing youth violence prevention programs. A number of governmental and nongovernmental organizations in Latin America and the Caribbean that work with at-risk youth are engaged in activities in one or more subareas identified by the Centers for Disease Control

and Prevention. Some examples which are likely to work for Belize include promoting sports as a means for productive use of time, providing job skills training, and creating neighborhood prevention teams that include parents and family members. These seem appropriate for Belize because they require a relatively small amount of resources, as they can be built on existing platforms, such as Youth for the Future.

It is important that Belizean authorities examine what these various organizations are doing in a systematic and integrated manner, rather than pursuing randomly selected examples, taking into consideration the specificities of the country that are described in this chapter. To achieve this, Belize needs to study the cases that have been implemented at three different levels. At the primary prevention level (crime and delinquency prevention in general), activities specifically designed for diverting youth from antisocial behavior should be the priority, considering the country's young population. At the secondary level (for those who are considered at risk for becoming delinquent), specific measures for keeping youth away from firearms and illegal drugs should be considered. Finally, at the tertiary level (for those who have already been in conflict with the law), measures for social reinsertion for former inmates, particularly for young male ex-offenders, should be examined.

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Appendix. Data and Methodology Issues

This chapter is based on available crime and violence data from the main public agencies involved in these issues in Belize. Additional information provided by international organizations has also been considered. Although there is no specific research that analyzes the origin of the problems of crime and violence in Belize in depth, other studies on the probable risk factors in the country have been taken into account.

The lack of in-depth research on the causality of crime and violence has hindered a more complete systematization of the information collected. In spite of this, in general terms, official information is substantially reliable; the data bear a reasonable relationship to the situation of violence and crime acknowledged by the involved authorities and various individuals who were interviewed for the chapter. In some cases, the statistical information is also supported by an institutional network surrounding an expressly established public policy (such as the gender policy).

The Belize Police Department annually produces crime statistics and reports to the Ministry of the Police and Public Security. It processes information from reports on crimes received in its different areas of responsibility (i.e., the country's Eastern, Northern, Southern, and Western Divisions).³ Police Department statistics provide monthly information on the total number of reports received, classified under six main crimes (murder, rape, robbery, burglary, theft, and carnal knowledge, which was included in the "rape" category until 2005). Other crimes are grouped together under "others."

The number of complaints filed by citizens is increasing at a faster pace than official statistics on crimes reported. For example, in 2006, the total number of crime reports rose by 4.6 percent compared with 2005 (10,569 vs. 11,077). However, in

the same year, the number of complaints received increased 9 percent in the Eastern Division (Belize District), Cayo, and Stann Creek, where 55 percent of Belize's inhabitants live (Police Department 2006).

In its Annual Report, the Police Department groups crimes using the same categories as in the Belize Criminal Code: crimes against property (robbery, burglary, and theft), against persons (murder, manslaughter, attempted murder, harm, and wounding, among others), against public morality (including rapes, indecent assaults, and incest), against lawful authority (public order, breaking a protective order, escape and rescue, etc.), and others (forgery, possession of false documents, etc.).

With the exception of the recording of domestic violence cases, for which a methodology shared by the involved agencies is applied, violence and crime must be exclusively analyzed based on the reports recorded by the Police Department, with all their flaws and deficiencies. Information from different sources is not cross-checked, and no mapping of violence and crime based on information shared among the different agencies is carried out. There are no agreements between the different institutions to share information, except for the network of institutions working in the area of domestic violence.

There are no opinion polls that would allow measurement of the levels of victimization and reported crimes committed to verify the consistency of the available information. This weakens the statistical information, because the data cannot be compared with objective information to verify their consistency and reliability. The lack of opinion polls creates difficulties in obtaining information on the probable "black figure" of unreported crimes or on underrecording.

Any numbers and data quoted in this chapter without specific references are from Baston-Maio and Russell (2009).

³ Belize's Eastern Division includes Belize, San Pedro, Caye Caulker, Ladyville, and Hattieville. Its Northern Division includes Corozal and Orange Walk. Its Southern Division includes Belmopan, Benque, and Cayo. Its Western Division includes Dangriga, ISF, and Punta Gorda.