Achieving a Resilient Future for Small States: Caribbean 2050

Edited by Denny Lewis-Bynoe

The Commonwealth

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Commonwealth Secretariat
Marlborough House
Pall Mall
London SW1Y 5HX
United Kingdom

Published by the Commonwealth Secretariat
Edited by Editors4Change Ltd
Typeset by Nova Techset Private Limited, Bengaluru & Chennai, India
Cover design by Rory Seaford
Printed by Charlesworth, Flanshaw Way, Wakefield WF2 9LP

[Cover photo credit: © iStock]
Copies of this publication may be obtained from

Publications Section
Commonwealth Secretariat
Marlborough House
Pall Mall
London SW1Y 5HX
United Kingdom
Tel: +44 (0)20 7747 6534
Email: publications@commonwealth.int
Web: www.thecommonwealth.org/publications

A catalogue record for this publication is available from the British Library.

ISBN (paperback): 978-1-84929-146-0
ISBN (e-book): 978-1-84859-940-6

Foreword

The 'Achieving a Resilient Future for Small States: Caribbean 2050' project, aimed at tackling the problems facing the Caribbean, posed some tough questions to policy-makers and development partners in the region. Do current development strategies set the region on a path to achieve sustainable development? What happens if the region continues on its current policy path? And is the region positioned to capitalise on the use of its limited resources and emerging opportunities?

In this publication, the Commonwealth has sought to answer these questions, focusing on some of the key factors for catalysing change across the region and informed by a wide cross-section of regional 'thought leaders'. Among these are stakeholders involved in citizen security, energy, youth development, financing for development, private sector development and innovation.

A modelling exercise using selected Caribbean countries was undertaken to identify the future direction of the region. While acknowledging current and future threats, such as lack of competitiveness, human and financial resource constraints, crippling debt, limited access to development financing and citizen insecurity, the findings make it clear that the 'business-as-usual' approach is not an option. The findings of this research-based initiative challenge regional policy-makers and stakeholders to apply fresh thinking to eradicate the persisting epidemic of arrested growth and development in the Caribbean region.

This publication offers strategies that will seek to balance the concerns of survivability today and sustainability tomorrow, with a focus on a long enough period to affect necessary changes; recapture the potential of young people across the Caribbean; renew and re-energise the focus on the need to secure the energy requirements of the region; and address the need for a truly transformational system of governance across the region, while strengthening systems that safeguard against corruption and ineffectiveness.

The Commonwealth is committed to supporting the region in planning for, and realising the vision for, the Caribbean we want by 2050, built on resilience. We believe this publication, with its in-depth analysis and action-oriented recommendations, is a critical step in the right direction and will be of interest to policy-makers, stakeholders, key development partners, academics and those with an interest in the Caribbean.

Deodat Maharaj
Deputy Secretary-General for Economic and Social Development
Commonwealth Secretariat

Acknowledgements

Alicia Matheson, Research Officer, Ahmed Ali, Research Officer, Morag Santini, Programme Officer, and Elizabeth Shepperson, Research Officer, Climate Finance and Small States (CFSS) Section, Economic Policy Division (EPD) at the Commonwealth Secretariat, also provided considerable editorial support in getting the book ready for publication. Thanks also go to the Advisory Group, who were The Honourable Winston Dookeran (Minister of Foreign Affairs in Trinidad and Tobago); Rod Pennycook (Chair of the Board of the Royal Bank of Canada); Dr David Smith (Coordinator of the University Consortium of Small Island States); Dr Wendy Grenade (lecturer at the University of the West Indies); Farmala Jacobs (Caribbean Youth Network representative); and Deodat Maharaj, Deputy Secretary General of Economic and Social Development at the Commonwealth Secretariat. We would also like to express our gratitude to Dr Wendell Samuel at the International Monetary Fund for his detailed review and feedback on this publication.

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Abbreviations and acronyms

AAL	average annual loss
AML/CFT	anti-money laundering and countering financing of terrorism
BL&P	Barbados Light and Power
BREA	Barbados Renewable Energy Association
CARICOM	Caribbean Common Market and Community
CCYD	CARICOM Commission on Youth Development
CDB	Caribbean Development Bank
C-SERMS	Caribbean Sustainable Energy Roadmap and Strategy
DAC	Development Assistance Committee
ECLAC	Economic Commission for Latin America and the Caribbean
EPGF	Enriquillo–Plantain Garden Fault
EU	European Union
EU–ACP	EU and African, Caribbean and Pacific States
GAR	Global Assessment Report on Disaster Risk Reduction
GDP	gross domestic product
GEA	Guyana Energy Agency
GoB	Government of Barbados
GP&L	Guyana Power and Light
IDB	Inter-American Development Bank
ICT	information and communication technology
IFI	international finance institution
ILO	International Labour Organization
IMF	International Monetary Fund
IPP	independent power producer
IRENA	International Renewable Energy Agency
IRI	Innovation Resilience Index
IS	Islamic State
JCF	Jamaica Constabulary Force
LCOE	levelised cost of electricity
LNG	liquefied natural gas
MSEs	micro-enterprises and small businesses
NSDP	National Strategic Development Plan
OAS	Organization of American States
ODA	official development assistance
OECD	Organisation for Economic Co-operation and Development
OPM	Office of the Prime Minister
OTEC	ocean thermal energy conversion
PUC	Public Utilities Commission
PV	photovoltaic
R&D	research and development
RE	renewable energy
SIDS	small island developing states
SIDS DOCK	SIDS Sustainable Energy Initiative

SMEs	small and medium-sized enterprises
TFP	total factor productivity
UN	United Nations
UNCTAD	UN Conference on Trade and Development
UNDESA	UN Department of Economic and Social Affairs
UNDP	UN Development Programme
UNISDR	UN International Strategy for Disaster Reduction
UNODC	UN Office on Drugs and Crime
UPP	Unidade de Polícia Pacificadora ('Pacifying Police' programme, Brazil)
USAID	United States Agency for International Development
UWI	University of the West Indies
WEF	World Economic Forum
YDI	Youth Development Index

Contributors

Dr Marsha Atherley-Ikechi has more than 16 years of environmental engineering and utility regulation experience. She has worked within the civil service and statutory organisations, holding both senior management and technical staff positions. She has also guided a number of projects across a broad spectrum of environmental and energy issues. She maintains comprehensive industry knowledge relevant to the sustainable development of small island developing states in areas such as climate change mitigation strategies, integrated water resources management, wastewater treatment and disposal, solid waste management, energy economics, energy efficiency, renewable energy adoption, water/energy nexus and utility regulation. One of Dr Atherley-Ikechi's most recent works investigated Barbadians' perceptions about renewable energy and estimated consumers' willingness to pay for the local water utility's use of renewable energy.

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and Competitiveness of Aruba (NCIC), in addition to the Aruba Management Institute for Sustainable Tourism And Development (AMISTAD). Professor Peterson held the Research Chair on Sustainable Tourism in Small Islands at the University of Aruba. Over the past decade, he has been involved in policy development and partnerships for innovation and sustainability in small island states across the Caribbean. More recently, his academic and business ventures have focused on economic innovation and ecological entrepreneurship in the Caribbean, with a strategic focus on the design and development of entrepreneurial ecosystems and transformative resilience. He can be contacted at rpeterson@cbaruba.org.

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Section One

Context, Global Trends, the Caribbean's Future and the 'Road to 2050'

Chapter 1

A Call to Action: the Caribbean We Want

Deodat Maharaj and Denny Lewis-Bynoe[1]

1.1 Overview

The Caribbean region faces numerous economic, social and environmental challenges. The economies have been caught in a low-growth trajectory and falling total factor productivity (TFP), accompanied by high-debt ratios. Since 2000, while real per capita growth rates in developing countries averaged around 4 per cent per annum, the comparable figure for the Caribbean Common Market and Community (CARICOM) was just around 2 per cent. While the small size of the private sector, the lumpiness of government investment and unfavourable external circumstances have contributed significantly to the poor performance of regional economies, weather-related shocks have also served to derail their development efforts. With the expected intensification of adverse weather events resulting from climate change, and Caribbean countries' limited resources and capacity to respond, the road ahead for the region is expected to be even more challenging.

The region will also continue to face economic shocks arising from its dependence on fuel and food imports. Building resilience will help to buffer the region against over dependence on imported foods and fuel. Oil price shocks (high prices) have historically derailed economic growth prospects and provide an incentive for alternative energy. Indeed another strong incentive for developing alternative energy sources is the pending threat of climate change, and the growing imperative to mitigate its impact by reducing CO_2 emissions. The development of clean alternative energy is paramount. Climate change also poses an existential threat to the small island economies of the Caribbean. Their geographical location and natural beauty, which make them attractive to tourists, also present challenges related to hurricanes and storms.

Climate change is projected to bring an intensity in climatic and environmental shocks. In recent times, the world has experienced an intensification of extreme weather patterns – namely extreme droughts and severe flooding, tsunamis, earthquakes and cyclones – which have led to the loss of lives, property, crops and environmental resources. Moreover, it is also recognised that Caribbean countries individually lack the capacity and financial resources needed for contingency planning and dealing with the challenges of climate change. Resources are needed to build capacities to adapt and capitalise on emerging technologies aimed at providing clean energy. The threat here is significant: the countries that have contributed the least may be required to bear a disproportionate share of the burden of climate change.

These countries are also confronted with socio-economic issues in the form of high unemployment and underemployment, especially among young people. Youth unemployment and underemployment result from a complex set of circumstances, such as the absence of economic opportunities, a mismatch between skills and available employment openings, and inadequate educational exposure. Regardless of the reason, the impact is evident: inadequate human and social capital development and a rising crime rate (World Bank and UNODC 2007; UNDP 2012; Clarke and Popo 2014) constitute the more intractable issues confronting the region. They threaten citizen security and impose heavy costs on the economies and society. Another social trend, ageing population structure, is predicted to escalate through to 2050, resulting in high dependency ratios that are likely to threaten the solvency of pension schemes and other forms of social security.

The region must also come to grips with a number of global trends, some of which may offer economic opportunities, while others may test resilience. Technological advances will accelerate the cross-border flow of goods and services, which are increasingly knowledge intensive. Communication technologies are expected to facilitate the 'on demand' economy, with app-based and cloud-based solutions linking the supply of and demand for services with the touch of a button.

While we cannot say with certainty what new technologies will be operational in 2050, we are fairly certain that the future will be one that is integrally linked with technology. Caribbean economies must, out of necessity, be strategically positioned to participate in and benefit from the opportunities. Strategic positioning calls for honing the skills and competencies required for meaningful participation in the knowledge economy. A number of studies have identified these requirements as intrapersonal, interpersonal and technological or information and communication technology (ICT), in addition to the core educational subjects. Critical thinking, problem solving, creativity and entrepreneurial skills, together with an ability to work in teams, are identified as requirements for all cadres: middle management, professional and senior management.

1.2 Motivations

A review of regional issues and global trends, along with the expressed aspirations of national and regional stakeholders, reveals a long list of critical issues. These include, but are not limited to:

- development of human resources for optimal engagement with the knowledge economy;
- considering the ageing population and its implications from social and economic perspectives;
- fuller integration of young people into productive and rewarding pursuits;
- engineering a shift in the economies to encourage greater participation, by the private sector;
- mainstreaming the environment, particularly mitigation and adaptation, in the development process;

- dealing with oil price volatility and energy security; and
- addressing the issue of high and rising crime and citizen security.

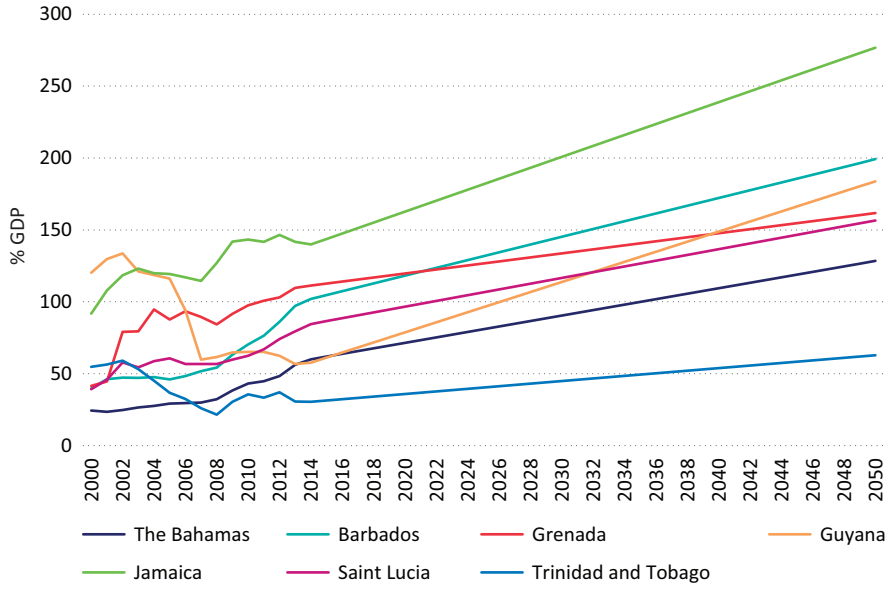
Failure to address these issues will undoubtedly hamper the ability of the region to capitalise on the wave of opportunities emerging globally and achieve its growth and development goals. Indeed, on the current policy path, it is expected that the region is likely to regress to lower levels of development. Motivated by the need to urgently arrest these developments and safeguard the future of this region and transform it, the Commonwealth Secretariat has undertaken this research.

The analysis begins with an investigation of where the current policy path will lead, using a model to simulate the potential future impacts of emerging trends, likely shocks and current policy initiatives over the medium term, i.e. 35 years, to 2050. The modelling framework is a tool for examining the impact of the social, economic and environmental problems facing the Caribbean and exploring alternative development pathways for the region.

Using a sample of Caribbean countries, it was found that the current development path would lead to higher and even more unsustainable debt burdens. Five out of the six countries under study would have a debt-to-gross domestic product (GDP) ratio above 100 per cent, while for two countries this could exceed 200 per cent (see Figure 1.1).

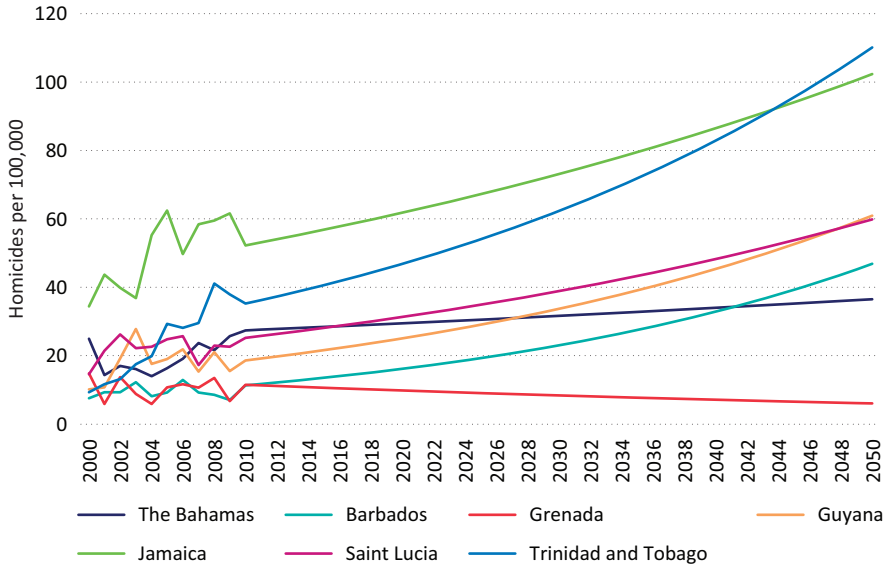
These projections suggest that interest expenditure on the debt will probably become a major drain on public finances in the future, reducing the funds available for development. When combined with the slowdown in growth expected over the

Figure 1.1 Projected debt-to-GDP ratio under baseline



Source: Authors' projections

Figure 1.2 Homicide rate per 100,000 under the baseline



Source: Authors' projections

medium term due to declining competitiveness, it is likely that most Caribbean countries would face worsening socio-economic conditions.

Under this 'business-as-usual' scenario, crime and disorder is forecast to rise in the region. Figure 1.2 shows that in Jamaica, as well as Trinidad and Tobago, the rate of homicides per 100,000 is projected to rise to alarming levels. This trend, however, is not limited to these countries. By 2050, the smaller states of the Eastern Caribbean are also projected to have rates of homicide similar to those currently being reported in Jamaica.

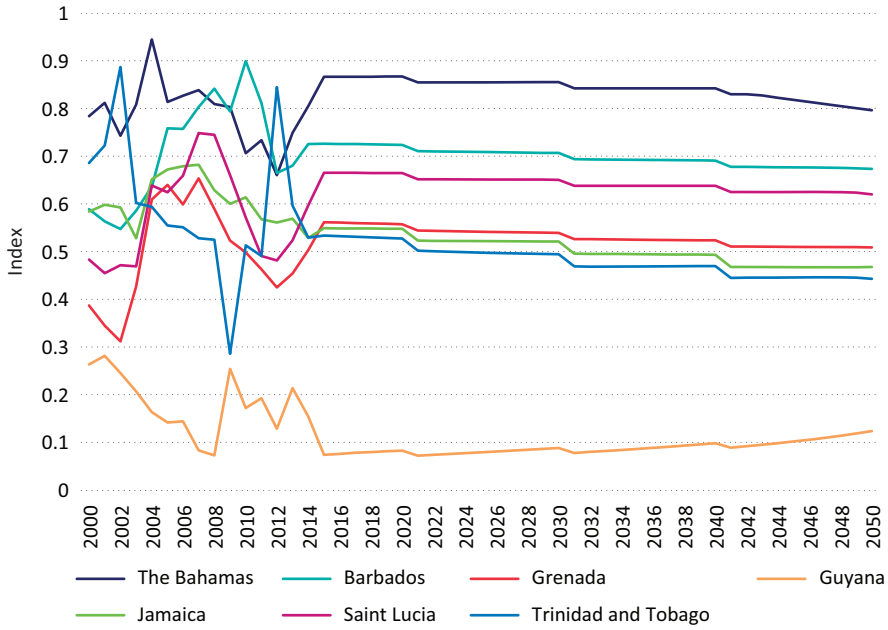
Not surprisingly, as shown in Figure 1.3, based on the socio-economic projections highlighted above, the resilience of most Caribbean countries is likely to fall over the period under analysis. Figure 1.3 provides the baseline projections for the resilience index put forward by Briguglio et al. (2008) and is based on the indices of macro-economic stability, micro-economic efficiency, governance and social development.

Most countries in the region are expected to experience a reduction in the resilience index, particularly Jamaica, due to rising debt and deteriorating socio-economic conditions, with the added implication of increasing their susceptibility to external shocks, lengthening their recovery period.

1.3 The Caribbean we want

Clearly this is not the Caribbean we want, but what if anything can be done to arrest these developments and safeguard the future of the region? How can the region be

Figure 1.3 Resilience index under baseline



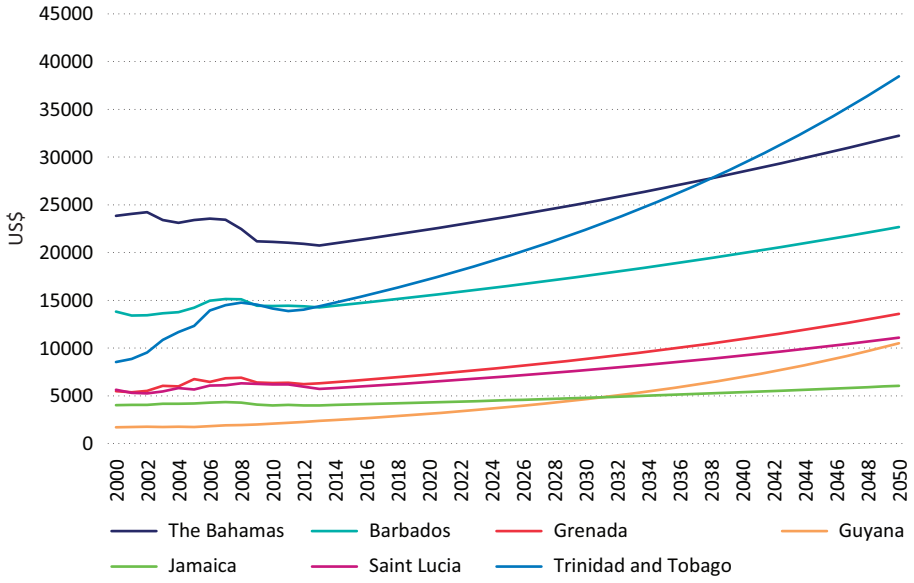
Source: Authors' projections

truly transformed? The important question is 'transformed to what?' What is the Caribbean we want? In our assessment of both the current situation and emerging trends, the Caribbean we want could include and be characterised by:

- creative and enterprising economies in which innovation is the driver of productivity;
- young people fully integrated into national development;
- a stable society where people are safe, secure and prosperous;
- environmental sustainability mainstreamed into the development process; and
- countries built on clean, resilient energy systems that make use of plentiful, local, renewable resources, and are capable of providing stable supplies of energy to all sectors of their society.

Building on these possible visions for the region, this study articulates a strategy to circumvent the projected low levels of growth, high debt and low resilience in the region. The model considers a number of policy interventions aimed at building resilience (see Figure 1.4). These include increased productivity, export growth, increasing youth employment and fiscal reform. In the model, an assumed 2 per cent per year increase in productivity has the greatest impact on resilience among the Caribbean countries considered. While these are clearly not new policy

Figure 1.4 Impact of policy to increase productivity by 2%



Source: Authors' projections

prescriptions, there is value added in distilling the imperative for change, which we hope will catalyse a move from visioning and strategising to implementation of a set of concrete actions. The transformative impact of implementing many already-acknowledged actions – clearly outlined in pre-existing development strategies – is again illustrated using the modelling tool. It shows the Caribbean region with significantly improved development outcomes arising from longer-term planning and focus on implementation. The key is not just the actions/policy prescriptions, but also the approach to development planning.

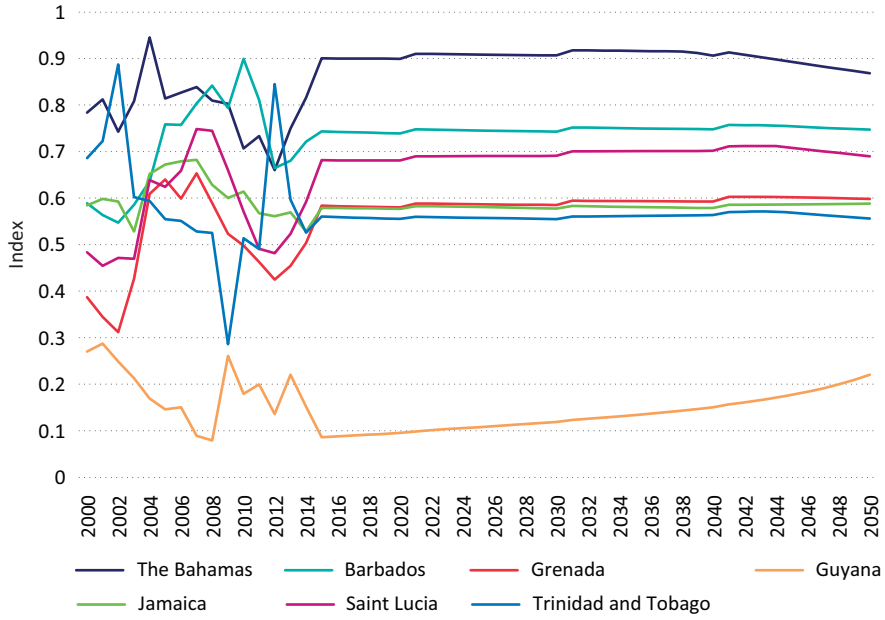
The growth in productivity would also have a positive impact on resilience in the region. By 2050, most of the countries in the sample would be on their way to building resilience (see Figure 1.5). Most countries would exceed their peak resilience index score. The results are vastly different from a 'business-as-usual' scenario.

If such a focus on regional productivity is combined with policies aimed at stimulating export growth in the Caribbean, it is likely that the growth and debt targets set by the regional governments will be within reach.

Interventions aimed at enhancing productivity and exports are also expected to improve public and external current account balances in all countries. Only three countries (Barbados, Guyana and Jamaica) exceeded the debt-to-GDP ratio of 100 per cent by 2050, and only Grenada and Jamaica are unable to attain external current account surpluses by 2050.

Given the trends highlighted for crime in the baseline scenario, the study also considered a policy scenario aimed at enhancing the skills of the young people in

Figure 1.5 Resilience index: projected impact of policy to increase productivity by 2%



Source: Authors' projections

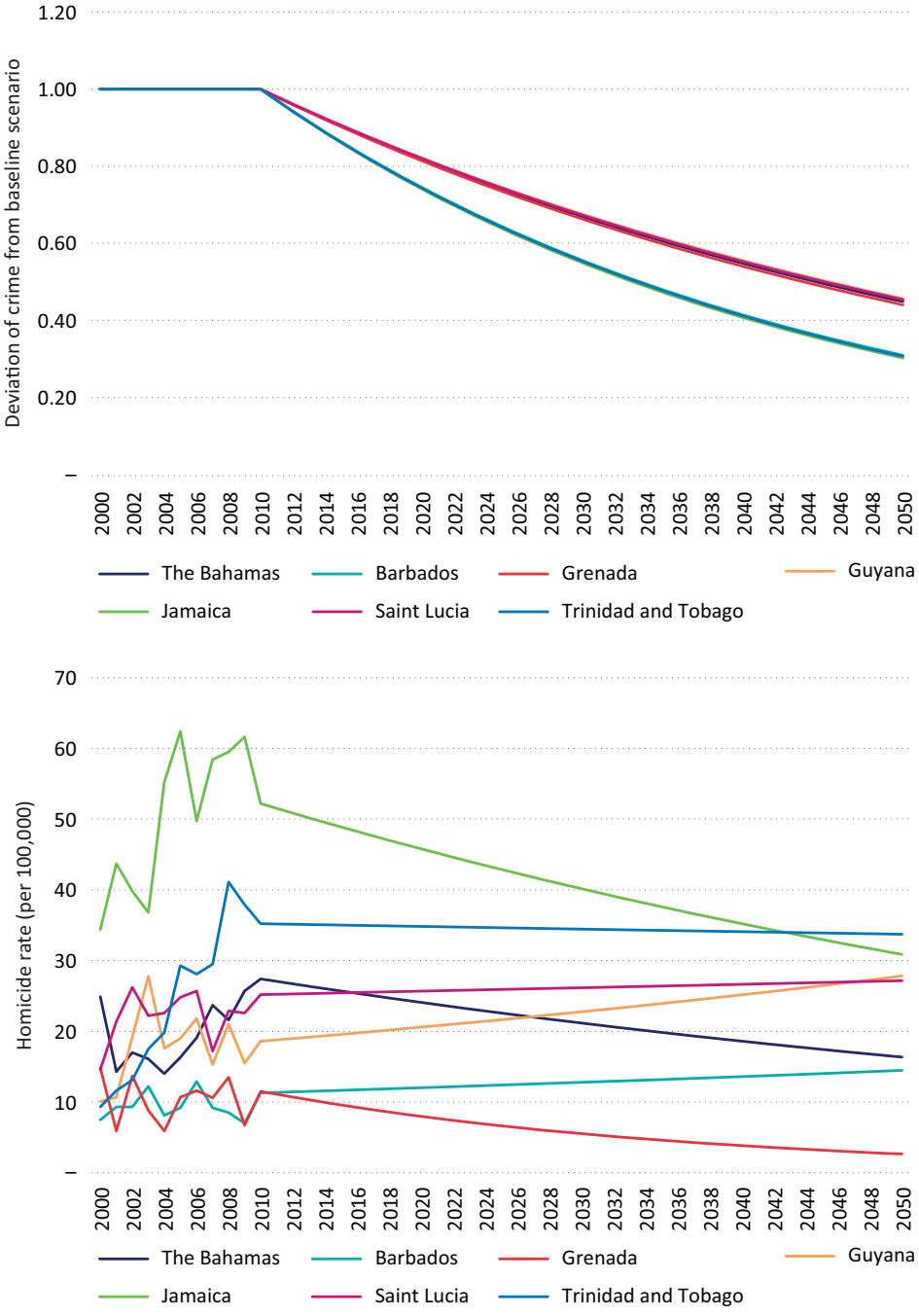
the region and providing job opportunities. Such policy interventions resulted in a reduction in crime to modest levels in most countries (see Figure 1.6).

Fiscal reform in the future is expected to be targeted around reduced government expenditure, given the challenges faced in relation to raising revenue.

A fiscal goal of reducing expenditure by 30 per cent is projected to significantly reduce the debt levels in all countries, with only Jamaica having a debt-to-GDP ratio above 100 per cent by 2050 (see Figure 1.7). Such reform would also have benefits in relation to the external current account.

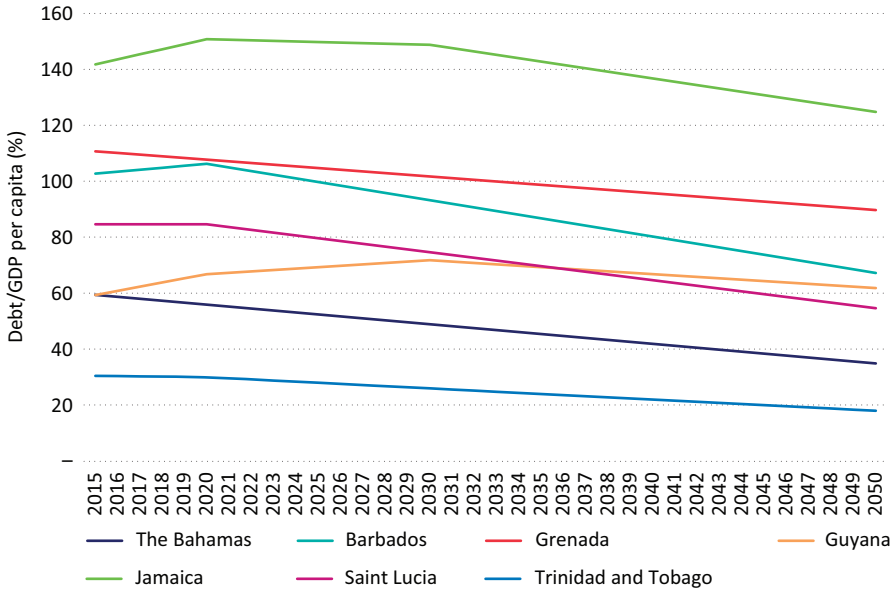
However, this improved outlook hinges on a shift from short-term problem solving to long-term strategic planning. As is evident from the analysis, should regional economies continue on their current policy paths, they would regress economically – with serious social and environmental ramifications. The challenges posed by their size and the complexity of the environment within which these countries operate have been compounded by development strategies that focus on short-term problem solving to the detriment of long-term strategic planning. Indeed, patchy approaches to reforms and inconsistencies in addressing key challenges have contributed to volatile and, often, mixed development results. A myriad of problems and their complexity have overwhelmed regional policy-makers and development partners alike. In this context, we believe that the best approach for moving forward is to ask ourselves the seemingly simple questions: what is the Caribbean we want and how do we begin to a map a way to get there?

Figure 1.6 Projected impacts of enhancing skills of youth and providing job opportunities on crime



Source: Authors' projections

Figure 1.7 Projected impact of fiscal reform on debt-to-GDP ratio



Source: Authors' projections

This project, entitled 'Achieving a Resilient Future for Small States: Caribbean 2050', seeks to address these questions and provide key recommendations on how Caribbean member states can build their resilience and improve their development prospects. Answering these questions must be done over a long enough period to effect meaningful change and achieve the desired results: hence the choice of the year 2050.

In terms of content, the study contains an assessment of the main challenges and opportunities for the region, scenario modelling of where the region could be by 2050, and finally a broad vision for the region derived from feedback from the stakeholder consultations and inputs from the CARICOM Strategic Vision. The vision itself contains sector-specific goals for achieving the vision, which are further elucidated in the sector-specific strategy chapters.

The overall findings of the study are presented in section one of the book, while section two contains the detailed sector studies. Chapter 2 outlines the context within which Caribbean countries are operating and includes a discussion of emerging global trends to frame the understanding of what the world is likely to look like in 2050. Chapter 3 considers a range of possible paths for the region, depending on the policy choices made and the context within which countries are operating. Chapter 4 presents our view of the Caribbean we want and how to get there, entitled 'The Road to 2050: The Caribbean We Want'. Section two provides detailed studies on the energy sector (chapter 5), private sector development and innovation (chapter 6), youth development (chapter 7) and finally citizen security (chapter 8).

Note

1 Deodat Maharaj is the Deputy Secretary-General for Economic and Social Development at the Commonwealth Secretariat. He is a national of Trinidad and Tobago, with more than 20 years' experience working on development at the national, regional and international levels. Inputs were made to this chapter by Marsha Atherley-Ikechi, Anthony Clayton, Ryan Peterson, Tom Rogers, Winston Moore, Sylvia Charles and Christine Clarke.

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Chapter 2

The Caribbean Development Context: Past, Present and Future

Sylvia Charles, Christine Clarke and Winston Moore[1]

2.1 Introduction

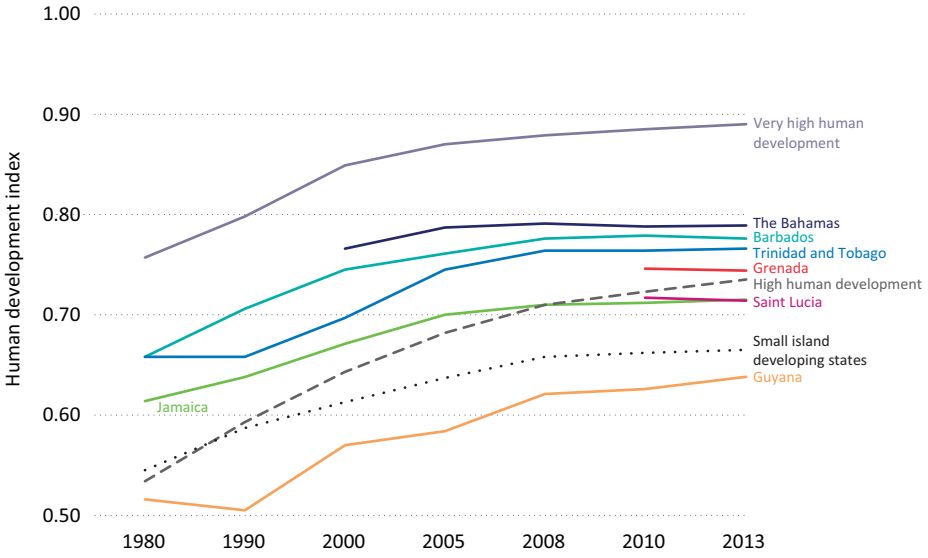
The islands of the Caribbean have made significant progress in economic and social development in the relatively short time that they have been independent countries. At the time of writing only two of the countries included in this study had been independent for more than 50 years – Jamaica and Trinidad and Tobago – and one had been independent for only 35 years (Saint Lucia). Nevertheless, from the 1960s onwards they have made good progress in social and economic development. The 2014 *Human Development Report* (UNDP 2014) considers all except Guyana to have 'high human development'. These human development indices were well above the average for other countries of 'high human development' for every year that the report was produced until 2008, when Jamaica and Saint Lucia started to slip behind (see Figure 2.1). The year 2008 appears to be a turning point in the development progress of the region. While the average index score for countries of 'very high human development' and 'high human development' continued to increase, the countries of the Caribbean plateaued or started to dip (except Guyana, which remained on an upward trajectory).

There are three main components of the Human Development Index: the health dimension, the education dimension and the standard of living dimension. The indicator for the health dimension is life expectancy at birth and, as shown in Figure 2.2, the countries of the Caribbean have continued to steadily improve their index scores over the last three and a half decades.

A similar, though slightly less positive, trend can be found when assessing the scores for the education index (see Figure 2.3). Since the average scores for the countries with 'very high human development' and 'high human development' also plateaued during the period, the region did not appear to lose ground.

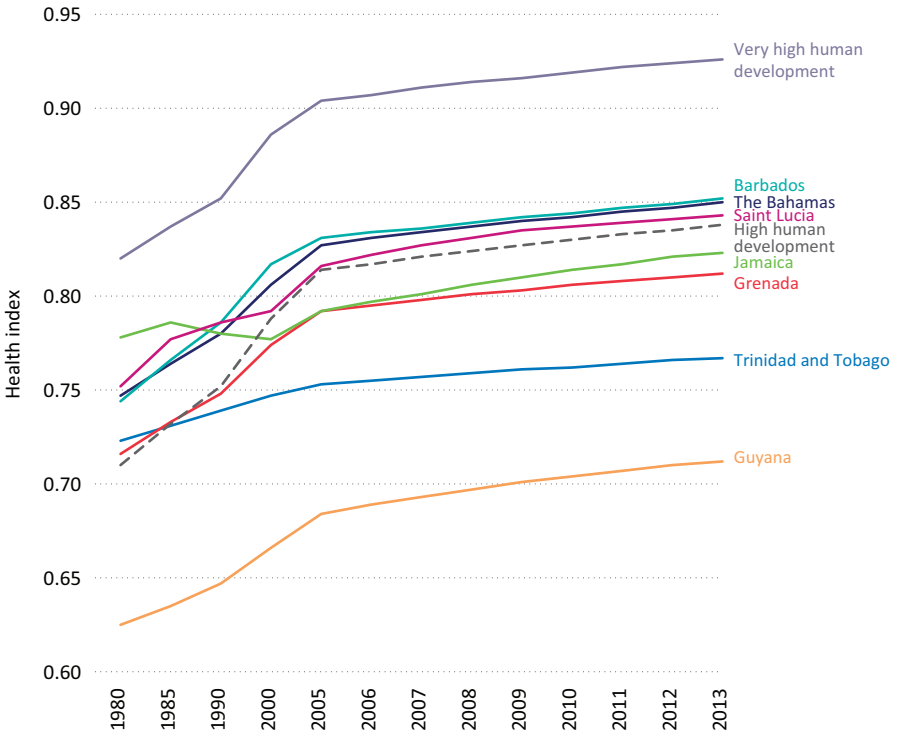
However, in the standard of living dimension, where the indicator is the income index shown in Figure 2.4, only Guyana continued to improve after 2008; Trinidad and Tobago and Jamaica flat-lined, while all of the other countries dipped. The main reason for the deteriorating performance of the other islands lies in their dependence on tourism as the main driver of growth in their economies. The tourism industry in the region has struggled since the global financial crisis in 2007/08 and, as a result, economic growth in tourism-dependent countries has been constrained.

Figure 2.1 Human Development Index trends, 1980–2013



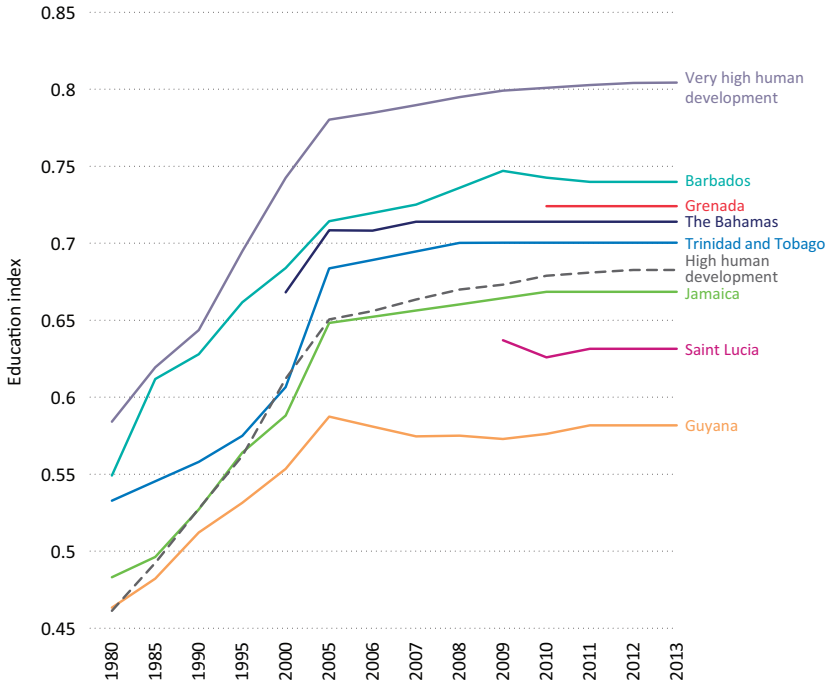
Source: United Nations Development Programme

Figure 2.2 Health index of Human Development Index, 1980–2013



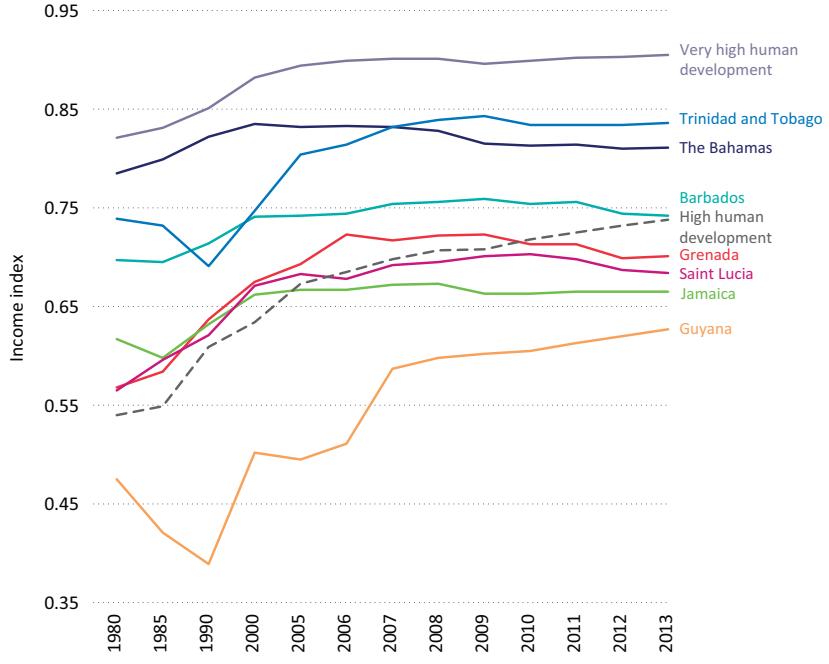
Source: United Nations Development Programme

Figure 2.3 Education index of Human Development Index, 1980–2013



Source: United Nations Development Programme

Figure 2.4 Income index of Human Development Index, 1980–2013



Source: United Nations Development Programme

The impact of external shocks on long-term development targets has long been a challenge in the region, mainly due to the effect on financing. Traditionally, the governments of the region have funded their development goals through a combination of funding from domestic and external sources and fiscal expenditure. Direct project funding usually takes the form of grants or loans from development agencies. These funds are typically used for large projects, such as the construction of highways, hospitals and prisons and improvements of airports and seaports. Domestic financing and fiscal expenditure usually support incremental gains, wages and salaries in the public sector, paying teachers in public schools, and improving government systems and processes. When countries face economic and natural disaster crises, not only does the fiscal purse come under significant strain, but also development funds typically get redirected to supporting the government through the crisis. This is not unique to the Caribbean, but back-to-back crises appear to characterise the region in a way that is vastly different from other regions in the world; and, as clearly demonstrated in the post-2008 period, progress towards development targets starts to fall behind once the economies struggle.

Indeed, the economic vulnerability of small states, the Caribbean included, has long been a topic of academic research. High degrees of economic openness and concentration in only a few export products make small states highly vulnerable to external shocks. argued that this vulnerability could be managed by building economic resilience, which he defines as: 'The extent to which an economy can withstand or bounce back from the negative effects of external shocks'. Economic resilience stems from deliberate policy actions to '(a) absorb the effects of external economic shocks and (b) counteract the harmful effects of such shocks'. This reflects the high potential for the economic and social gains of small states, such as those in the Caribbean, to be eroded.

Briguglio (2014) proposed both an economic vulnerability index as well as an economic resilience index. The Caribbean countries included in the study were classified as having 'high vulnerability', with different degrees of resilience (Table 2.1). The extent of economic vulnerability experienced by a country is assumed to be a permanent or quasi-permanent feature of that country, and does not include policy-related measures. Briguglio considered the example of small island developing states (SIDS), which have small domestic markets as inherent features. Economic resilience, on the other hand, encompasses those features that are policy induced and can be used to mitigate against economic vulnerability. Development strategies should, therefore, be aimed at strengthening the economic resilience of the region.

Briguglio's (2014) results, while confirming the vulnerability of Caribbean economies, also suggest that most have sufficiently adequate policy frameworks that would allow them to bounce back from an adverse event. In this study, the indicators of resilience are macro-economic stability; market efficiency; governance; and sound environmental management. These measure resilience at a point in time, giving a snapshot of a country's policy framework, which would be more accurately reflected as changes over time.

Table 2.1 Economic vulnerability and resilience indices (Commonwealth Caribbean countries *italic*)

High vulnerability, low resilience		**Borderline cases: high vulnerability, medium resilience**		**High vulnerability, high resilience**	
Algeria	Haiti	Azerbaijan	Marshall Islands	*Antigua and Barbuda*	Korea
Angola	Iraq	Cape Verde	Montenegro	*The Bahamas*	Kuwait
Belarus	Libya	*Grenada*	Papua New Guinea	*Barbados*	Lithuania
Bhutan	Mauritania	*Guyana*	*St Kitts and Nevis*	Belgium	Luxembourg
Bolivia	Micronesia	*Jamaica*	*St Vincent and the Grenadines*	*Belize*	Malaysia
Central African Rep.	Mongolia	Jordan	Seychelles	Botswana	Malta
Chad	Nicaragua	Kiribati	Swaziland	Brunei Darussalam	Mauritius
Comoros	Nigeria	Maldives		Chile	Netherlands
Congo, Dem. Rep.	São Tomé/ Príncipe			Czech Republic	Oman
Congo, Republic	Sierra Leone			*Dominica*	*Saint Lucia*
Côte d'Ivoire	Solomon Islands			Estonia	Samoa
Djibouti	Tajikistan			Fiji	Saudi Arabia
Ecuador	Turkmenistan			Gabon	Singapore
Equatorial Guinea	Ukraine			Hong Kong	Slovak Republic
Guinea	Yemen			Hungary	Taiwan
Guinea-Bissau	Zimbabwe			Iceland	Tonga
				Ireland	*Trinidad and Tobago*
					UAE
					Vanuatu
Low vulnerability, low resilience		**Borderline cases: Low vulnerability, medium resilience**		**Low vulnerability, high resilience**	
Afghanistan	Liberia	Albania	Kazakhstan	Australia	New Zealand
Argentina	Moldova	Armenia	Kenya	Austria	Norway
Brazil	Mozambique	Bangladesh	Latvia	Bahrain	Poland

(*continued*)

Table 2.1 Economic vulnerability and resilience indices (Commonwealth Caribbean countries *italic*) (*continued*)

High vulnerability, low resilience		Borderline cases: high vulnerability, medium resilience		High vulnerability, high resilience	
Burundi	Myanmar	Benin	Lesotho	Canada	Qatar
Egypt	Nepal	Bosnia/Herz.	Macedonia, FYR	Denmark	Slovenia
Eritrea	Niger	Bulgaria	Mexico	Finland	Sweden
Ethiopia	Pakistan	Burkina Faso	Morocco	France	Switzerland
Gambia	Russia	Cambodia	Namibia	Germany	United Kingdom
Iran	Senegal	Cameroon	Panama	Japan	United States
Kyrgyz Republic	Sudan	China	Paraguay		
Lao P.D.R.	Syria	Colombia	Peru		
Lebanon	Tanzania	Costa Rica	Philippines		
Liberia	Togo	Croatia	Portugal		
Madagascar	Uzbekistan	Cyprus	Romania		
Malawi	Venezuela	Dominican Republic	Rwanda		
Mali	Vietnam	El Salvador	Serbia		
		Georgia	South Africa		
		Ghana	Spain		
		Greece	Sri Lanka		
		Guatemala	Suriname		
		Honduras	Thailand		
		India	Tunisia		
		Indonesia	Turkey		
		Israel	Uganda		
		Italy	Uruguay		
			Zambia		

Source: Briguglio 2014

2.2 Recent economic and social performance

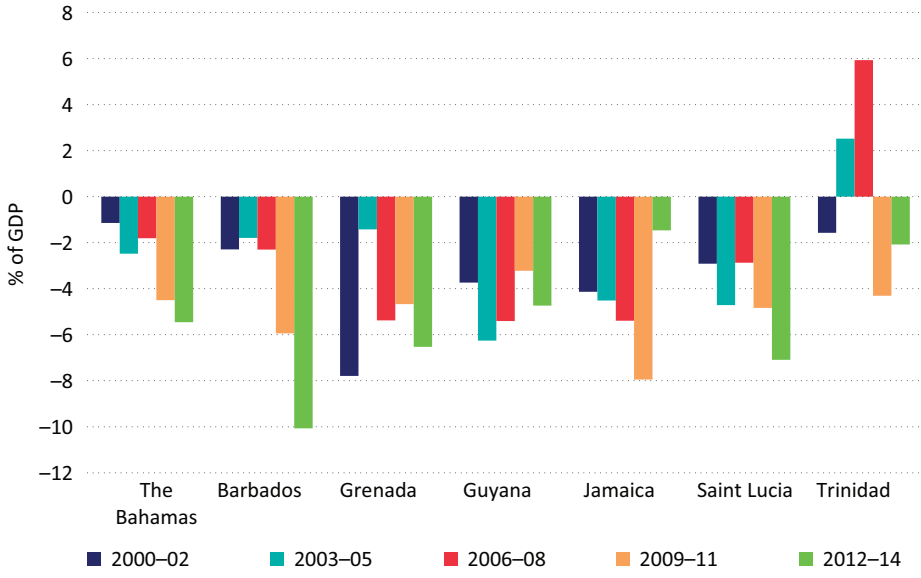
The Caribbean region has been hit by a number of crises in recent years, from natural to financial and those stemming from demographic societal change. Although efforts have been made to create systems to provide emergency support – such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF) instituted in 2007 – regional governments are still forced to bear the brunt of the impact. Since its establishment, 12 member countries have been affected by natural disasters that triggered a disbursement from the CCRIF, and Saint Lucia and Grenada have been forced to seek financial support from the International Monetary Fund (IMF), partly to help recover from natural disasters.

Energy crises are also common in the region. The only significant producer of oil in the Caribbean is Trinidad and Tobago. All other countries are net importers of fuel, and the cost of fuel is as high as 9 per cent of imports in some countries. The indirect impact is even greater, as most islands in the region import most of what they consume. In the mid- to late 2000s, international oil prices almost tripled from the average at the beginning of that decade, and the foreign reserves of many islands came under severe pressure. While the private sector in these countries was spared the brunt of the impact, since most governments subsidise fuel prices, the governments' accounts came under pressure once again. Many islands are working to reduce their vulnerability to movements in international oil prices by including alternative energy sources in their energy mix. Barbados is among the world's leaders in the use of solar energy, while Saint Lucia and Grenada are investigating the use of geothermal and wind energy.

During the 2000s and 2010s, governments have also faced shocks to the financial sector. In the late 2000s and early 2010s, two regional financial conglomerates, CL Financial Group and Stanford Financial Group, and one local bank, ABI Bank, failed. Trinidad and Tobago was home to the largest insurance company, the CL Financial Group, and by the end of 2008 the country was estimated to have CL assets worth US$2.9 billion (see IMF 2011). This entity operated throughout the Caribbean, and, while the exact financial impact on other affected countries is not known, it is clear that any funds these governments were forced to use to ameliorate the situation could not go towards development goals. These events compound the already challenging situation of an economic downturn and constrained fiscal earnings.

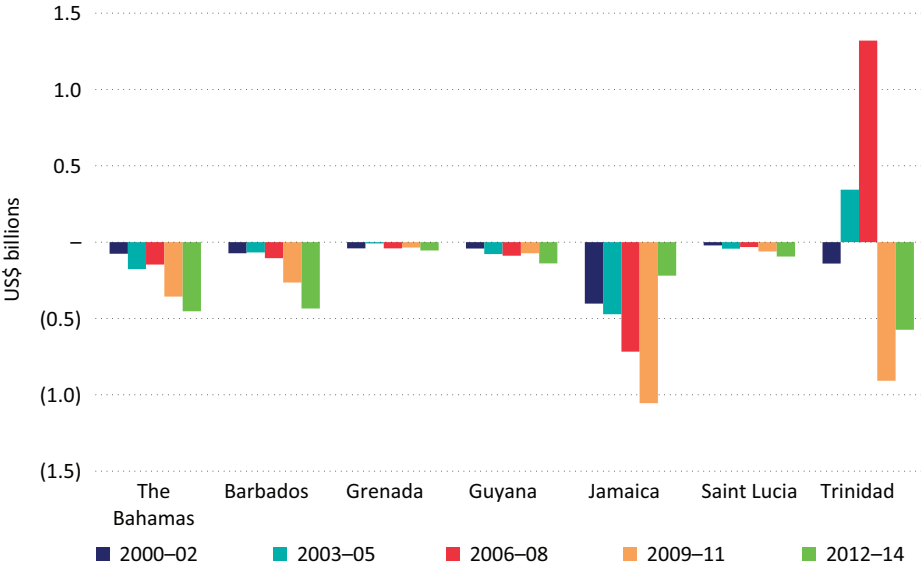
Apart from Trinidad and Tobago, which frequently records a fiscal surplus, the operations of Caribbean governments generally yield fiscal deficits. The trends in both the fiscal balance-to-GDP ratios and the absolute fiscal balance (see Figures 2.5 and 2.6) illustrate that the fiscal situation has been deteriorating. The years immediately following the global financial crisis were particularly challenging. The reduction in GDP has translated into lower revenue collections from the corporate sector and households, forcing governments to drastically cut their spending on both working capital and investment activities. Governments' capital spending has been particularly hard hit, which has been to the detriment of development projects. To compensate for the fall-off in revenue, governments have also been forced to borrow

Figure 2.5 Trends in general government net lending/borrowing (% of GDP), 2000–2014



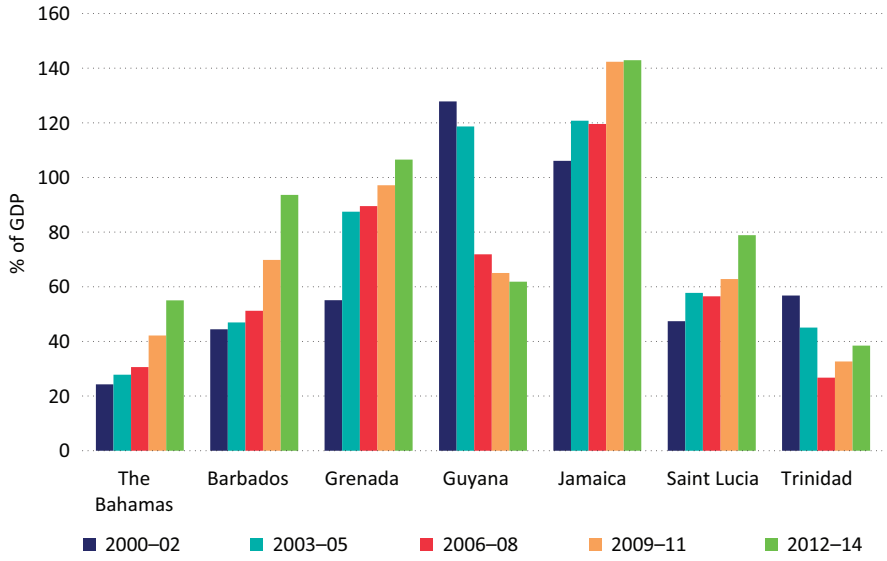
Source: IMF World Economic Outlook Database April 2015

Figure 2.6 Trends in general government net lending/borrowing (US$ billions), 2000–2014



Source: IMF World Economic Outlook Database April 2015

Figure 2.7 Trends in total debt-to-GDP ratios, 2000–2014



Source: IMF World Economic Outlook Database April 2015

at a faster rate. As shown in Figure 2.7, there was a sharp increase in total debt-to-GDP ratios between the 2006–08 and 2009–11 periods. With the exception of Guyana, which has been receiving debt forgiveness since the mid-2000s, the debt situation in most islands has worsened notably since the onset of the economic slump. Much of the additional debt has been aimed at assisting in the recovery from national disasters and addressing balance of payments and fiscal weaknesses. In other words, it has generally not been directed towards development projects.

The business community has been unable to pick up the slack. In recent years, a large proportion of Caribbean businesses have struggled to stay afloat in the face of lower demand from both tourists and the local population. Many have been forced to reduce their workforce or close operations altogether. Yet, even before the economic slump began, the business community would have been hard-pressed to support their country's development goals. Ahmed and Miller (2000) as well as Furceri and Sousa (2011) argue that Caribbean governments have crowded out the private sector, robbing them of any chance of playing a greater role in driving economic development. When you compare the size of the governments in the Caribbean, using their share of total value-added and total employment as a proxy, with private sector-led countries around the world, this suggests that the governments of the region may indeed be excessively large (Alleyne et al. 2004).

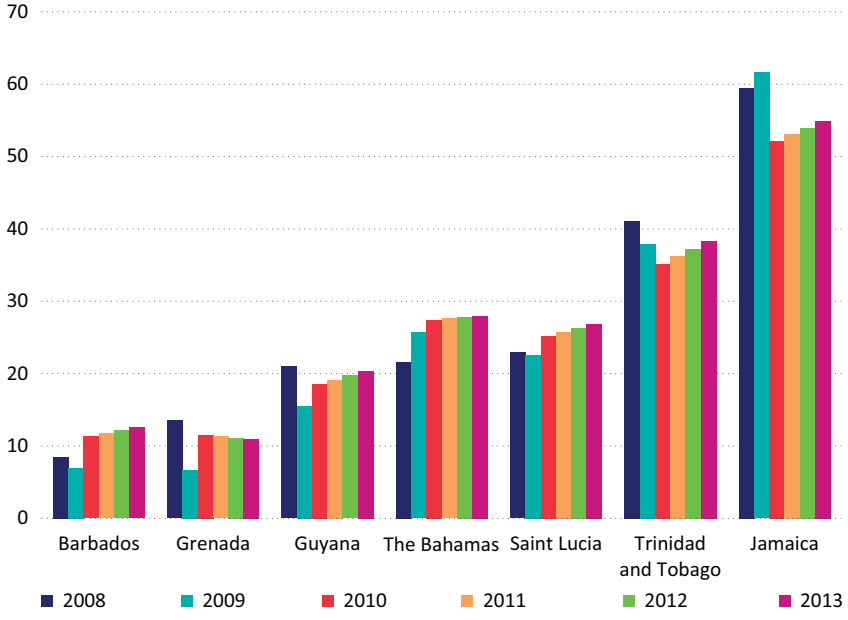
The Caribbean has been criticised for not being sufficiently innovative (Daude 2010). One of the causes of this situation may be the 'brain drain' being experienced (Mishra 2006). Mishra estimates that the Caribbean lost on average 10–40 per cent of its labour force from 1965 to 2000 to countries within the Organisation for Economic Co-operation and Development (OECD), with many countries having lost more than

70 per cent of their educated labour force. Further, Nurse and Jones (2009) showed that, in 2000, no country within the region had a tertiary education emigration rate to OECD countries of lower than 20 per cent. While emigration has always been a Caribbean concern – the Caribbean has one of the highest emigration rates in the world – it is only in recent years that its effect on overall development has been studied in depth.

It is difficult to pinpoint the economic cost of these events to society as a whole, and it is difficult to separate the impact on society of the economic slowdown, financial crises and natural disasters from the effects of a relatively weak private sector. However, it is clear that society has been affected. Crime rates, especially in the typically low-crime countries, have risen (see Figure 2.8). Only three countries in the sample have less than 20 homicides per year: Barbados, Grenada and Guyana, which was slightly above 20 in 2013. After falling in 2008 and 2009, crime in Trinidad and Tobago and in Jamaica is on the rise again.

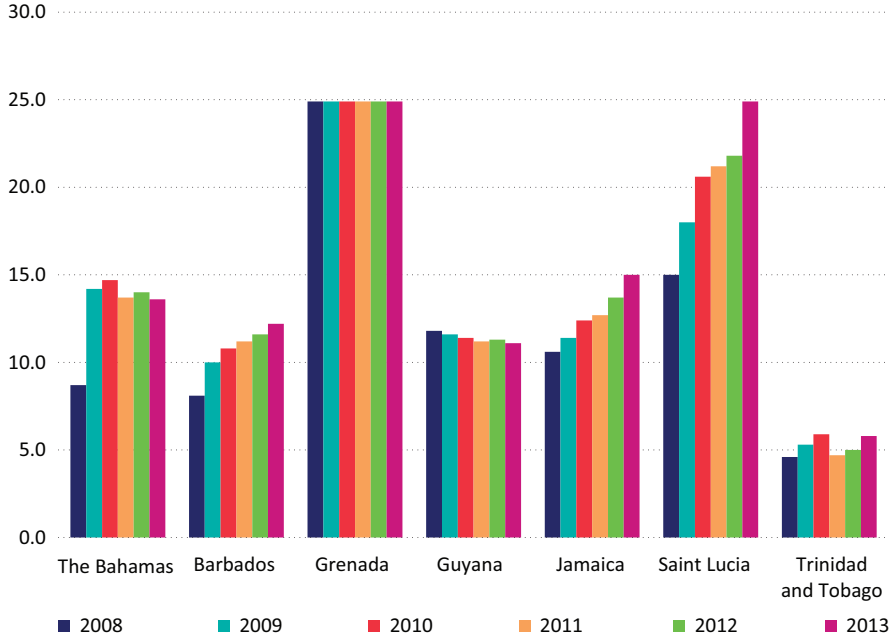
Along with this increase in the level of crime, unemployment rates within the region have also increased since 2010, with two countries (Saint Lucia and Grenada) reporting that one out of every four persons actively seeking employment is without a job. If one includes those people who have dropped out of the labour force, this number is even higher. Even those countries that made significant strides in improving employment opportunities in the 1990s and 2000s have experienced a significant rise in unemployment between 2005–2015. In 2008, Jamaica's unemployment rate hovered around 10 per cent, but by the end of 2013 the average rate of unemployment was just over 15 per cent. Similarly, Barbados, which began the period with a rate

Figure 2.8 Homicide rates, 2008–2013



Source: United Nations (UN) 2014

Figure 2.9 Unemployment rates, 2008–2013 (%)



Source: UN 2014

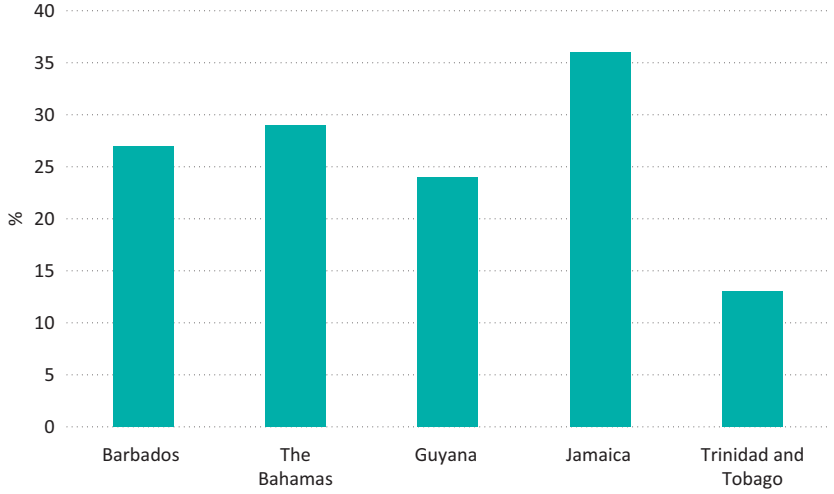
of unemployment below 10 per cent, saw the rate of unemployment increase to 12 per cent by the end of 2013. The only country to record a fall in unemployment was Guyana, where the rate of joblessness fell consistently over the period under review thanks to high commodity prices, foreign direct investment and expansion of private sector credit (IMF 2014).

While unemployment is a major problem, young people are at even greater risk of falling into the ranks of the unemployed (see Figure 2.9). Parra-Torrado (2014) notes that, in Barbados, Trinidad and Tobago, Jamaica and The Bahamas, youth unemployment is about 2.4 times higher than the total unemployment rate. In 2013, one in every three persons between the ages of 15 and 24 years in Jamaica was unemployed. In Barbados, The Bahamas and Guyana, one in every four young people was unemployed. Even in Trinidad and Tobago, where the ratio was lower than in the other countries, it was still twice the unemployment rate of the overall labour force (see Figure 2.10).

The slowdown in economic activity has negatively affected both households and businesses. Household consumption in most countries was below the level reported in 2008, while investment (as a proportion of GDP) is also lower (see Figure 2.11). In The Bahamas, Jamaica and Barbados, household consumption has declined by approximately US$1 billion, while in Grenada and Saint Lucia there has been no growth since 2008.

Similarly, investment as a share of GDP has almost halved in Grenada and Trinidad and Tobago, while Saint Lucia, Barbados and Jamaica have experienced significant

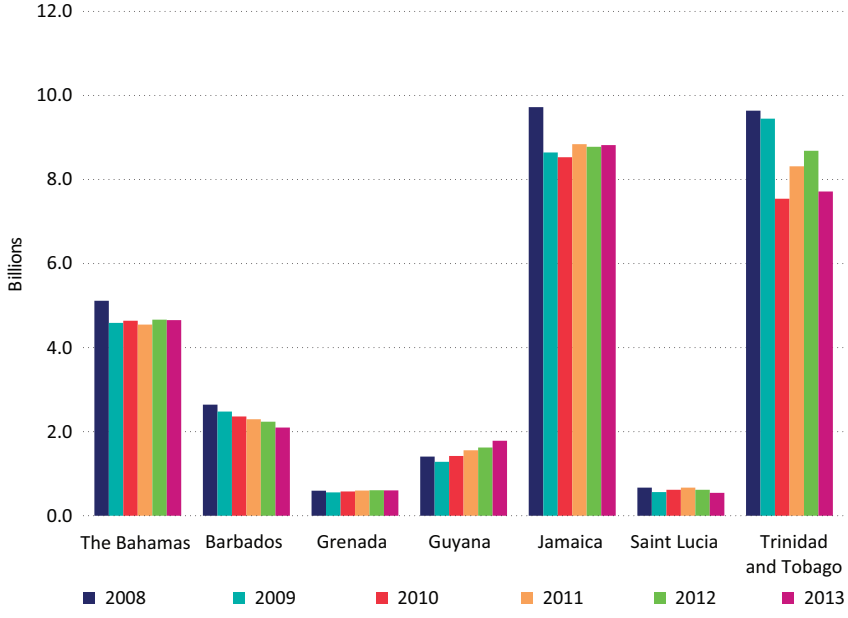
Figure 2.10 Youth unemployment in 2013 (% of total labour force 15–24 years)



Source: World Bank's World Development Indicators

declines. Obviously part of this contraction reflects the fiscal adjustments made by governments in the region to restore fiscal balance, but part of the contraction has also occurred due to a reduction in the rate of investment, owing to uncertainty in these countries. The next section examines the future prospects for the region given global trends.

Figure 2.11 Household consumption, 2008–2013 (US$)



Source: UN 2014

2.3 Global and emerging trends: threats or opportunities

2.3.1 Technological advances

Global economic, environmental, technological and social trends have served to indicate that, while the future may be uncertain, one inevitability is that there will be disruptions and discontinuities, some of which may have positive implications for the region, while others may test its resilience. The global financial and economic crisis that commenced in 2008, and the impacts of which were felt from 2009, is one such phenomenon. The previous review has highlighted the impact of global development on Caribbean economies. It is evidence of the interconnectedness of economies.

The single most significant feature of our time has been the pervasiveness of globalisation, facilitated by deregulation and technological advances that render economic systems almost borderless. This explains the types of financial products that have been developed and the rapidity of the transmission mechanisms that enabled a financial crisis commencing with the housing market collapse in the United States in 2008 to spread to Europe and the rest of the world and to precipitate an economic downturn, the effects of which are still evident.

In response to the crisis, regulations have been set in train. Global capital flows have declined in the aftermath of the crisis and a reversal of flows in Europe explains about 60 per cent of the decline. Foreign direct investment has declined to most countries. Emerging economies, which have been described as having relatively shallow financial depth, have nevertheless attracted capital and have increasingly provided loans and investments (Lund et al. 2013). Two future scenarios are possible. There may be a resurgence of domestic financial markets, which pose less systemic risks. Another scenario could be a re-set of the global financial markets, making them more sustainable (ibid.). Policy-makers are challenged to find the right balance in terms of how open their markets should be.

While globalisation has been occurring for many years, it has been accelerated by digitisation and communication technologies. Manyika et al. (2014) estimate that flows of goods, services and finance totalled US$26 trillion, or 36 per cent of global GDP, in 2012 and could be doubled or tripled by 2025. An important finding from the perspective of this project is that, within each type of flow, 'knowledge-intensive ones are growing faster than the labour-intensive or capital-intensive variety'. The article also suggests that, while 'the last era of globalisation was driven largely by sourcing low-cost production, the next era will center on the rise of the global knowledge economy' (ibid., 3).

This finding should inform policies and strategies geared towards repositioning Caribbean economies for effective participation in the changing global economic environment. An interesting aspect is that digitisation and communications technologies have made it possible for persons to work together from remote locations and have provided a space for the sole operator or microenterprise to conduct business across borders.

A more profound impact of technological and communications advances is their role in the emergence of what is being termed the 'on-demand' economy. The latter refers

to the 'app-based' and 'cloud-based' solutions that link the demand and supply of services, almost with the touch of a button. These app-based models of matching jobs to workers have been adopted by a range of enterprises, for instance Handy, which supplies domestic workers, Uber and Lyft, which provide readily available taxi services, Appirio, the cloud-based services company that provides freelance coders on demand, Eden McCallum, which has a network of consultants, and Medicast, the app-based medical services provider (*The Economist* 2015). *The Economist* (2015) holds that the 'boom marks a striking new stage in a deeper transformation. Using the now ubiquitous platform of the smartphone to deliver labour services in a variety of new ways will challenge many of the fundamental assumptions of the twentieth-century capitalism, from the nature of the firm to the structure of careers'.

> The attractiveness of the on-demand services is: no need for offices; no full-time contract employees; the clever use of computers to repackage one set of people's needs into another set of people's tasks; and an ability to access spare time and spare cognitive capacity all across the world (*The Economist* 2015).

The disadvantages of this emerging trend are the lack of job security and the absence of social interaction afforded by the traditional work arrangements. It is an open question whether this trend will continue unimpeded to 2050, it might be slowed by the human requirement for social interaction, or it will redefine social interaction altogether.

Technological advances have been taking place at a rapid pace and revolutionising the ways in which societies and economies function. While we cannot say with certainty what new technologies will be operational in 2050, we are fairly certain the future will be one that is integrally linked to technology. These and other innovations/disruptions point to skill requirements that are knowledge based. Caribbean economies must of necessity be strategically positioned to participate in and benefit from the opportunities and the challenges.

Strategic positioning requires the region to be cognisant of the skills and competencies required for meaningful participation in the knowledge economy. There is need to recognise that a '21st century education is the bedrock of competitiveness – the engine, not simply an input, of the economy' (Partnership for 21st Century Skills 2008, 1). Engagement with the knowledge economy requires a combination of core education subjects with certain workplace competencies – identified as inter personal skills, intra personal skills and technological or ICT skills. Moreover, surveys of firms in the United States and the United Kingdom emphasise the importance placed by firms on these workplace competencies. In the United Kingdom, communications skills, learning ability, problem solving, teamwork and the capacity for self-management are more highly ranked than technical skills; while American firms also stress the importance of communications and intra personal skills (OECD 2001; Partnership for 21st Century Skills 2008). The knowledge economy also requires an emphasis on critical thinking, cognitive skills, creativity and entrepreneurial thinking. Emerging social trends include not only the change in the nature of work, but also shifting demographics, the tendency towards jobless growth and high youth unemployment (UNDESA 2007; UNDESA 2011; KPMG 2014). To the extent that Caribbean young

people, particularly boys, are considered to be at risk, this has the potential to destabilise society. Youth development is an area for priority attention in the Vision 2050 project.

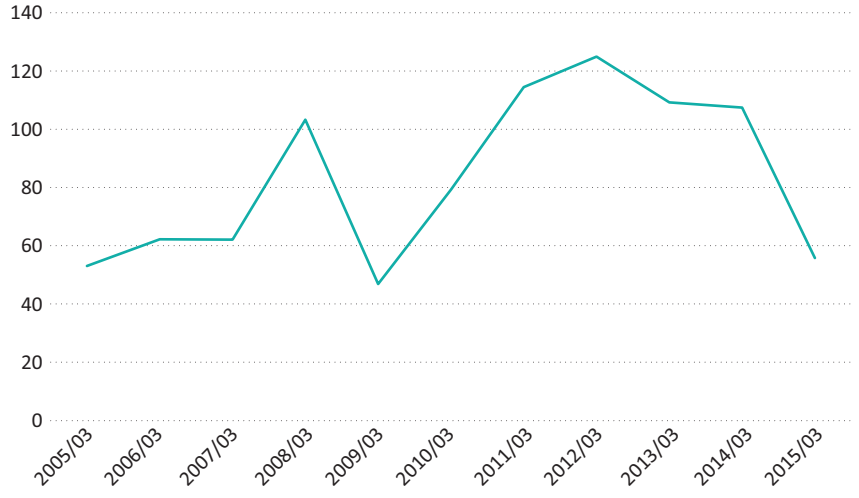
2.3.2 Food and oil volatility

There are opportunities in many of the key challenges facing the Caribbean. For example, the volatility of oil and food prices offers an incentive as well as an opportunity to strengthen food and energy security. Oil prices have shown volatility over an extended period, and are quite likely to continue in that trend into the future. Figure 2.12 illustrates a substantial price hike in 2008, resulting from supply factors linked to natural disasters and conflicts in supplier countries, as well as increased demand from emerging countries such as China and India. The dampening effect of the global crisis was evident by 2009. Subsequently prices rose again, but have fallen dramatically since, with the emergence of the United States as a significant producer of oil and gas, a feature that has influenced prices.

There are differing views concerning whether these low prices are sustainable, taking into consideration the relative costs of producing alternative forms of energy. Moreover, the World Bank has forecast that crude oil prices will rise in 2016 and should reach US$103.4 per barrel by 2025 in nominal terms and US$82.9 in real (2010) terms (Knoema 2015). The oil price volatility trends serve to support energy security as a vital component in planning for a resilient Caribbean.

Food price volatility has been triggered by the diversion of grains into the production of biofuels, as well as by extreme drought conditions in some regions. This raises food security concerns and points to the need for policies to buffer the region against over-dependence on imported foods.

Figure 2.12 Crude oil prices 31 March 2005 to 31 March 2015 (US$ per barrel)



Source: Constructed on data from Quandl, Brent crude oil price, available at: www.quandl.com/search?query=Brent%20crude%20oil%20price

2.3.3 Environmental issues

In areas of environmental health there have been many challenges, namely severe acute respiratory syndrome, avian flu and ebola. In addition, chikungunya virus, with its debilitating effects, has been one of the more serious health hazards that the Caribbean region has had to deal with. Moreover, the UN has warned that these health challenges are happening at an alarming rate of one per annum.

Other opportunities exist in exploiting the vast resources that surround Caribbean countries, namely the sea. Called the 'blue economy', the sectors covered include fisheries; tourism; shipping and port facilities; aquaculture; energy, including tidal, wave and wind, and oil; marine biotechnology products; and submarine mining. This is an area of relevance for Caribbean economies, some of which have ongoing initiatives for the management of marine resources and have long been dependent on the marine environment for fisheries, tourism and trade; yet they could still benefit from an increased emphasis on sustainable management of these marine resources.

Current threats to the Caribbean Sea have been identified as the unsustainable exploitation of fisheries resources, with 35 per cent of stocks being over exploited; pollutants in the form of oil hydrocarbons, sediments, pesticides, litter and marine debris, toxic wastes and sewage; poorly planned and regulated coastal development; sand mining; and the intensity of hurricanes and storm events. Concerted efforts are needed to diversify the economies of ocean states and increase the share in GDP of ocean sectors; assist in the creation of higher-value jobs; address the issue of food security; and support developing countries in the sustainable management of the marine environment. For the Caribbean to more fully exploit the potential of this vast resource, however, will require the honing of technical skills and data collection and research capabilities; the establishment of appropriate legal and institutional frameworks; and the strengthening of co-operation among countries (Roberts 2015).

Climate change issues are of growing concern given the regularity and intensity of global climatic and environmental disturbances, and are expected to have a disproportionate impact on island economies such as the Caribbean. In recent times, the world has experienced an intensifying of extreme weather patterns, namely extreme droughts and severe flooding, tsunamis, earthquakes and cyclones, which have led to the loss of lives, property, crops and environmental resources, as well as to adverse health impacts. Caribbean countries are vulnerable, as recent events have demonstrated in the case of Saint Lucia with the passing of Hurricane Tomas and the extreme floods that affected Dominica, Saint Lucia, and St Vincent and the Grenadines in December 2013.

The 2015 Global Assessment Report on Disaster Risk Reduction (GAR) (UNISDR 2015) focuses on the distinction between managing risk and managing disasters, inferring that disaster risk reduction requires managing the risks generated within the development process. Globally, economic losses are estimated at US$250 billion–US$300 billion. On the basis of a probabilistic assessment model, the GAR estimates that global annual average losses are US$314 billion, this representing the contingencies related to the built environment. The model is future focused, rather

than based on historical data – for it is argued that this would not go back far enough to be used as a predictor of future patterns.

The GAR suggests that the average annual loss (AAL) for SIDS represents 20 per cent of annual social expenditure and that these countries face the highest potential losses in relation to capital stock, investment and social expenditure. Based on this report, four Caribbean countries have AALs in excess of 100 per cent of social expenditure, with The Bahamas and Antigua and Barbuda having by far the highest ratio of AAL to social expenditure. Cayman Islands and Antigua and Barbuda have the highest AAL in relation to cyclone wind, while The Bahamas, Montserrat and Dominica have the highest potential risk with respect to storm surge. Trinidad and St Kitts and Nevis have the highest potential risk with regard to earthquakes (UNISDR 2015).

That report is not only useful in terms of highlighting the threat to the existing capital stock, but is also critical in pointing to the opportunity cost of managing risk. It demonstrates that critical investments in public goods could be negatively affected by the diversion of resources to disaster response. Moreover, it illustrates countries' individual lack of capacity to provide the resources for contingency planning.

Note

1 Inputs to this chapter were provided by Stacia Howard, Marsha Atherley-Ikechi, Anthony Clayton, Ryan Peterson, Tom Rogers, Denny Lewis-Bynoe and Alicia Matheson.

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Chapter 3

The Caribbean 2050: Cone of Possibilities

Winston Moore, Crystal Drakes and Stacia Howard[1]

3.1 Introduction

Long-term strategies appear to have slipped in priority in the face of short-term crises. While, in the past, Caribbean countries have been able to regroup after a setback and refocus on their long-term strategic goals, thus not affecting the generally positive trajectory, in recent years, with the protracted economic downturn, progress towards development goals appears to have plateaued.

A modelling exercise such as this one allows policy-makers and development planners the opportunity to investigate a number of issues. One of the most important questions that can be assessed is whether countries can still achieve their targets given current economic conditions and existing policies; or, put another way, what is the likely outcome of existing policies given current economic conditions? Furthermore, exercises such as this one allow policy-makers to construct scenarios to determine what actions would be needed today to ensure the development outcomes desired by 2050. This would also bring to the forefront the constraints that would need to be eliminated before progress towards the targets could take place. This is especially useful for development agencies operating in the region, as it would help them better direct financing. Finally, policy-makers could use these models to statistically investigate the trade-offs between financing one goal and another, as well as estimate the impact on the society at large and not just the economy.

The modelling framework used in this paper is analogous to the Global Policy Model outlined by Alphametrics Co. Ltd (2009). Similar to the Global Policy Model, it uses behavioural relationships, identities and ratios to trace historical developments, as well as simulate the potential future impacts of trends, shocks and various policy initiatives over the medium term (35 years, to 2050). The modelling framework is not aimed at providing short-term forecasts, but is instead a consistent, rigorously structured framework for thinking about the social, economic and environmental problems facing the Caribbean.

The model attempts to provide forecasts for each of the seven Caribbean countries covered in this project: The Bahamas, Barbados, Grenada, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago. Within individual country models, there are interactions between the various social, economic and environmental variables. Each macro-model also comprises a historical time series databank taken from international sources. To ensure comparability, the data is largely sourced from international databases.

The behavioural specification is homogeneous across the countries. Any structural differences between the countries are therefore captured within the model

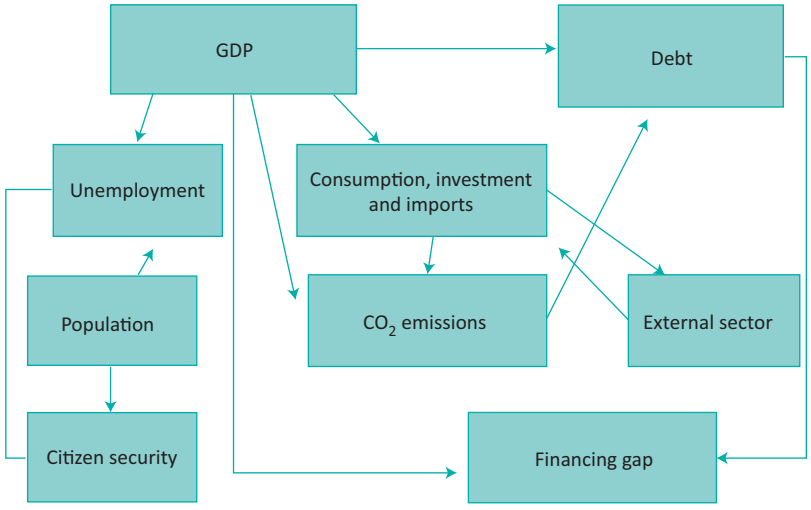
(coefficients and ratios) and not imposed by the model specification or approach employed. The relationships specified in the model are based on either econometric relationships or accounting identities. The model is closed through the financial sector, which also provides an estimate of the financing gap for the country and is of particular policy relevance for small developing states.

The forecasts provided in the study are 'plain' projections, as future residuals are assumed to be zero. Medium-term forecasts, such as those provided in this study, are subject to unexpected shocks, policy changes and other events that may push an economy away from its long-run growth path. The projections offered in this paper therefore assume that the economy/ies is/are not subject to major economic shocks over the forecast horizon. While this assumption might appear to be a bit strong, the scenarios are designed to assess various policy scenarios rather than accurately predict future economic trends in the short term.

Given that the policy variables considered in the model enter exogenously, it is also possible to consider what is needed to achieve a particular policy target (e.g. GDP per capita, unemployment or public sector debt). These targets can be achieved by either structural changes to the economy or policy innovations that are linked to the target variable. For example, one can achieve target CO_2 emissions by the introduction of a carbon tax, slower economic growth or reductions in the rate of carbon emissions per dollar of GDP. In addition, given that the model accounts for the structural differences and starting points for the various countries, one can assess the relative efficiency of a policy in various countries.

The policy modules shown in Figure 3.1 represent the domestic interactions of Caribbean small island states. Given the peculiarities of these economies, select indicators have been identified, with their structural relationships discussed below. For small economies, the amount of goods and services produced, gross domestic product (GDP), is vital to increasing and/or maintaining the standard of living of a

Figure 3.1 Policy model modules and interactions



country. GDP is, as shown in Figure 3.1, the central indicator having an influence on all other indicators in the policy model.

GDP is connected to consumption through a series of relationships; GDP is an estimate of the level of income within a country, which partly determines the salaries and wages of a labour force. The level of salaries and wages consequently influences disposable income, which in turn affects consumption patterns. Since many small islands are net importers, the level of consumption therefore is a driver of the amount of imported goods and services. The level of GDP also affects foreign and domestic investment. The level of foreign investment is dependent on the enabling business environment (tax incentives, competitive factors, etc.) and the potential of return on investment. Domestic investments are stimulated by profits and the rate of savings. National consumption comprises public and private consumption, and in small economies public expenditure is usually the largest component of consumption and a contributor to GDP.

The level of production of goods and services also has environmental consequences, with a positive relationship between economic activity and energy consumption (fuel imports), resulting in CO_2 emissions. To curtail the negative effects of CO_2 emissions, the government could encourage cleaner production and operational practices by the implementation of 'green' policies such as tax rebates on eco-friendly equipment and the introduction of carbon taxes on operations that produce high levels of greenhouse gases.

In the model it is assumed that demographic factors also interact and affects GDP. The optimal mix of labour and capital is necessary for the profit maximisation of productive activities. The quality of a labour force in a small island affects not only the quantity of goods and services it is able to produce, but the capacity to create high-value-added products and services. Therefore, variables such as population growth, rate of urbanisation and the literacy rate affect the employability of the labour force. Inversely, the level of economic capacity, in relation to areas of growth, also influences labour market participation, where new areas of growth can result in new jobs. The model also assumes a relationship between employment and crime. It is hypothesised that the level and distribution of income (GDP per capita) are correlated with citizen security and crime rates.

GDP in small island states is a major indicator of a country's ability to manage its debt. This relationship is also illustrated in the policy model. Indicators such as debt-to-GDP ratio and debt-service ratio are gauges used by international lenders and development organisations to measure the health of a country's economy. The relationship between GDP and debt is summarised in the model by the financing gap module. GDP levels are an indication of a country's revenue receipts and foreign exchange reserves, while a country's level of debt (internal and external) indicates its debt service payment obligations along with assigned interest rates. The difference between these two variable sets is the financing gap, a country's ability to pay its debts. The financing gap is important because of the relationship between financing and fiscal policy and, to a lesser extent in the Caribbean, monetary policy. The amount of leverage a country has with its revenue receipts and debt payments influences fiscal policy, direct and indirect taxation, and public expenditure. This interdependent

relationship is therefore important to public policy and the government's ability to provide social goods and services.

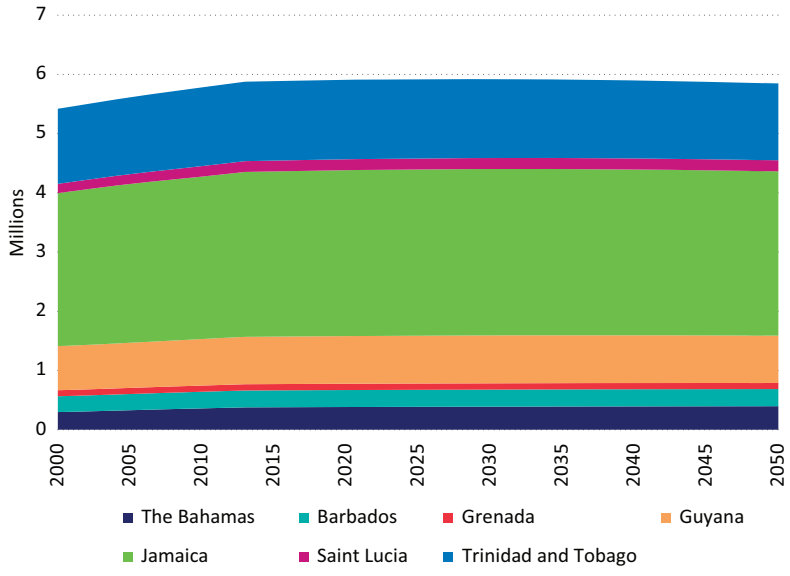
3.2 Policy scenarios

3.2.1 Baseline scenario

The first group of scenarios, baseline scenarios, assume that the policy path is in line with historical experience. Overall, Caribbean population growth rates in the baseline scenario become stagnant over the next three decades, as shown in Figure 3.2. Trinidad and Tobago, Saint Lucia and Jamaica follow a similar trend, peaking before 2020 and levelling off in future decades. These projections are consistent with those from the UN (2014), where the average annual growth rate between 2045 and 2050 is just 0.27 per cent. The stagnation of population growth in the future is mainly due to significant declines in the fertility rate, increased contraception use and high levels of education. Greater proportions of older persons within the population are also expected as a result of falling fertility rates and increasing life expectancy (ECLAC 2013; Yeboah 2002). The following scenarios are based on historical data trends and are projected using 'business-as-usual' growth rates.

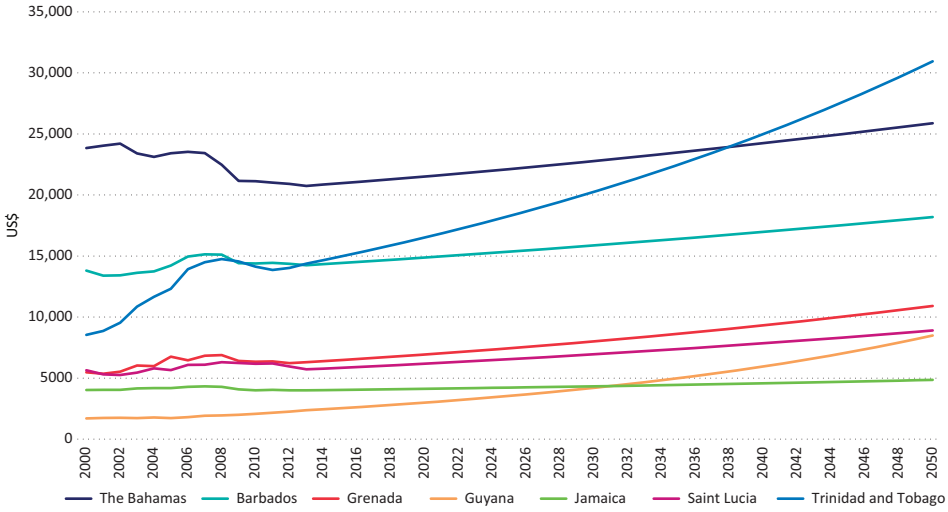
With the exception of the islands of Trinidad and Tobago and Guyana, real GDP per capita for the Caribbean is expected to rise only marginally in most countries. GDP per capita in Trinidad and Tobago is expected to more than double by 2050, reaching more than US$30,000 (see Figure 3.3). This persistent rise in consumption is predicted to be driven by continued investment and development of the gas and oil industry, with the assumption that world oil prices continue their historical upward

Figure 3.2 Population projections for selected Caribbean countries



Source: Authors' projections

Figure 3.3 Real GDP per capita projections for selected Caribbean countries



Source: Authors' projections

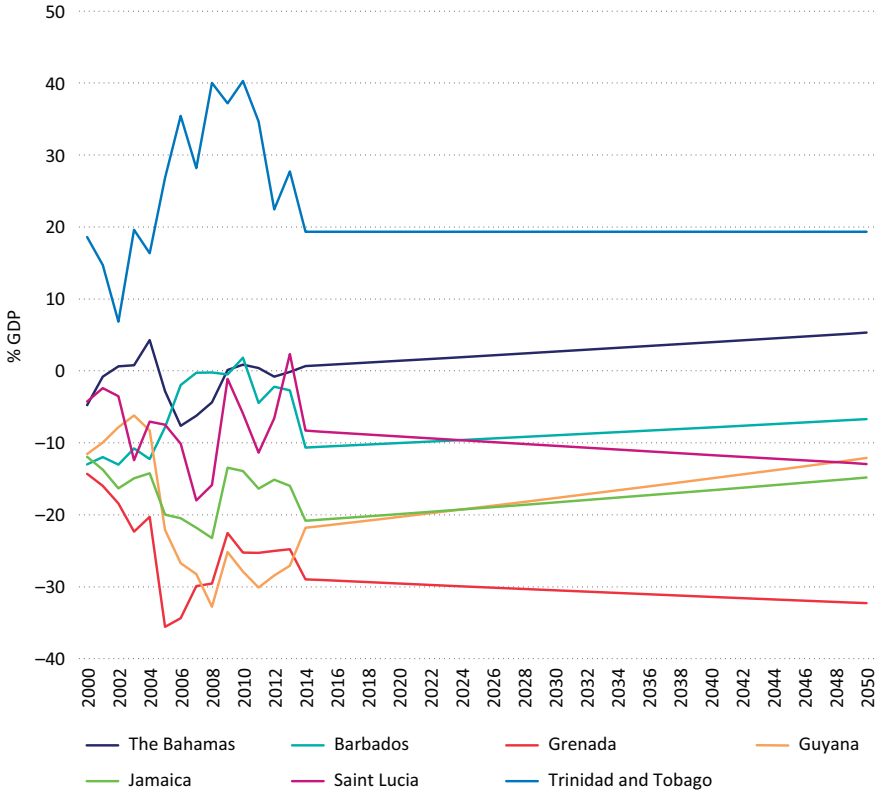
trajectory. The natural endowment of oil reserves is a major source of income to the twin-island state, and explorations for oil, particularly in deep water, are likely in the future (Russell and Bududass 2012).

Recent favourable global conditions have favourably affected growth in Guyana. Real economic activity expanded thanks to stronger performances in the services, gold, diamond, rice and alcoholic beverages industries, reflecting favourable prices and increased investments (Bank of Guyana 2013). In the baseline model, Guyana has the highest average propensity to consume, of 0.81, with the exception of Grenada, which has the same propensity. It is assumed the relatively high growth rate in Guyana (3.5 per cent) in 2005–2015 will continue and have a positive impact on household income and consumption. Real GDP per capita in the other islands is not expected to record any significant growth, mainly because of low or falling rates of growth in real economic activity owing to low rates of productivity growth.

In general, the projections for the external account suggest there are two main clusters of country groups (See Figure 3.4). One cluster, The Bahamas and Trinidad and Tobago, are likely to experience some improvement in their external position, and may obtain some surpluses on their external account. The other country cluster, by contrast, are expected to have negative external current account balances, particularly those countries in the Organisation of Eastern Caribbean States, given the declining market for traditional commodity exports (Addy 2000).

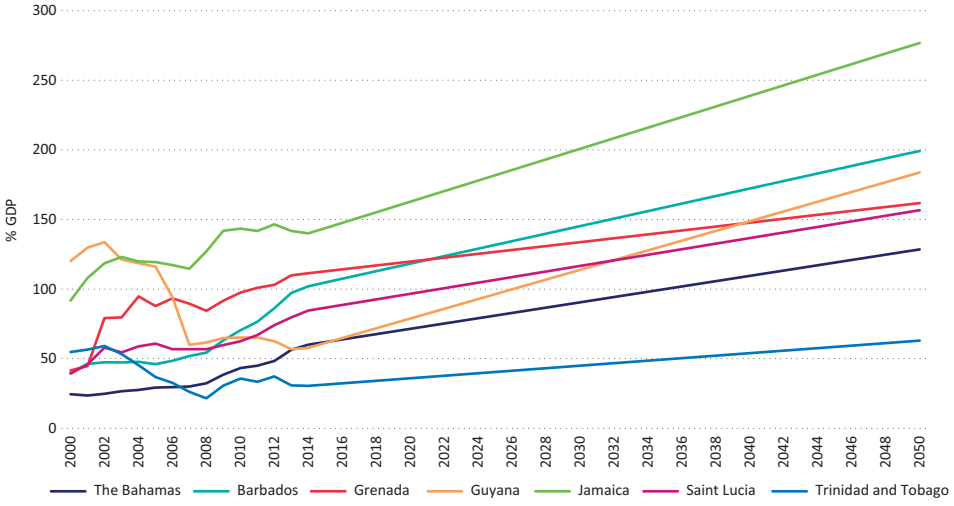
In all the islands, debt as a percentage of GDP is expected to rise (see Figure 3.5) as a result of structural weaknesses in their fiscal accounts. Following historical trends, Jamaica is forecast to have the highest levels of debt – reaching almost 260 per cent of GDP. The island is currently one of the most indebted countries in the world, with extremely high debt-servicing costs due to high effective interest rates (Johnston and Montecino 2011). Trinidad and Tobago's debt as a percentage of GDP, in contrast,

Figure 3.4 External current account projections for selected Caribbean countries (% of GDP)



Source: Authors' projections

Figure 3.5 Debt projections for selected Caribbean countries (% of GDP)



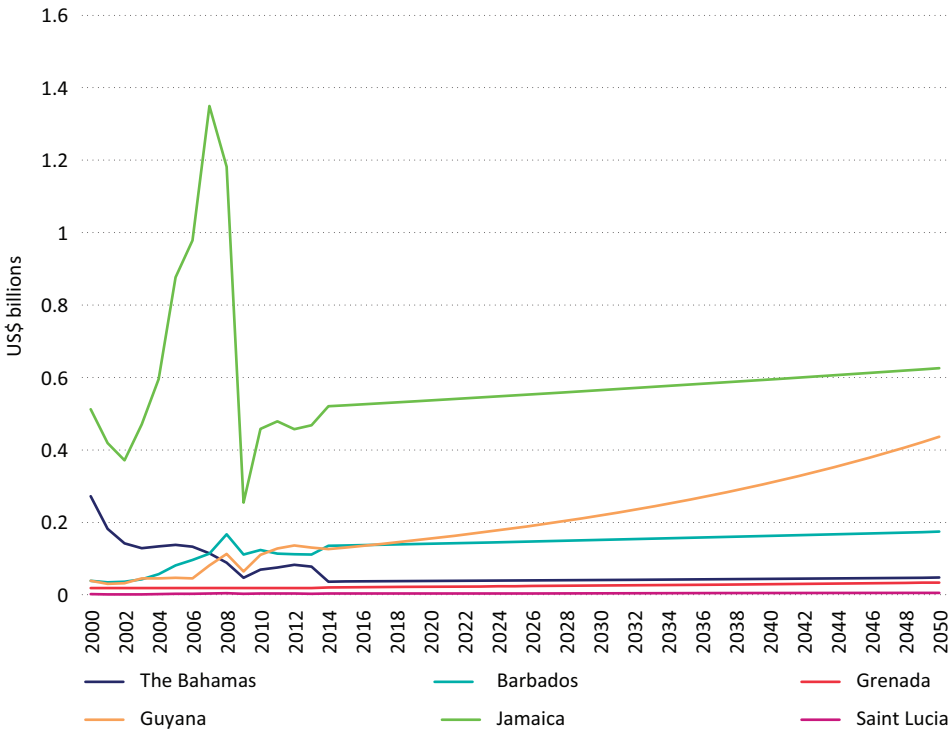
Source: Authors' projections

will only increase by 7 per cent. This relatively slow rate of growth in debt is due to projected revenues from the oil and gas industry. To date, Trinidad and Tobago is the only Caribbean island with the ability to run concurrent fiscal surpluses. Barbados's debt increases steadily after 2015 to 200 per cent of GDP by 2050, owing to high expenditures relative to its ability to collect revenues. The Bahamas, Guyana, Grenada and Saint Lucia are also projected to have greater debt ratios, ranging from 128 per cent to 185 per cent of GDP.

In the baseline energy scenario (see Figure 3.6), fuel costs are expected to rise in line with historical trends, ranging between US$174 million and US$33 million. Guyana and Jamaica are expected to have the highest annual fuel costs by 2050, reaching US$436 million and $625 million respectively. In addition, Guyana is expected to have the highest rate of increase in fuel oil, with a 67 per cent expansion in fuel costs being incurred between 2035 and 2050. Within all of these countries, the cost of energy is a major hindrance to firm profitability and the cost of doing business.

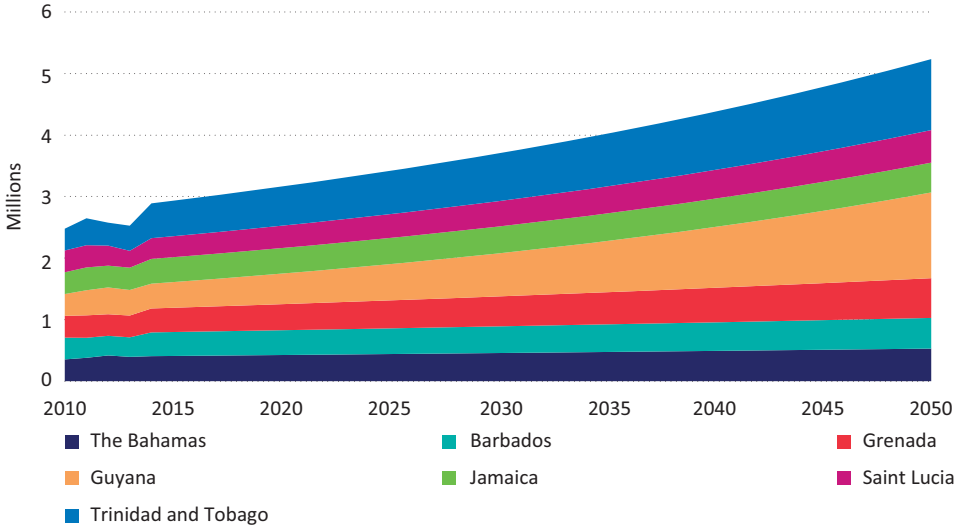
CO_2 emissions for most Caribbean countries are expected to rise in line with economic activity (see Figure 3.7). As expected, Trinidad and Tobago will be one of the main countries responsible for CO_2 emissions owing to its dependence on the oil and gas industry. In addition to Trinidad and Tobago, the relatively fast rate of growth forecast in Guyana is also likely to result in increased CO_2 emissions, rivalling

Figure 3.6 Energy cost for selected Caribbean countries



Source: Authors' projections

Figure 3.7 Projected CO_2 emissions for selected Caribbean countries

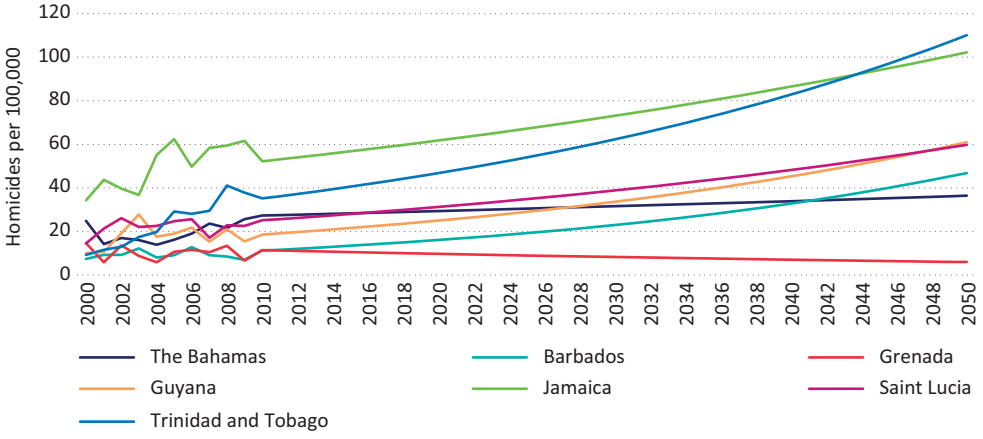


Source: Authors' projections

those of Trinidad and Tobago. Most of the other countries are expected to have some growth in emissions, but these will be a small share of total Caribbean output of CO_2 emissions, because of technological efficiencies and slow growth. Although projected CO_2 emissions for the selected countries exhibit overall growth in the future, small island developing states such as those in the Caribbean contribute a minuscule amount of less than 1 per cent to global emissions (Climate and Development Knowledge Network 2010).

Crime is one of the more serious developmental challenges facing the Caribbean. Figure 3.8 suggests that the baseline projection would see the number of homicides

Figure 3.8 Projected crime rates for selected Caribbean countries



Source: Authors' projections

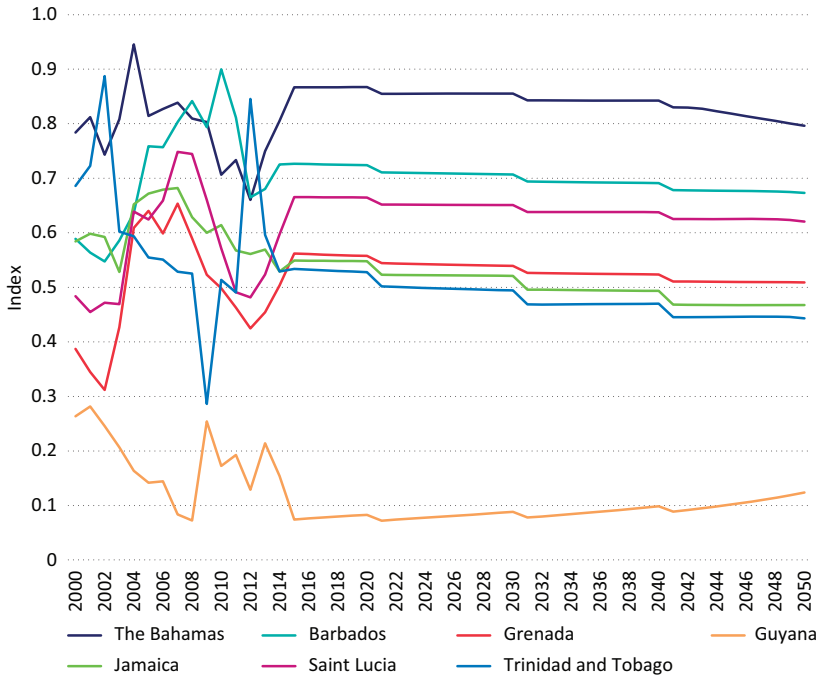
per 100,000 persons going over 100 by 2050, based on current trends, for Jamaica and Trinidad and Tobago. While comparatively lower, the other Caribbean countries would also see some growth in rates of crime, with most of the other countries expected to have homicides per 100,000 persons of between 30 and 60 persons per year by 2050. In the relatively small islands of the Caribbean, such a rise in the homicide rate would probably affect productivity, tourism and the social fabric of society.

Based on the socio-economic projections highlighted above, the resilience of most Caribbean countries is likely to fall over the period under analysis. Figure 3.9 provides the baseline projections for the resilience index put forward by Briguglio et al. (2008) and is based on the indices of macro-economic stability, micro-economic efficiency, governance and social development. Most countries are expected to experience a reduction in the resilience index, particularly Jamaica because of debt, governance and social development challenges, while Trinidad and Tobago would experience a decline in governance. This decline implies that small states in the Caribbean would probably be more susceptible to external shocks and experience a somewhat longer period before they return to normal growth paths following shocks.

3.2.2 Baseline scenario with further negative shocks

The following section outlines a worst-case scenario where further negative shocks are experienced in select policy variables. The first scenario considers the case of a 2 per cent fall in productivity over the period under investigation. These shocks

Figure 3.9 Projected resilience index for selected Caribbean countries

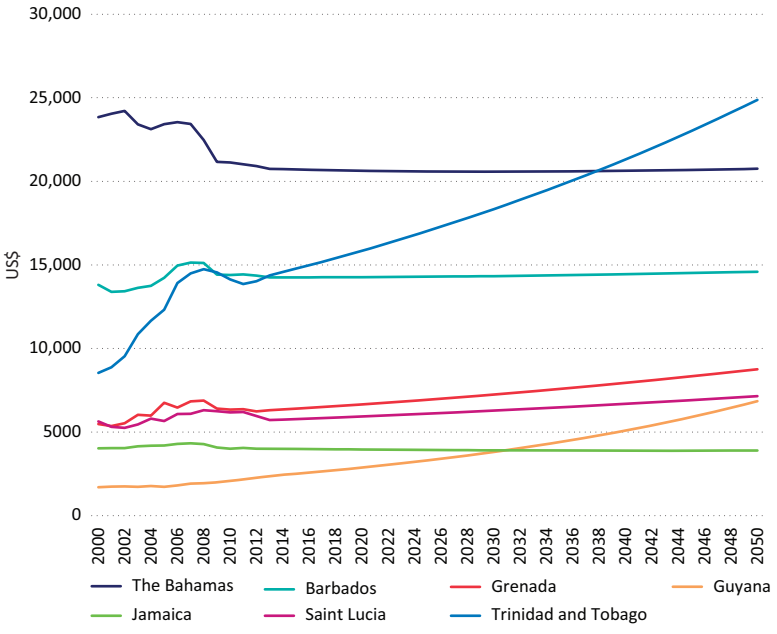


Source: Authors' projections

could occur from the myriad of natural disasters that have affected the region in the past (e.g. hurricanes, earthquakes, floods, to name a few). In the scenario, reduced productivity results in a contraction in real GDP per capita levels in all countries except Trinidad and Tobago. Debt levels are exacerbated by both reduced productivity and falling tax collection, with Jamaica's debt ratio climbing to 350 per cent of GDP and all other countries, except Trinidad and Tobago, reaching debt levels above 200 per cent of GDP. Therefore it is projected that six out of the seven selected countries will have higher debt levels than Greece, which reported a debt-to-GDP ratio of 174 per cent in 2014 (IMF 2015). Increased oil prices are also expected to have a negative impact, particularly in Jamaica and Guyana. Oil prices largely feed through the real and external sectors of the model, with the rise in fuel imports reducing GDP and leading to a deterioration in the external current account. Figure 3.10 illustrates the effects of a further 2 per cent reduction in productivity, relative to the baseline, across the selected countries. In all of the countries, with the exception of Trinidad and Tobago as well as Guyana, a reduction in real GDP per capita occurs in the long run. The islands of Grenada, Saint Lucia, Guyana and Jamaica are projected to experience a fall in real GDP per capita levels to below US$10,000. If it is compounded by an exogenous shock (e.g. a natural disaster), these countries face the risk of being downgraded to low-income economies.

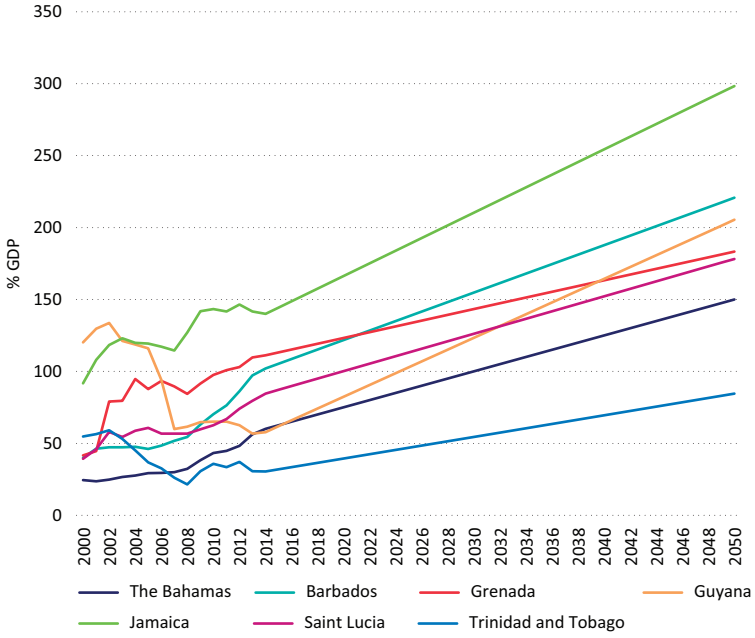
Significant increases in debt levels are projected to occur in the worst-case scenario (see Figure 3.11). In 2050, the selected countries are expected to experience debt levels of 150 per cent to 200 per cent of GDP, excluding Jamaica and Trinidad and Tobago.

Figure 3.10 Projected real GDP per capita for selected Caribbean countries (with 2% fall in productivity)



Source: Authors' projections

Figure 3.11 Projected debt (% of GDP) for selected Caribbean countries (with 2% fall in productivity)



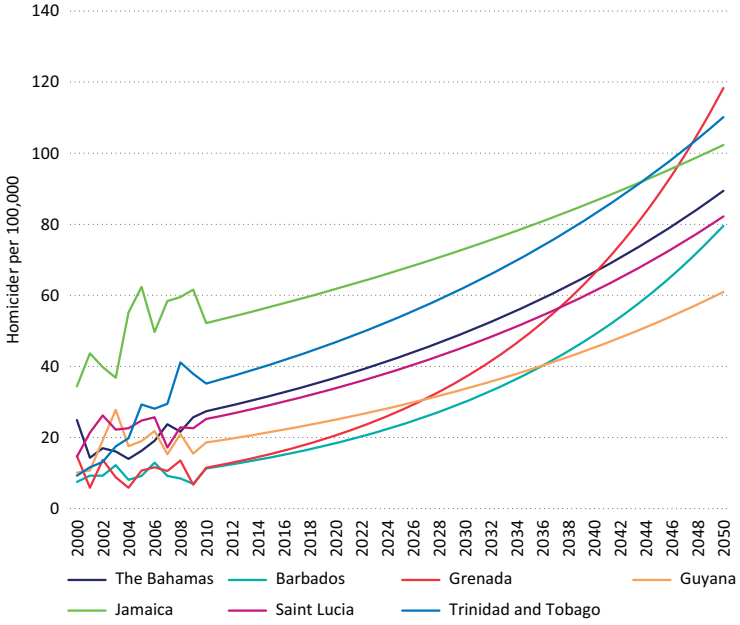
Source: Authors' projections

Jamaica's prolonged debt challenges are exacerbated by the fall in productivity, rising to almost 300 per cent of GDP. Only Trinidad and Tobago would maintain a debt-to-GDP ratio below 100 per cent over the forecast horizon.

Another scenario considered the case of a convergence in homicides rates due to the worsening economic situation, the increased size of the underground economy (drug trafficking) and greater youth unemployment. In this case, homicide rates in the relatively small islands of the Eastern Caribbean would reach levels similar to those experienced in the larger territories of Trinidad and Tobago and Guyana (see Figure 3.12). Such high rates of crime in the relatively small islands of the Caribbean would have significant spillover effects on tourism and society in general.

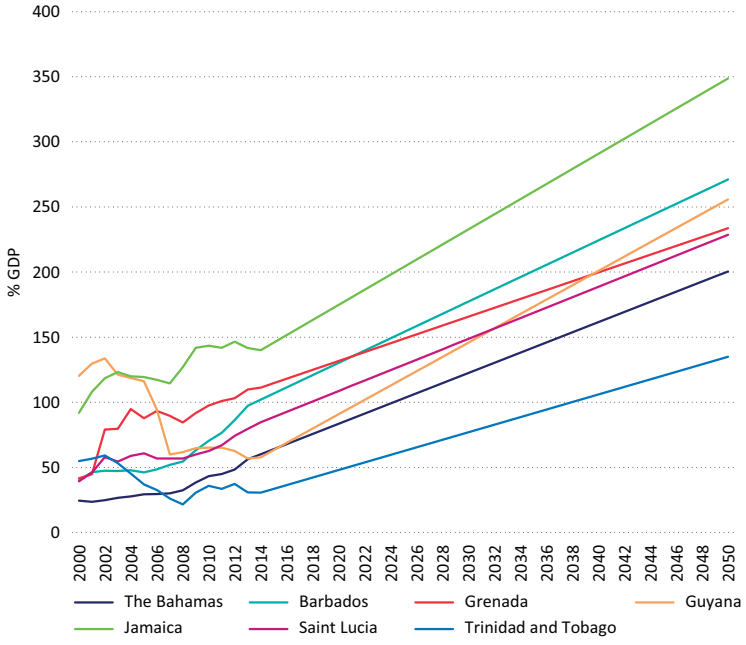
In relation to the fiscal position of the region, one of the trends observed within recent years has been a fall in tax revenue. In another worst case, the study considered the scenario of a further reduction in tax collections due to inefficiencies in tax collection procedures (weak institutions) and the overall decline in economic activity. Figure 3.13 illustrates the impact of falling tax collection on debt. These results are very similar to the impact on debt provided earlier as a result of falling rates of productivity (Figure 3.11). However, reduced tax collection has a greater negative effect on debt levels due to the direct impact of reduced revenue on government financing. Jamaica's debt in the long run is projected to reach 350 per cent of GDP, with the other countries, with the exception of Trinidad and Tobago, clustering between 200 per cent and 250 per cent of GDP.

Figure 3.12 Crime rates for selected Caribbean countries (convergence in rates of homicides)



Source: Authors' projections

Figure 3.13 Projected debt (% of GDP) for selected Caribbean countries (falling rates of tax collection)



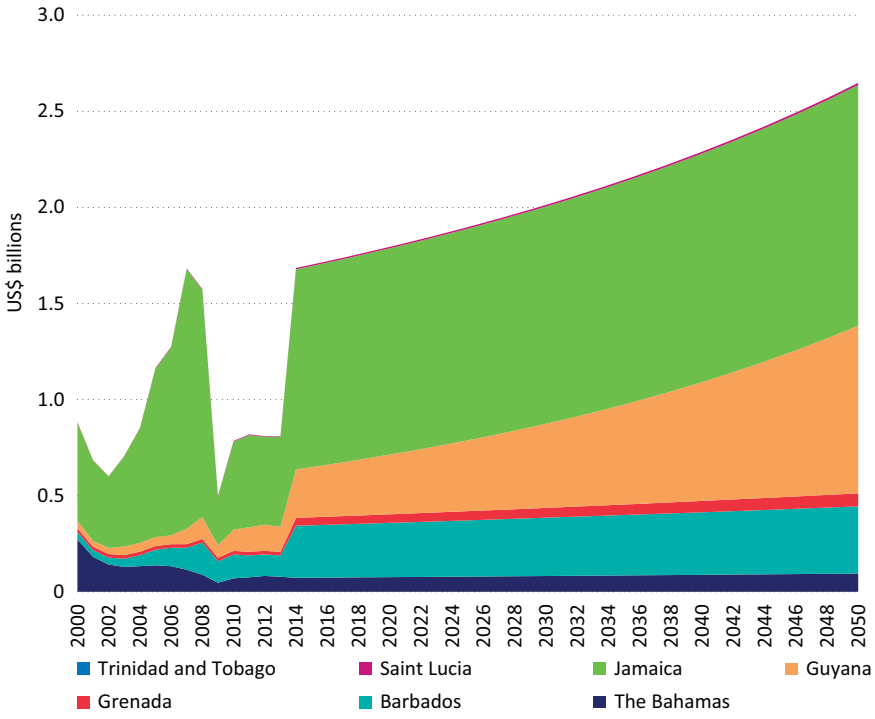
Source: Authors' projections

In the worst-case scenario it is assumed global oil prices double, with the impact on fuel costs for the selected Caribbean countries provided in Figure 3.14. While all the countries will experience a rise in fuel imports, Jamaica and Guyana have the largest increases in fuel costs, estimated at US$1.2 billion and US$872 million respectively. These significant increases may be explained by the higher levels of industrial activities in both of these countries than in the other countries under investigation. The total cost of fuel imports for the six Caribbean countries is therefore expected to rise from under US$1 billion in 2010 to just over US$2.5 billion by 2050.

3.2.3 Projections with policy Interventions

Following the conceptual model presented earlier, the quantitative model is analysed by comparing the effect of specific policy interventions on the variable of interest relative to baseline scenario. This approach allows one to obtain an idea of the relative impact of the policy interventions on the variable of interest. From a planning perspective, such an approach would also be useful for comparing the relative efficacy of various policy interventions. The report considers policy interventions specifically targeted at achieving an increase in productivity, export performance, youth policy, fiscal reform and crime over the planning period up to 2050. While

Figure 3.14 Fuel costs for selected Caribbean countries (with doubling in energy prices)



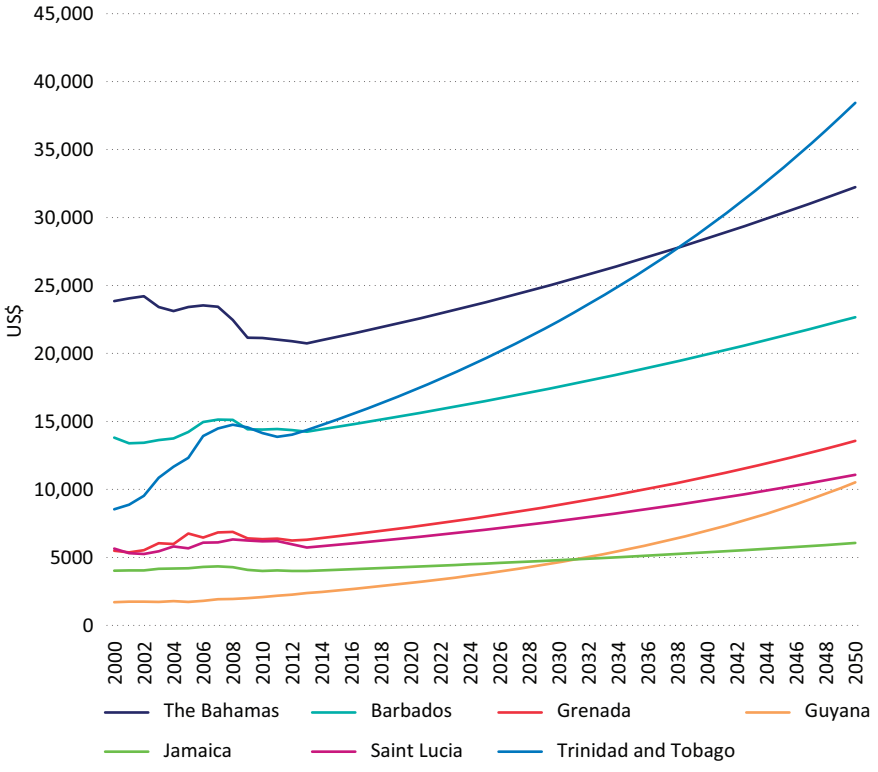
Source: Authors' projections

these interventions are modelled separately, it is easy to conceptualise the cumulative impact on regional sustainable development if some overlapping policy is pursued.

Given the macro-economic trends highlighted above, the priority for policy-makers going forward should be focused on enhancing growth and generating decent work opportunities. Much of the cross-country literature on economic growth finds that the bulk of long-run economic growth is driven by productivity (Easterly and Levine 2001). Within this cross-country growth literature, productivity or TFP includes the growth-enhancing effects of technological innovations, externalities and the adoption of lower-cost production techniques. In more developed countries, the growth-enhancing effects of productivity account for more than 50 per cent of overall economic growth, and in some instances an even higher proportion, while in developing countries about 30 per cent of all growth can be attributed to productivity.

In the case of productivity, it is assumed that the policy interventions discussed in the sector reports can lead to a sustained growth in productivity of about 2 per cent per year. Figure 3.15 suggests that, if one can increase productivity in these Caribbean states, growth will accelerate in all countries. There are likely to be two

Figure 3.15 Projected GDP per capita (US$) in selected Caribbean countries (with 2% growth in productivity)



Source: Authors' projections

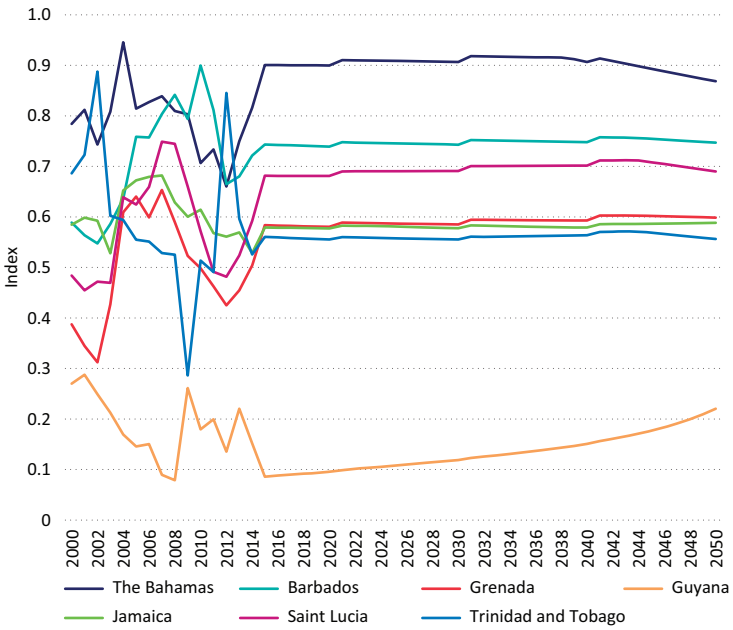
countries that could benefit significantly in this scenario: Trinidad and Tobago and Guyana. In this scenario, Trinidad and Tobago would overtake The Bahamas by 2040 in real GDP per capita terms, while Guyana would move from last to overtake both Jamaica and Saint Lucia.

The growth in productivity would also have a positive impact on resilience in the region. By 2050, the majority of the countries in the sample would be on their way to building resilience (see Figure 3.16). Most countries would exceed their peak resilience index score. The only country that would still be in the bottom half of the resilience scores would be Guyana, indicating that stronger productivity growth and social interventions would be needed to boost resilience and achieve convergence with the other small states in the region.

The projected growth in economic activity is also likely to positively impact on other key macro-economic variables. In this scenario, the debt ratios in most countries would fall relative to the baseline scenario; however, most countries would still breach the 100 per cent of GDP threshold by 2050 (see Figure 3.17). This finding suggests that greater growth alone would not be enough to address the debt challenges facing the region by 2050.

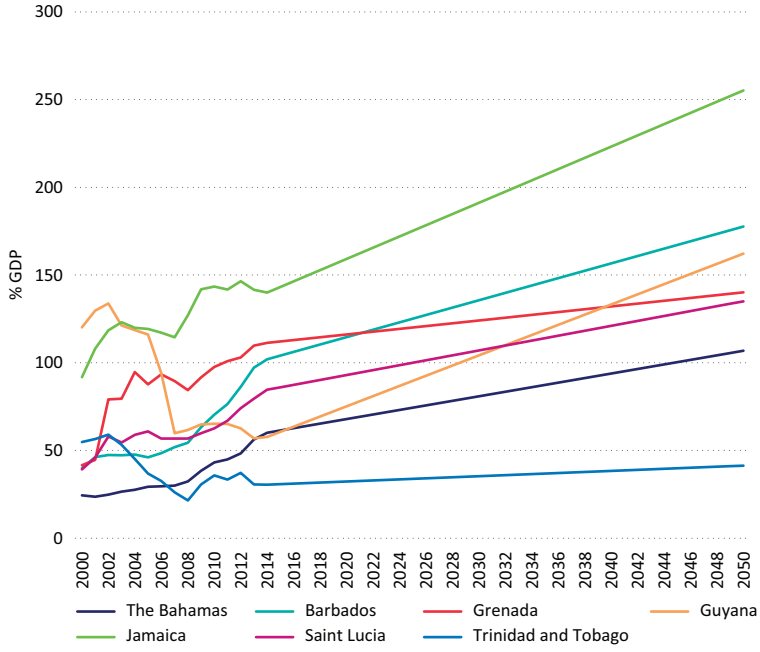
Another strategic objective considered in the report are policies aimed at increasing export growth in the Caribbean. As the macro-economic background section discussed, export growth in most Caribbean countries has been deteriorating as a result of declining competitiveness and slow growth in target markets. The export growth scenario targets export growth of 2 per cent per annum over the forecast

Figure 3.16 Projected resilience index in selected Caribbean countries (with 2% growth in productivity)



Source: Authors' projections

Figure 3.17 Projected debt in selected Caribbean countries (% of GDP; with 2% growth in productivity)



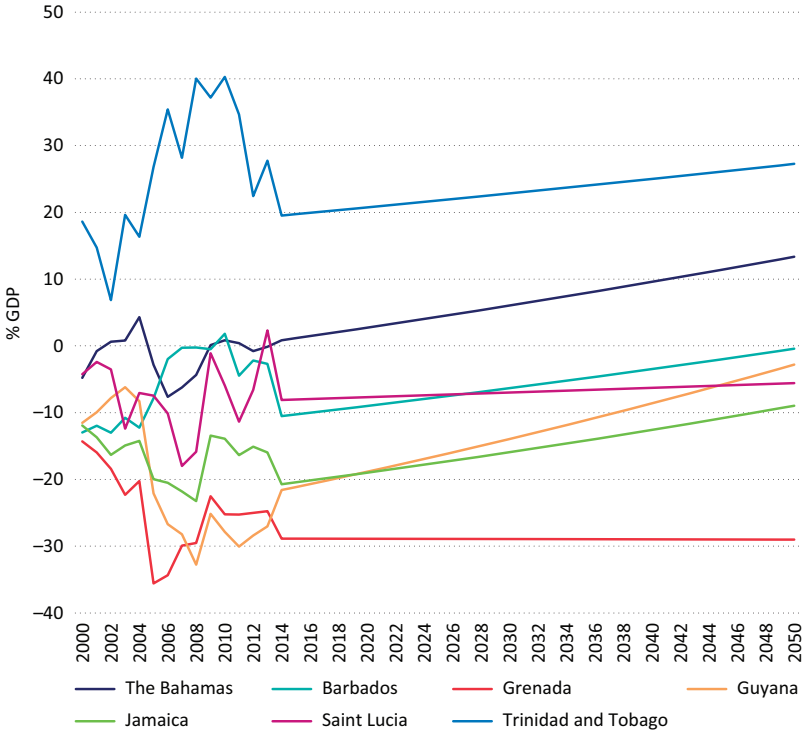
Source: Authors' projections

horizon. The impact on GDP growth is, as expected, positive. In contrast to the productivity scenario, however, the cumulative impact on GDP is somewhat smaller because of the additional imported inputs that would be needed to support this growth in exports. Therefore, while a 2 per cent annual growth in productivity enhances the standard of living by 20 per cent by 2050, a similar increase in export growth leads to a 10 per cent rise in the standard of living.

Nevertheless, the upturn in exports is also likely to have a positive impact on the external current account, as well as the level of debt. In addition, the rise in income from exports will have indirect impacts on taxation and expenditure levels. As a result, debt levels in the Caribbean are likely to improve somewhat, but are not significantly different from the growth scenario considered earlier. Similarly, the external current account improves in all countries (see Figure 3.18). Three out of the seven countries under review would move their external current account balance into surplus should this targeted export growth rate be achieved. Trinidad and Tobago, as well as The Bahamas, which start from a better position, would be relatively better off.

The comparatively high level of youth unemployment in the Caribbean has been a persistent and troubling problem. In addition to reducing the size of the labour force qualified to take advantage of emerging opportunities, there is also an intimate link between youth unemployment and crime (Moser and Van Bronkhorst 1999).

Figure 3.18 External current account in selected Caribbean countries (% of GDP; with 2% growth in exports)



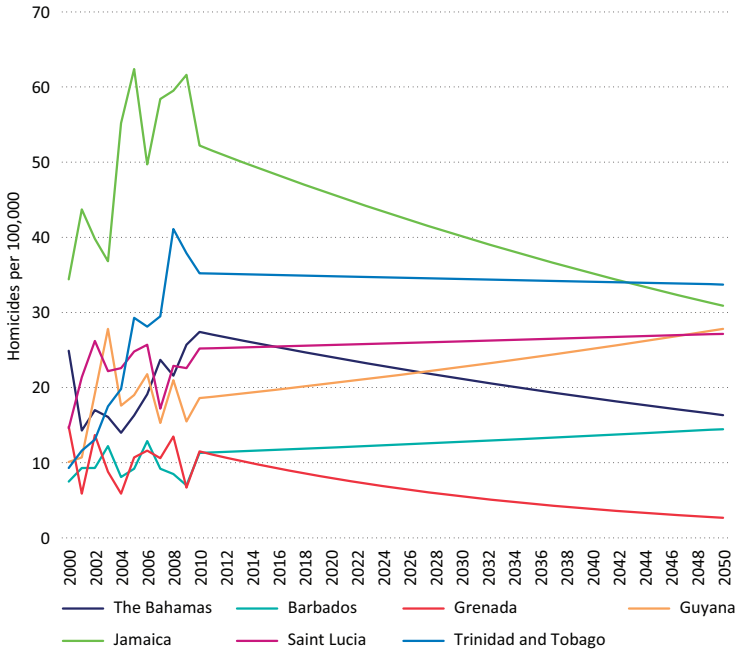
Source: Authors' projections

The policies aimed at tackling youth unemployment in this report would therefore have potential benefits in relation to crime. Enabling youth increases the labour participation rate and possibly decreases the expenditure of the state. The rationale behind these interactions is, if given more opportunities, young people will take advantage of these and rely less on public services, reducing government expenditure.

The model projections indicate also that higher levels of employment among the youth will lead to a decrease in the crime rate. Figure 3.19 suggests that all countries experience a decrease in crime when policies are targeted towards youth engagement. The relatively small deviation reported for Grenada is largely due to the relatively low base for violent crimes in this country. As a result, the homicide rate in most Caribbean countries converges to 30 homicides per 100,000 persons or lower. For most countries, this is still above their historical average and indicates that youth policy alone would not be enough to bring down the rate of violent crime. In addition, there would be a small stimulant effect on growth, owing to the reduced cost of doing business and increased availability of labour.

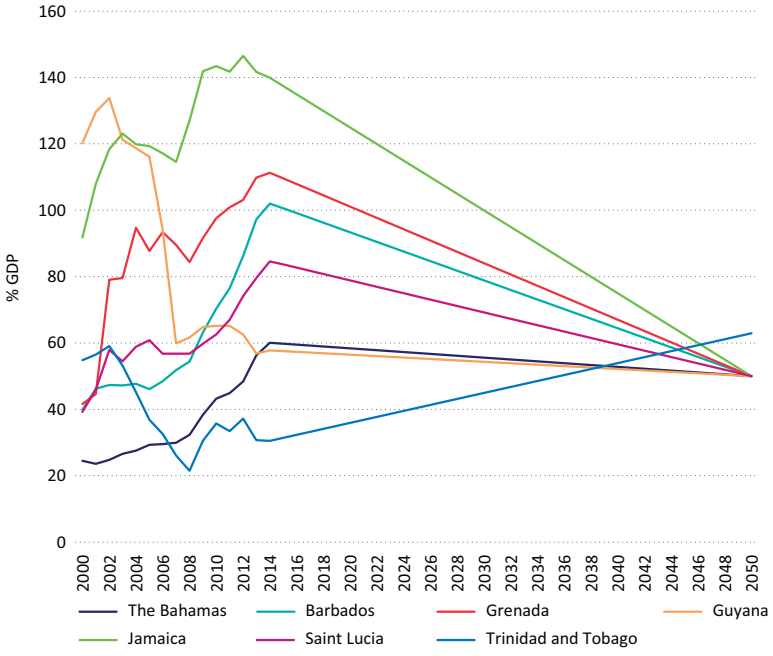
The next policy intervention considered relates to fiscal reform. The debt statistics provided earlier in this report indicate that there are underlying structural weaknesses in the fiscal system of most Caribbean countries (see Figure 3.20). During periods

Figure 3.19 Crime in the Caribbean and youth policy



Source: Authors' projections

Figure 3.20 Fiscal policy rules and debt

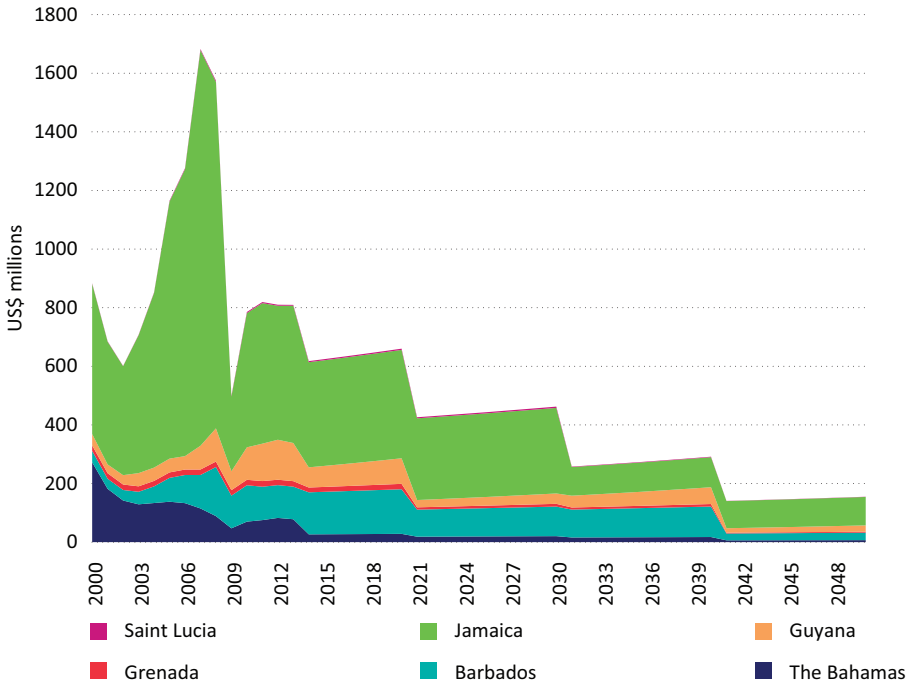


Source: Authors' projections

of growth, these weaknesses are masked, but the recent global recession exposed the weaknesses and resulted in a significant jump in the debt levels of most countries. Given the difficulty of raising revenue, it is thought that most of this adjustment was made on the expenditure side. It was assumed that countries would implement a fiscal rule that limits government expenditure to some given percentage of GDP, to achieve a debt-to-GDP ratio of 60 per cent or lower by 2050. The required expenditure targets vary in each country given the efficiency of revenue collection: 13 per cent in The Bahamas and Grenada, 26 per cent in Barbados, Guyana, Saint Lucia and Trinidad and Tobago and 23 per cent in Jamaica. If these expenditure rules are implemented, debt-to-GDP targets could be reached without significant increases in tax revenues.

Policy interventions aimed at increasing renewable energy to curb the projected high-energy costs and promote green economies are assumed within the model. In an effort to reduce the dependence on fuel oil in the selected countries, two energy scenarios are assumed: a probable scenario and a possible scenario. A probable energy scenario is assumed in the model with a target of reducing fuel cost by 19 per cent of current costs by 2050 (see Figure 3.21). This reduction in costs is assumed to lead to reductions in the propensity to import fuel, as well as to reduce overall import levels. In the model, the decline in fuel cost also leads to an increase in growth in the long run.

Figure 3.21 Projected energy costs in selected Caribbean countries (probable scenario)



Source: Authors' projections

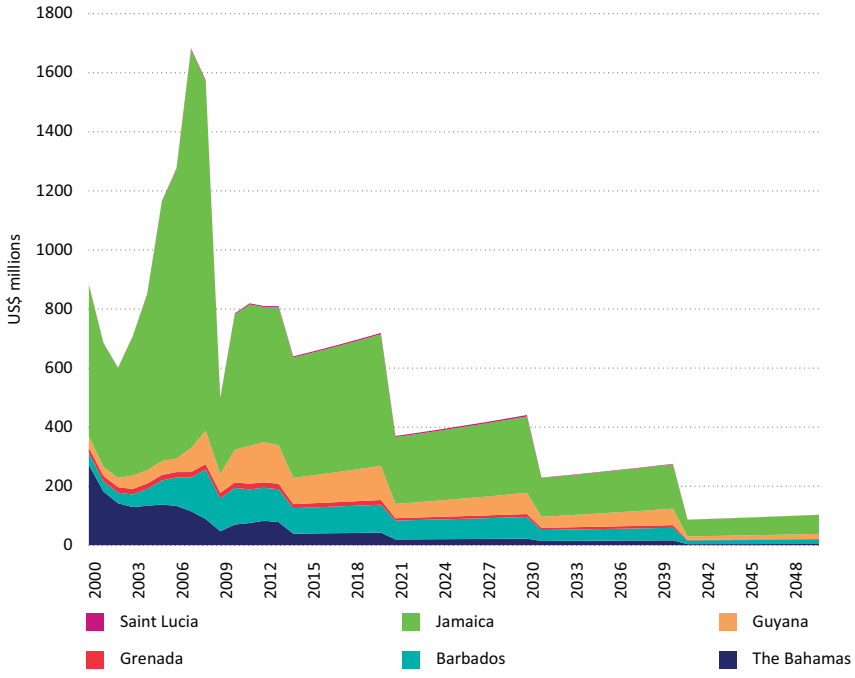
The possible energy scenario is the ideal scenario where fuel costs are reduced to 11 per cent of current levels by 2050 (see Figure 3.22). Like the probable scenario, the vision scenario projects reductions in the propensity to import and reduced overall import levels. Higher levels of growth are projected for all countries in this scenario than in the probable scenario, as higher gains are expected with the further reduction in energy costs. In both scenarios, costs are reduced proportionally to each decade; this may be attributed to the high cost to transition from fuel oil to renewable energy in the beginning and the savings from the transition being actualised over the long run.

3.2.4 Financing for development

The above model is closed through the financial sector. The difference between the monetary liabilities generated by the economic scenario and the public sector funding requirement, as well as private sector credit demands, provides an estimate of the financing needs of the country. Figure 3.23 provides the baseline estimates of this financing gap. It should be noted that this is not an estimate of the initiatives that are implemented in the scenario, but simply an estimate of the finance needed to ensure consistency between the various sectors of the economy.

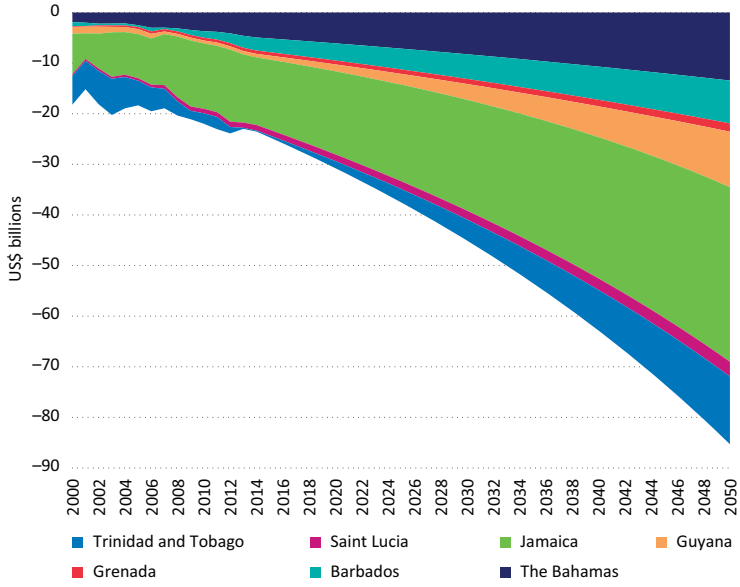
In the baseline scenario, the financing gap is estimated at US$20 billion at the beginning of the scenario, but then quickly rises to more than US$70 billion owing to the worsening fiscal position of most Caribbean countries in the baseline scenario.

Figure 3.22 Projected energy costs in selected Caribbean countries (possible scenario)



Source: Authors' projections

Figure 3.23 Baseline financing gap for the Caribbean



Source: Author's projections

Each scenario has different implications for the financing demands of countries over the forecast horizon. In the scenario targeting a 2 per cent growth in productivity, the financing gap reaches US$80 billion by 2050, as financing will be needed to support the additional growth projected in this scenario.

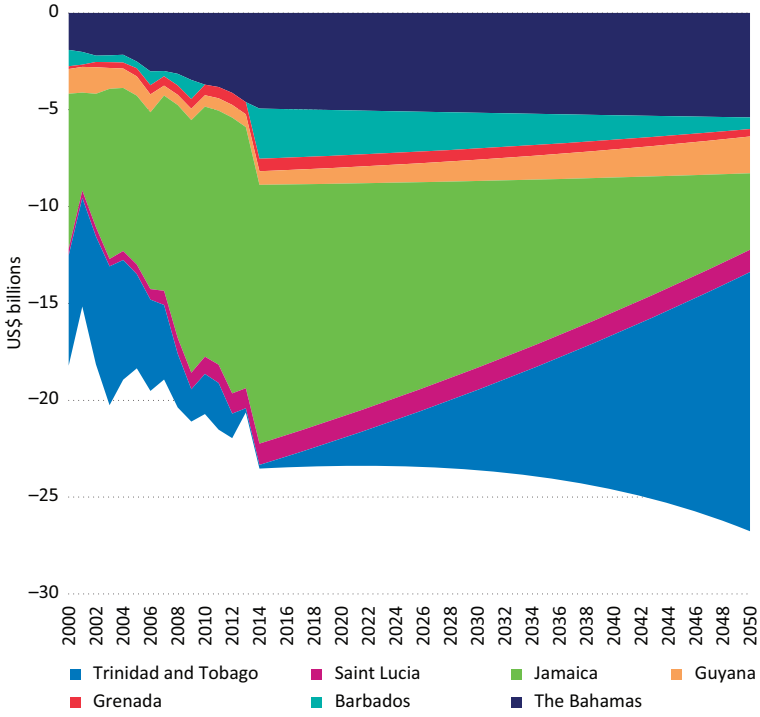
One way of closing this financing gap, however, is to reduce the size of the public sector borrowing requirement (see Figure 3.24). In the scenario with a fiscal rule and tax reform, the financing gap declines up to 2050, with most of this gap occurring because of unsatisfied credit demand from the private sector. In addition, the size of this financing gap would be significantly smaller – at less than US$15 billion by 2050.

3.3 Conclusion

The Caribbean has experienced significant growth in the standard of living in the post-independence era. Indeed, most of the countries considered in this study were ranked as having 'high human development' by the UNDP in 2013 (UNDP 2013). This performance has been largely driven by significant expansions in the level of economic activity, as well as standards of health and to some extent education. In most countries, the life expectancy at birth is among the highest in the world.

Despite these achievements, there are still some remaining challenges that the region needs to address. Economic growth in the Caribbean during most of the 2000s was modest and has deteriorated significantly since 2007 (the period of the great recession). The region is characterised by relatively high rates of unemployment (particularly among the youth), low rates of productivity, rising rates of crime, underlying fiscal weaknesses and a relatively weak export industry.

Figure 3.24 Financing gap with fiscal rules and tax reform for the Caribbean



Source: Author's projections

The modelling framework used in this paper employs behavioural relationships, identities and ratios to trace historical developments, as well as simulate the potential future impacts of trends, shocks and various policy initiatives over the medium term (35 years, to 2050). The modelling framework is not aimed at providing short-term forecasts, but provides a consistent, rigorously structured framework for thinking about the social, economic and environmental problems facing the Caribbean. The policy variables considered in the model enter exogenously, therefore making it possible to consider what is needed to achieve a particular policy target (e.g. GDP per capita, unemployment or public sector debt). These targets can be achieved either via structural changes to the economy or through policy innovations that are linked to the target variable.

The model is used to consider the effects of specific policy interventions on the variable of interest relative to baseline scenario. The report considers policy interventions specifically targeted at achieving an increase in productivity; improving export performance; youth policy; fiscal reform; and crime over the planning period up to 2050. While these interventions are modelled separately, it is easy to conceptualise the cumulative impact on regional sustainable development if some overlapping policy is pursued.

The results suggest that policies aimed at increasing productivity could garner significant economic benefits (in terms of GDP, debt and unemployment, to name

a few) while a policy intervention aimed at reducing the relatively high levels of unemployment among the region's youth could generate benefits in relation to reduced crime. While the policy interventions considered in this report were presented as separate policy interventions, it is expected that some integrated policy approach that captures all elements of the initiatives identified above could generate even greater benefits.

Note

1 Inputs to this chapter were provided by Marsha Atherley-Ikechi, Denny Lewis-Bynoe, Anthony Clayton, Alicia Matheson, Ryan Peterson and Tom Rogers.

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Chapter 4

The Road to 2050: the Caribbean We Want

Denny Lewis-Bynoe, Winston Moore, Sylvia Charles and Christine Clarke[1]

4.1 Introduction

The pathways presented in chapter 3 provide the Caribbean with a range of possible futures: a 'business-as-usual', a best-case and a worst-case scenario. The most compelling and appealing of the three clearly points to the implementation of strategies that will lead to the best-case scenario. Consistent with such a strategy is a vision for the Caribbean as peaceful, prosperous and inclusive; where its people are creative, enterprising and resilient, fully engaged in, and benefiting from, development within the framework of effective institutions that guarantee human rights and social justice.

More specifically, the Caribbean we want would need to be:

1. a creative and enterprising economy in which innovation is the driver;
2. one in which young people are fully integrated into national development;
3. a stable society where people are safe, secure and prosperous;
4. one in which environmental sustainability is mainstreamed into the development process;
5. a region built on clean, resilient energy systems that make use of plentiful, local, renewable resources, and is capable of providing stable supplies of energy to all sectors of society.

Moreover, the strategies should seek to balance the concerns of survivability today and sustainability tomorrow; address the need for improved region-wide data capture and analysis; and address the need for a truly transformational system of governance across the region.

4.2 Strategic framework for Vision 2050

In this chapter, we identify some key actions for achieving the Caribbean we want. These are further elaborated in the sector studies in section two of the book.

4.2.1 A creative and enterprising economy in which innovation is the driver

Caribbean economies have a history of depending on low-value-added products or ones in which the majority of the benefits are expatriated because of their ownership structure. To achieve creative and enterprising economies in which innovation is the

driver, the region will need to make substantive efforts in order to effect a transition from low-value-added economic activity to activities that are driven by local creativity and enterprise in the private as well as the public sectors. To increase TFP by 2 per cent per annum, we recommend developing human capital competencies for the knowledge economy. This can be achieved by implementing regional curriculum reform to build competencies in core and technology-based subjects, as well as problem-solving/analytical workplace skills and developing capability in research and development (R&D) and increasing ICT connectivity in the underserved areas of the region using access to global grant schemes.

Another desirable outcome for the region is to generate a 4 per cent average annual GDP per capita growth rate. In this regard, institutional strengthening, enhancing financing and marketing arrangements, and incubation for businesses will greatly aid achieving this objective. Finally, improving the enabling environment for greater private sector participation, by strengthening policy implementation, governance, accountability and transparency, is a minimum requirement for the transformation of these economies and the creation of economic opportunities region-wide.

4.2.2 Youth fully integrated into national development

The review of the socio-economic situation and global trends suggests the need for youth-specific interventions, as well as for initiatives designed to more closely align the region's human resources with the requirements of the twenty-first century. In order to achieve Vision 2050, young people must be viewed as the region's most valuable and creative asset, which needs to be developed with the mind-set that they are partners in the development of the region as we transition from the present situation to the future that we envision for 2050.

To ensure young people are fully integrated into national development and achieve the required increase in youth employment of 5 to 10 per cent per annum will require, among other things, stimulating creativity at the early childhood and primary school levels by re-engineering curricula and teaching modalities to respond to different intelligences and modalities. Other recommendations are to utilise talent management and workplace training to engender creativity and problem solving, aligned to private sector needs and improving youth employability through workplace skills. It would also be important to reinforce these policies by expanding/strengthening project-based entrepreneurship activities at the secondary level, instituting regional annual art and science fairs, investing in talent programmes and innovation skills, and providing incentives and awards to enterprising young people. Adopting this multisector approach to youth development will ensure that young people are fully integrated into national development

4.2.3 A stable society where people are safe, secure and prosperous

The safety, security and prosperity of the region are key elements in Vision 2050, reflecting the pre-eminence of these three characteristics in the attractiveness of the Caribbean as a destination for visitors and investors. With the commitment to

freedom of movement across the region, there is a need for a re-energised regional approach to the challenges that insecurity and depressed economic activity present to social cohesion. There is also a need to improve teacher and teaching standards and approaches across the region, to emphasise the development of innovation and technological educational opportunities, and to ensure equal access, regardless of gender or financial resources. A teacher rotation scheme, through which effective teachers support transformation across the region's most vulnerable and poorly performing schools, has the benefit of improving standards using recognised talent from within the region.

Meeting the requirements of the knowledge-based economy calls for a system-wide approach to human resource development. This requires a comprehensive assessment of the formal education system, post-secondary, informal education, workplace education and training programmes. Where appropriate, the curricula and programme content should be re-engineered to incorporate orientation in the following competencies, in addition to the core education subjects:

- problem solving;
- critical thinking;
- creativity and entrepreneurship;
- team building, leadership and self-management skills;
- ICT and technological skills.

Paramount to the achievement of social cohesion is the implementation of measures that effectively and holistically protect the vulnerable – specifically children, the elderly and the differently abled – who are disproportionately represented among the poor. The region needs to co-operate in developing an appropriate and sustainable social protection safety net. To ensure a stable society where people are safe, secure and prosperous, countries are encouraged to transform social services so that they operate at the community level and provide a closer link between services and potential beneficiaries.

Another important consideration is the reduction of intergenerational poverty, which can be tackled by reinvigorating and integrating plans for poverty reduction, settlement and development in order to improve implementation. Creating economic opportunities and tackling poverty in a more integrated manner has an added spillover impact on crime reduction. The analysis assumes a reduction in homicide rates to 4 to 5 per 100,000. Tackling the root causes is likely to yield greater results than addressing the symptoms. This reduction may also be facilitated by strengthening security capabilities, through enhanced regional monitoring, exchanges and policy frameworks, including sharing intelligence via databases and electronically within the Caribbean and with partners.

One issue of paramount importance to ensuring a stable society is building resilience to natural hazards, as this underpins all other aspects of developing a prosperous and secure society. The region as a whole is vulnerable to many disasters, and therefore a

co-operative effort to implement reductions in vulnerability and build resilience to natural disasters requires a collaborative approach – to build databases of vulnerability and to devise and implement strategies that take advantage of the globally available funds for these purposes. In addition, planning and building protocols need to be amended to prevent further shoreline development and losses.

4.2.4 Environmental sustainability mainstreamed into the development process

The natural environment is a major element of the attractiveness of the Caribbean in a variety of sectors and ways. Tourism in particular is heavily dependent on the various elements of the natural environment that give rise to the quality of water supplies, coral reefs, environmental aesthetics, and other goods and services. The region needs to co-operate in the development and sourcing of the financing for measures that advance the recommendations relating to adaptation to climate change, which will help to reduce the projected impact of climate change events on the region. Work has been done by the Economic Commission for Latin America and the Caribbean (ECLAC) to estimate the potential costs, which have proved to be substantial. The best option is therefore for collaborative efforts in handling the response to such a regional threat.

To ensure that environmental sustainability is mainstreamed, it is important to develop the blue and green economies: namely, developing plans to protect green and blue resources and leveraging the opportunities they present. A 10 per cent annual increase in value-added is possible from responsibly developed environmental products. The progression and implementation of regional projects that target globally available funds and which support adaptation and mitigation efforts would greatly assist these countries in mainstreaming environmental sustainability, by reducing vulnerability and improving resilience to natural disasters in the form of mitigation and adaptation to climate change.

4.2.5 A region built on clean, resilient energy systems that make use of plentiful, local renewable resources, and is capable of providing stable supplies of energy to all sectors of society

The Caribbean's overwhelming dependence on expensive fossil fuels is unsustainable from both economic and environmental standpoints. To transition to a viable and sustainable renewable energy sector, the region must act to enable national renewable energy regulations and legislation, establish national renewable energy and energy-efficiency policies, facilitate access to low-cost capital, and work to minimise locally induced impediments and risks to investors.

It is expected that wind and solar photovoltaic systems will outstrip the use of fossil fuels as the primary energy source by 2050, and that an imminent future scenario would be one in which there is a shift away from an unsustainable homogeneous energy source to a sustainable diverse energy mix that is indigenous to the region. In this context, energy diversification, conservation and management are three areas of critical importance to economic and natural environment issues across the region,

as most countries are net importers of oil. Specifically, there is a need to implement alternative energy generation options and to reform legal frameworks to ensure that excess energy generation is saleable on national grids. This will provide a unified policy environment.

In order to achieve the vision of a region built on clean and resilient energy systems, energy security and resilience through 100 per cent renewables by 2050 should be promoted. This can be achieved through cost-effective renewable energy production and would require the enactment of national energy regulation appropriate to fostering innovation and implementation of renewables, the establishment of national renewable energy and energy-efficiency policies, and the facilitation of access to low-cost capital for the implementation of renewable energy projects at the household and commercial levels. It would also be important to promote local investment and ownership of innovation in energy and to reduce impediments and risks to investors. Another important consideration to achieve clean and resilient energy systems would be to minimise environmental loss/footprints by developing systems to ensure that economic and social development do not increase environmental losses.

4.2.6 Regional approaches

When taken together, these elements could address some of the major challenges that are common to the region and that require regional efforts to solve. The framework offers strategies that will seek to balance the concerns of survivability today and sustainability tomorrow; recapture the potential of the young people across the Caribbean; renew and re-energise the focus on the need to secure the energy requirements of the region; and address the need for a truly transformational system of governance across the region, while strengthening systems that safeguard against corruption and ineffectiveness.

The regional approach recognises the important role that regional integration and co-operation can play in helping small states to address many of their key development challenges. The Caribbean has a long history of regional integration and co-operation. The region has long expounded the importance of its member countries working together in a unified manner, to ensure sustainable development and given the myriad of challenges they face. This collaboration acts, in contrast to a national approach, as a synergistic and effective way of overcoming the resource challenges of being small developing, externally dependent island economies.

4.3 Some considerations and requirements

4.3.1 Introduction

This section examines some important considerations for implementing the preferred future for the region. First, given the region's economic context, improving financial flows in support of achieving development goals will be paramount. Financing development has been particularly challenging for many small states, most of which have 'graduated' from concessional financing on the basis of their relatively

high per capita incomes. Moreover, access to global capital markets for critical development finance is difficult, and domestic resource mobilisation is constrained by the unfavourable economic climate and small tax bases. In addition, the limited human and technical capacity of these countries will undoubtedly hamper their ability to implement the strategies. Consequently, efforts in pursuit of the preferred approach will need to be buttressed by strong technical and financial support from development partners.

4.3.2 Financing for development

For any given country in the world, economic development projects are funded through several sources – including taxes, capital markets, loans, foreign direct investment and international aid. Each of these funding sources presents its own risks and opportunities. However, small states, such as those in the Caribbean, face particular challenges in financing development projects through these means, due in part to their small size and inherent vulnerability to external shocks.

Caribbean economies have a limited capacity to raise revenue from taxation given their small populations, and consequent modest tax base. In addition, the local financial system has not served as an adequate conduit for transforming savings into investment. The inadequacy of affordable financing has been identified to be a limiting factor in private sector development, resulting from a perception by the commercial banking sector of the riskiness of development-oriented financing.

Consequently, Caribbean economies face immature domestic capital markets and limited access to international capital markets. There is evidence that private capital markets, used by small states to compensate for adverse shocks and income volatility, tend to see small states as more risky than larger states. As a result, spreads are higher and market access more difficult.

Ultimately, the existing high debt burden cripples their ability to respond to the frequent and severe natural disasters to which they tend to be exposed disproportionately, which in turn increases administrative costs as well as the public debt. The outcome of this situation is sharp increases in the frequency of sovereign debt restructuring and a heightened probability of sovereign debt default. High and unsustainable debt burdens in these countries also add to the challenge of financing development. As previously discussed (chapter 2), several countries in the Caribbean are among the most heavily indebted in the world, which constrains their ability to generate both domestic and international resources to support development.

The high debt burdens of these countries hamper growth prospects, exacerbate vulnerability to external shocks and negatively affect domestic policy efforts, as well as their attempts to build resilience. This is partly because more funds have had to be diverted away from development and growth-enhancing objectives to service public debt obligations. Additionally, economic output has been further negatively affected by fiscal restraint, threatening the achievement of national development objectives, including improvements in human development.

The important question is what are the underlying reasons for this debt accumulation? A number of common elements have been identified in several studies.[2] While self-inflicted weaknesses such as lack of fiscal discipline and inadequacies in debt management practices have been singled out as contributors to this problem, exposure to external economic shocks and natural disasters has also been identified as a significant contributor. The analysis suggests that small states must seek to improve their economic governance, including fiscal discipline and debt management, but this must also be supported by the international community. Many Caribbean countries have 'graduated' from concessional financing because, on the measurement of per capita income, they are rated as middle-income countries. Consequently, financing the development of the SIDS of the Caribbean is challenging: they are considered too developed to be a high priority for many international donors, but they are too economically vulnerable to completely self-fund their own development, and potential damage from natural disasters attracts considerably less financing.

Historically, many large development projects in the Caribbean were funded by development banks such as the Caribbean Development Bank (CDB), which continue to play an important role to compensate for the international donor community's reluctance to lend to the region.

Brunton and Kelsick (2001) noted that the countries of the Caribbean are relatively unattractive markets for global lenders given their 'small size and associated structural inefficiencies, limited natural resource base and high transportation costs to export markets'. They argue that, when combined, these factors make it difficult for lenders to adequately measure and allocate risks. In assessing the relative unattractiveness of small states, Collier and Dollar (2001) found that small countries are generally perceived to be riskier than larger countries, even when they have good policies.

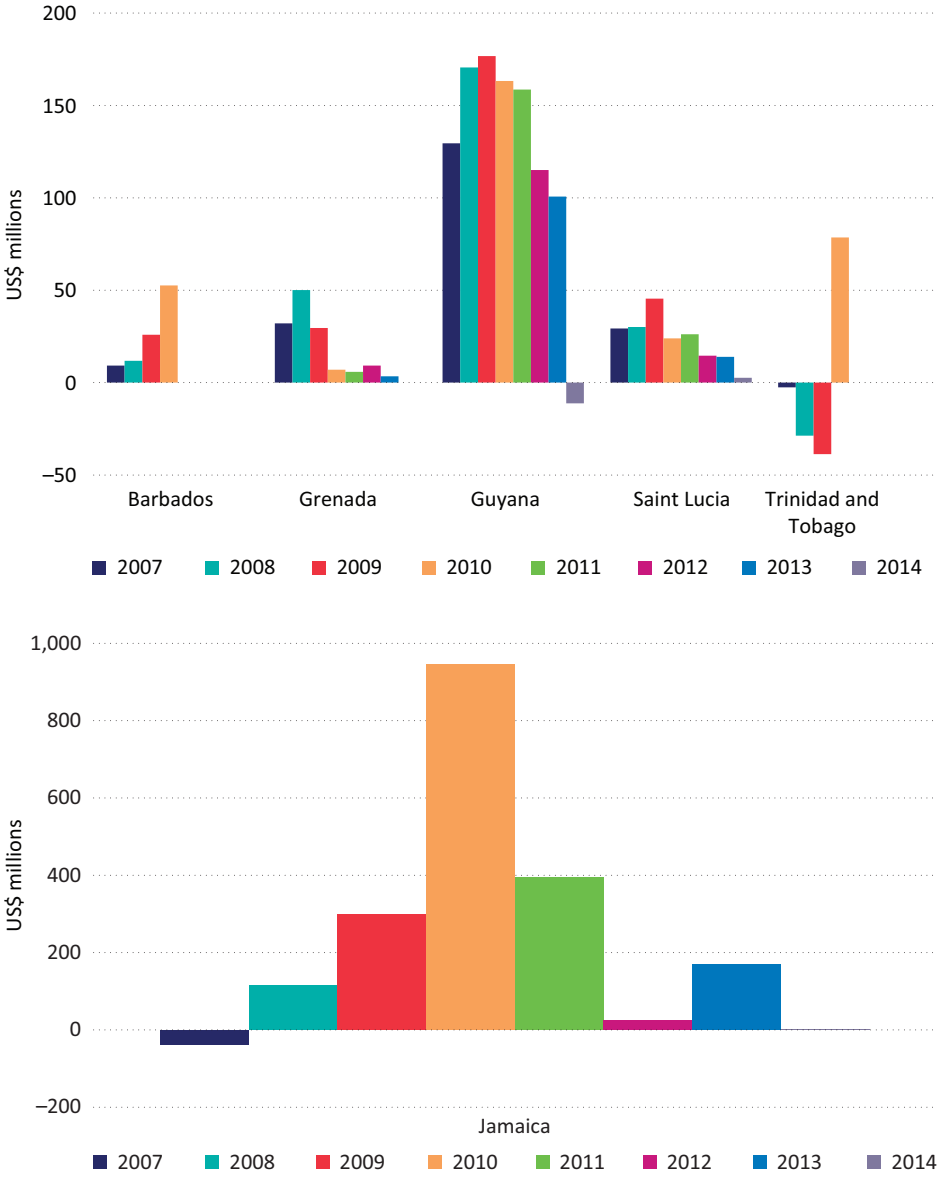
Box 4.1 Official development assistance flows 2007–2009

Between 2007 and 2009, official development assistance (ODA) rose in all countries except Trinidad and Tobago, which was a net lender. From 2010, however, ODA declined in all countries for which data is available (see Figure 4.1). At the same time, total net ODA extended by the OECD's Development Assistance Committee (DAC) members (see below) has risen (see Figure 4.2). It can be argued that, although total net ODA by DAC members rose, the average rate of increase has slowed considerably in 2007–2014 (3.4 per cent) relative to the previous eight years (9.8 per cent), as many of these governments have struggled with their own internal fiscal and economic challenges. In fact, examining the data from 2010 onwards suggests that growth in ODA has been relatively flat. Therefore, it may not be surprising that the countries of the Caribbean have experienced declines.

(*continued*)

(continued)

Figure 4.1 Trends in official development assistance, 2007–2014*

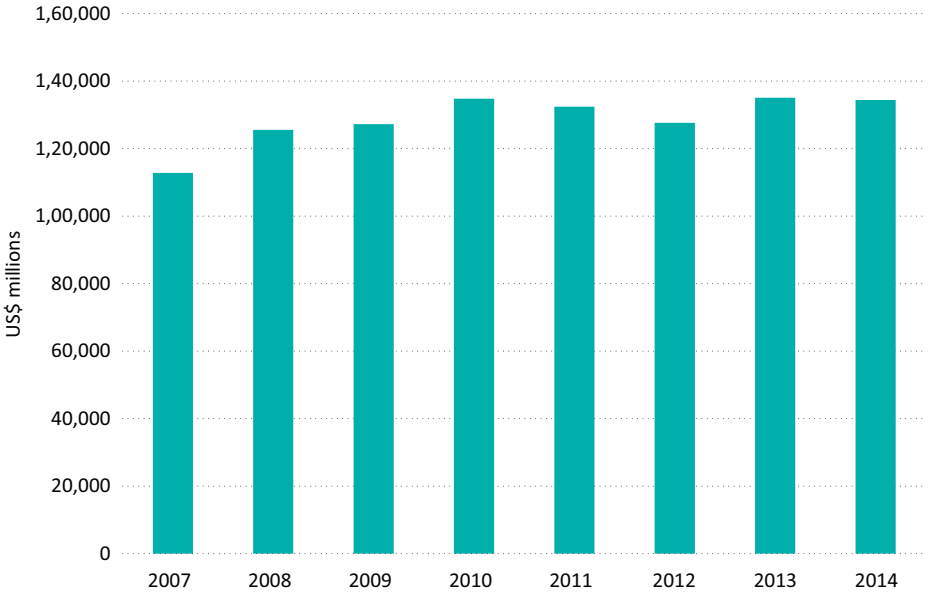


Source: http://stats.oecd.org/Index.aspx?DataSetCode=REF_TOTAL_ODF#
Development Assistance Committee (DAC) members of the OECD include Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, the European Union, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovak, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States.

(continued)

(*continued*)

Figure 4.2 Trends in net ODA from DAC countries,* 2007–2014 (US$ million)



***Note:** Data not available for Barbados and Trinidad and Tobago after 2010.
Source: https://data.oecd.org/oda/net-oda.htm

4.3.3 Financing options

There is clearly a need for other sources of finance to support the development effort. The development community within the region, along with national governments and regional bodies, has been considering a number of alternatives to traditional financing. One of the most popular is the diaspora bond. Globally, remittances were estimated at US$435 billion in 2014 and have outstripped foreign direct investment and ODA flows. Within the Caribbean, remittances are an important flow, with Jamaica, Haiti and Guyana being identified as the most heavily dependent on this source of income. Remittances represent 20 per cent of GDP in the case of Haiti, 15 per cent in the case of Jamaica and more than 10 per cent in the case of Guyana (Central Bank of Trinidad and Tobago 2014; The Commonwealth and Organisation Internationale de la Francophonie 2015). While remittances have long provided much-needed assistance to poverty alleviation in Caribbean countries, there is a need to stimulate/expand the investment role of the diaspora communities. A best practice in this regard has been the floating of a diaspora bond, which has over time yielded more than US$25 billion and US$11 billion in Israel and India respectively (Bensoussan et al. 2013).

Two main variations of a diaspora bond have been put forward. The first is a government-backed bond issued to emigrants from the region living in other parts of the world. The incentive for investors is that they would be able to invest in a

government security from their home country and aid in the country's development. The incentive for governments is that they would attract funding from a previously untapped source, and would not have to depend solely on the resident market for 'domestic' financing. The second option, which was put forward by the Grenada Diaspora Organisation (*Caribbean News Now* 2011), is to create a certificate of deposit – which they would also refer to as a Diaspora Bond – as an alternative to the certificates of deposit offered in the local banks of the countries where emigrants have made their new homes. This format, they argued, would save the government from adding to its debt burden; would be targeted towards specific development projects; and would be isolated from the political process, since it would be managed by a consortium of banks.

Tapping into the diaspora is potentially lucrative. infoDev (2013) found that a quarter of the respondents in the infoDev Caribbean Diaspora Survey, April–May 2013, had net investable wealth or annual incomes above US$100,000. Furthermore, the diaspora maintains a meaningful connection to the region (60 per cent visit the region at least once a year) and is highly engaged (84 per cent either send money to individuals living in the region or volunteer, mentor or invest in entities in their home countries). Interestingly, 21 per cent of respondents in the survey already invest in companies or stocks 'back home', and 78 per cent stated that they would be willing to invest capital in select businesses in the Caribbean. Notwithstanding these encouraging statistics, only 63 per cent of respondents were interested in diaspora bonds, compared with 86 per cent interested in supporting their alma mater and 78 per cent interested in investing in businesses. Interest in diaspora bonds could be improved with greater transparency and accountability on how the fund was used, the governance structure of the fund and the general administration of the fund. It is also interesting to note that diaspora investors were interested in investing in other Caribbean countries, not just their home country, potentially creating an even larger market for diaspora bonds.

In order to actualise the potential contribution of remittances to Caribbean economies, a number of regulatory and administrative hurdles need to be overcome. It has been argued, for example, that the anti-money laundering and countering the financing of terrorism (AML/CFT) regulations have been having some adverse and unintended consequences on the flow of remittances. These include the 'de-risking' of financial institutions, evidenced by regional banks limiting their exposure to high-risk customers such as the casino and gaming industry; regional banks limiting services considered to be high risk; and US banks discontinuing corresponding banks' relationships. There is also the issue of the capacity to implement the AML/CFT regulations. This has prompted the following recommendations:

- the international community should promote greater awareness of the regulation;
- countries should undertake national risk assessments to address their specific circumstances;
- regulators should avoid an over compliance approach and should provide guidance when financial institutions over estimate the risks or adopt extremely conservative controls; and

- countries and their development partners should create a pool of AML/CFT expertise to assist in capacity building (Central Bank of Trinidad and Tobago 2014).

Another alternative to traditional financing is a debt-for-nature swap. This involves a creditor forgiving a portion of the debt of the debtor if the country agrees to meet certain environmental conditions. In other cases, a conservation organisation may purchase the country's outstanding debt and transfer it to the country (essentially writing it off), in exchange for the country's commitment to enact certain environmental policies. Debt-for-nature swaps have been used throughout the developing world. In the Caribbean, Jamaica has successfully used this instrument to cancel almost US$13 million of its debt to the United States and create a trust fund to manage the country's national parks and forest reserves (Nature Conservancy 2004).

There are numerous benefits to debt-for-nature swaps. Borrowers are able to reduce their outstanding debt and fund conservation initiatives, as well as receive indirect economic benefits such as increased tourism and improved sanitation. Creditors are able to improve the risk of their portfolio by eliminating high-risk claims, while conservation organisations benefit from the long-term financing of conservation initiatives. The main drawbacks are that these swaps may not have a meaningful impact on total debt; they may not significantly foster environmental conservation because the supporting infrastructure is weak; and they may not lead to any significant benefits for persons directly affected by the conservation efforts. Nonetheless, these are attractive instruments in a region as geographically diverse as the Caribbean.

4.4 Building capacity

Caribbean countries, like most small states, face serious human capacity constraints, which limit their growth prospects. Sovereignty necessitates certain fixed costs for providing public services, including for policy formulation, regulatory activities, education and social services, justice, security and foreign affairs. Indivisibilities in the provision of these public goods mean that small states face high costs per person.

Strong institutions are especially important in small states seeking to cope with shocks. The evidence indicates that small countries with high-quality institutions have a lower degree of growth volatility, and that those with stronger state capacity, in particular, are more likely to enjoy higher rates of economic growth. While the constraints faced by small states with regard to institution building mostly arise from the overhead cost indivisibility problem, rendering institutional structures more expensive per capita, a lack of necessary specialised expertise also contributes to the problem. The limited pool of skilled human resources to perform the vital roles of the public service and a lack of depth in specialisation affects implementation and, by extension, absorptive capacity and is made worse by brain and skill drain.

Brain drain is a massive barrier to any type of development within small states. Scarce financial resources have to be devoted to education and training, and are a considerable investment for small economies. While small states' governments are

striving to maintain spending on health and education, responding to shocks and international migration are undermining their efforts.

This limited capacity not only constrains internal development, but also the ability of small states to meaningfully and effectively track, participate in and engage with the international community on many of the key issues that affect them. Consequently, many of the international rules, regulations and mechanism that they are required to adhere to are not designed to take account of their peculiar challenges, and often exacerbate these problems.

Clearly there is also a need to improve data and intelligence to better inform decision-making. A lack of data for small states is hindering the efforts of these countries and the international community to formulate and implement sound and informed policies for sustainable growth and development. The absence of institutional and human capacity is a key constraint, and efforts are needed to explore practical ways to enable small states to fill these gaps.

Research and development networks across the region need to be re-energised and reinvigorated in order to revitalise the development agenda. This effort can be centred at the universities, other high-quality research nodes and other strategic partnerships that can support the infusion of new ideas and new thinking.

4.5 The role of the international community

It is evident that, while the requirements and strategies for building resilience are clear, the ability of small states to do so is constrained. There is strong evidence that, with the right mix of policies, these countries can improve their ability to respond to adverse shocks. However, the reality for most small states is less orderly, with shocks to key sectors often derailing their efforts at internal and external balance, as illustrated in chapter 3 (worst-case scenario), requiring concerted fiscal effort to return these economies to a growth path and contributing to higher levels of debt.

Similarly, improving the efficiency of small states' markets is constrained by their limited human and financial resources, although there is scope for ongoing national efforts to simplify procedures for setting up and doing business, as well as to remove other impediments to the efficient operating of markets. Equally important for small states is the quality of their institutions.

These countries have limited resources and ability to cope with these events without significant international support. For small states, international support is required in accessing resources on favourable terms to fund critical infrastructure projects; and filling capacity gaps that hamper their ability to cope with emerging economic, social and environmental issues. Moreover, grappling with the requirements of an increasingly interconnected global economy necessitates improved access to trade finance and support in adapting and innovating. Since income and employment derived from trade represents a very significant component of growth, development and poverty reduction efforts in small states, addressing deficiencies in trade-related infrastructure, production and cost efficiencies is important for small states. Access to shock facilities

and other support is also necessary for small states. Equally important is assistance in addressing their significant debt burden, which can act as a further drag on growth, constraining their ability to achieve their sustainable development goals.

For small states, high debt and debt-financing costs, and their limited access to concessional resources, must be addressed. With the exception of those small states eligible for the 'small island economy exception', these countries have not generally had access to concessional finance. Consequently, they have relied mainly on commercial resources to finance their growth and development, as well as their recovery from shocks, the result of which has been an increase in public debt.

Some progress has been made in international recognition of the fact that using GDP per capita as the only or major indicator for allocation of aid puts many middle-income vulnerable countries in a disadvantaged position. Some multilateral organisations have changed aspects of their mechanisms applicable to small states. The World Bank and the IMF have given more attention to the special constraints faced by small vulnerable economies. However, there is still no consensus among international organisations in favour of introducing programmes specifically designed for small states or recognising them as a category of countries.

The current environment is not sufficiently supportive of these countries. This is perhaps a reflection of their size and limited ability to effectively engage in, and consequently influence, international decision-making. Multilateralism and international platforms provide the region with opportunities to play a role in global affairs that is disproportionate to their size. Yet they continue to be disconnected from the most salient debates at both the regional and international levels.

With more than half of its members made up of small states, of which the Caribbean comprises over 30 per cent, the Commonwealth has long been sensitive to the unique needs of these countries. For more than three decades, the Commonwealth has played a leading role in articulating the challenges that small states face. The Secretariat has engaged in a programme of advocacy, policy research and technical assistance targeted at supporting small states. Arising from this work, the Commonwealth has tabled the following recommendations to the international community.

4.5.1 Recommendations

Addressing debt challenges

Proposal 1: Providing debt relief – debt swaps for climate change adaptation and mitigation.

Proposal 2: Addressing debt accumulation – counter cyclical loans to mitigate against debt accumulation and growth challenges.

Despite debt-restructuring operations undertaken by indebted Commonwealth small states, most continue to face high and unsustainable debt burdens. This implies that existing mechanisms are not sufficient to deliver the volume of relief needed to contain small states' debt issues. At present, there is no appetite for debt relief after the Heavily Indebted Poor Countries initiative, particularly given reduced donor

resources. However, it is evident that to resolve the escalating situation in small states requires some form of debt relief, as a number of small states show non-negligible risks of debt default.

Swaps of debt for climate change adaptation and mitigation are innovative ways of providing small states with urgent and necessary debt relief (Mitchell 2015a). This initiative marries small states' indebtedness with their need for finance for climate change adaptation and mitigation, given their high environmental vulnerability. Counter cyclical loans would allow a suspension of debt service in times of shocks through established triggers and flexible grace periods. Therefore, if broadly applied by international finance institutions (IFIs), countercyclical loans could help to avert unnecessary adjustment costs, further debt accumulation, and ill-timed debt restructuring and accompanying output declines.

Improving access to concessional resources

Proposal 3: Revising the graduation criteria of key IFIs to take into account the vulnerabilities of small states.

Proposal 4: Using vulnerability as a criterion for determining foreign aid and other assistance by external donors.

Using vulnerability as a recognised category agreed upon by international organisations would improve many aspects of donor co-ordination and access to resources by small states (Mitchell 2015b). In addition, it could produce a major incentive for low-income small states to improve their performance and economic governance. Before introducing the recent reforms in concessional funding, some of which are beneficial to small states, the World Bank conducted a cost analysis and found that the reforms were not likely to be very expensive for the bank. These small changes in key IFIs and other international organisations have the potential to generate significant positive gains in small states.

Strengthening the capacity of small states

Proposal 5: Broadening the scope of IFIs' work to cover designing appropriate policies to build resilience.

Proposal 6: Providing technical assistance to fill the knowledge and data gaps, especially in the areas of environmental and governance issues.

For access to international and bilateral aid, and in debt restructurings, most countries have had to agree to an IMF programme that does not give due consideration to the need to strengthen developmental elements. Greater attention among IFIs to resilience building would require an articulation of the social, institutional/governance and environmental constraints, not only macro-economic adjustment. These efforts will contribute to the benefit of small states and will greatly assist in filling knowledge and data gaps in these important areas.

Strengthening voice and participation

Below are some of the options for small states to elevate their voice for successful outcomes.

Proposal 7: Enhance high-level political advocacy by improving bargaining power by strengthening regional alliances; prioritise regional areas of concern; and enhance the institutional framework.

It is well documented that small states are confronted by capacity constraints in terms of human resources and institutions to fully participate in global fora. As a result, they have particularly acute challenges in acquiring information, both qualitative and quantitative, as well as feeding into these fora with their concerns and interests. Small states can benefit from better sharing of resources to mitigate their capacity deficiencies. It is paramount that they exploit areas of mutual interest and benefit. By choosing to focus on one or two particular issues and working collectively, they can better advocate for meaningful change. Across all international and regional institutions in which small states are represented and where policy outcomes are negotiated, small states can, by strengthened co-ordination, extract more meaningful concessions from the international system.

4.6 Conclusion

In financing their development, small states are challenged by their narrow tax bases, high debt, large trade deficits, underdeveloped domestic financial markets, small private sectors, fragile banking systems, the need for institutional and legislative reforms and inadequate IT infrastructure. Recommendations for grappling with these issues and mobilising greater levels of domestic financing include wider use of public–private partnerships; debt reduction measures (e.g. debt buyback operations and debt swaps); innovative investment initiatives (e.g. citizenship by investment programmes); tax enforcement and strengthening (compliance and reducing tax concessions); tax consolidation (regional revenue authorities); and tax incentive initiatives (a regional code of conduct). However, the reality is that, even with these measures, small states will not achieve the level of domestic resources mobilisation needed to finance development goals.

Efforts being made domestically to enhance efficiency and effectiveness in terms of tax reforms, the introduction of VAT, wider public sector reforms, legislative and IT improvements and economic diversification will need an injection of resources.

Moreover, maximising the effectiveness of existing resources will require international assistance with building institutional capacity. Assistance is also needed to promote other sources of financing, including FDI, public–private partnerships and de-risking mechanisms and to utilise savings as a tool for mobilising domestic resources – for example, through diaspora bonds and generally using remittances effectively to contribute to sustainable development goals.

In spite of their challenges, some small states enjoy relatively high GDP per capita, which gives the impression of economic strength, when in reality these economies are fragile, disproportionately affected by external shocks and lack resilience. This has adversely affected the level of support offered by the international community to these countries. Globalisation has increased the potential for adverse shocks to feed

through to these economies, and will continue to do so in 2050. The evidence suggests that the impact of each wave is cumulative, thus further reducing the ability of small states to cope with future shocks. The lower levels of international support, therefore, will challenge small states in their efforts to achieve their sustainable development goals.

Countries in the region need to develop a strategic, collaborative and co-ordinated approach to interacting with the international community to achieve their vision of the Caribbean of the future.

Notes

1 Inputs to this chapter were provided by Stacia Howard, Marsha Atherley-Ikechi, Anthony Clayton, Winston Moore, Ryan Peterson and Tom Rogers.

2 In 2013, the Commonwealth commissioned three debt studies focusing on: (1) what are the root causes of debt in Commonwealth small states; (2) what explains the frequency of debt restructurings observed over the last decade among small states and what lessons can be learned; and (3) what are the economic and financial implications of small states' unsustainable and rising debt burdens?

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Section Two

Key Sectors for Catalysing Sustainable Development in the Caribbean

Chapter 5

Energy: the Key to a Cleaner, More Prosperous Caribbean

Marsha Atherley-Ikechi and Tom Rogers

5.1 Introduction

Commonwealth Caribbean states face several environmental challenges that prevent them achieving sustainable development. The occurrence of natural disasters and the effects of climate change on tourism and agriculture are negatively affecting Caribbean countries, as these industries provide a high percentage of GDP. Additionally, natural disasters can disrupt development prospects, as funds are diverted to deal with the immediate aftermath of a disaster. The role of energy is important in so far as increased access to energy can facilitate economic growth and is integral to human development. Given the aforementioned effects of climate change on the economy, there has been a renewed emphasis on reducing small states' reliance on fossil fuel imports. This in turn has led to the examination of renewable energy possibilities and the issue of energy security.

The transformation of the Caribbean's energy sector to one based on clean, sustainable sources of indigenous energy will have a wide-reaching impact on the region. This impact will extend much further than the creation of resilient energy systems. It will create employment and rejuvenate economic sectors that have suffered in recent years, such as tourism, manufacturing and transportation. It will provide vital experience of the region's ability to work together, leading to better regional understanding and cohesion. Perhaps most importantly, the Caribbean successfully pursing a sustainable energy system will send a strong message to the rest of the world that tackling climate change and transitioning from an almost 100 per cent fossil fuel-based energy system to a clean, sustainable energy system is indeed possible.

This study is based on a desktop review of existing literature related to the Caribbean energy sector, and on telephone interviews with the following Caribbean energy sector stakeholders:[1]

- CARICOM energy unit;
- Organization of American States (OAS);
- Caribbean Development Bank (CDB);
- Ministry of Environment and Housing – The Bahamas;
- Ministry of Finance, Planning, Economic Development, Trade, Energy and Cooperatives – Grenada;

- Ministry of Sustainable Development, Energy, Science and Technology – Saint Lucia;
- Office of Utilities Regulation – Jamaica;
- Ministry of Energy and Energy Industries – Trinidad and Tobago;
- Regulated Industries Commission – Trinidad and Tobago;
- The Energy Division, Ministry of Finance, Economic Affairs, and Energy – Barbados.

The study also involved the use of an online survey, with 31 responses from Caribbean energy sector stakeholders, including:

- Deutsche Gesellschaft für Internationale Zusammenarbeit;
- European Union;
- national government energy agencies;
- national regulators;
- university energy experts;
- regional utilities;
- United States Agency for International Development (USAID);
- World Bank;
- Worldwatch Institute.

5.2 Review of energy sector strategies

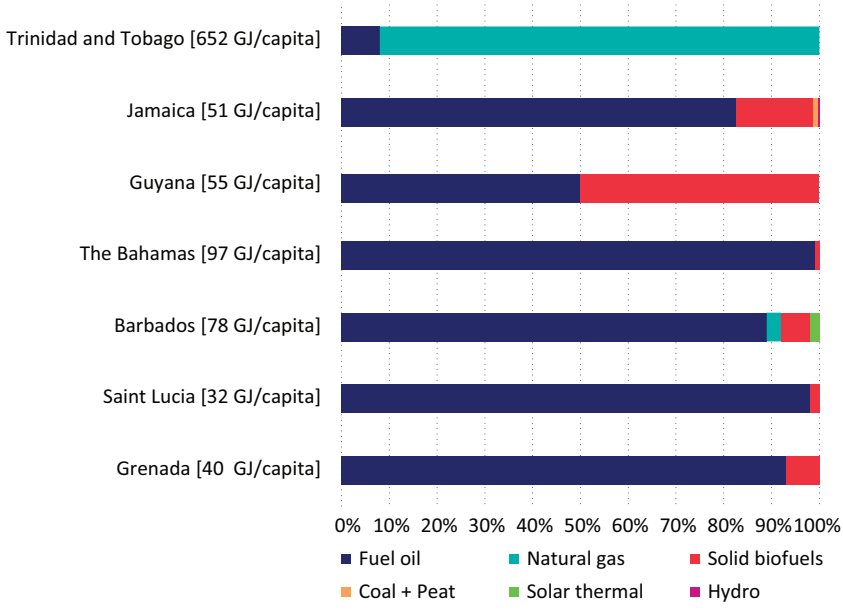
This section first discusses the status of the regional energy sector, before summarising the strategies and resilience of the target countries. There then follows a review of the international sustainable energy environment, determining both emerging trends and risks, before assessing the ability of existing strategies to foster sustainable growth.

5.2.1 Regional strategy

Figure 5.1 shows that all of the selected target countries have a primary energy supply dominated by oil products (heavy fuel oil and diesel), which is predominantly used for electrical power able to be quickly dispatched from low-speed diesel generators (this means that they are able to quickly increase or decrease their electrical output in response to changes in electrical demand, a necessary quality for isolated energy systems). The exception is Trinidad and Tobago, the primary producer and exporter of petroleum products in the Caribbean, which converted most of its generation capacity to natural gas during the 1990s.

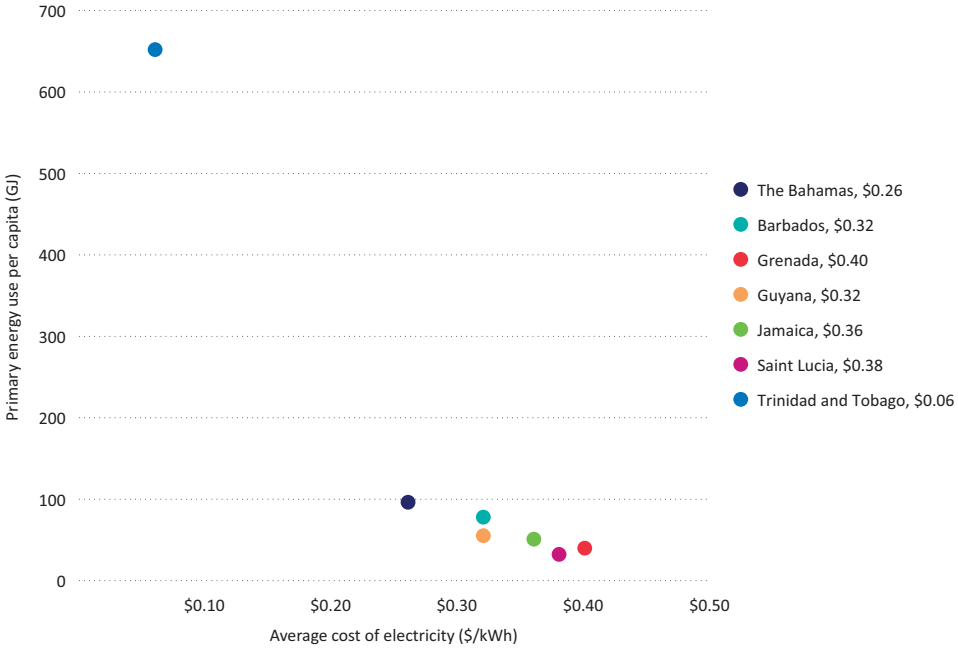
The reliance on oil products, combined with small economies of scale, has left Caribbean nations with some of the highest electricity prices in the world and exposes their already-fragile economies to increasing and volatile international oil prices and increasing electricity costs (see Figure 5.2). This has been the case even when taking into consideration the favourable financing arrangements of the PetroCaribe

Figure 5.1 Primary energy share among the target countries



Source: International Renewable Energy Agency (IRENA) 2012a

Figure 5.2 Primary energy use per capita versus average cost of electricity (US$/kWh)



Source: Inter-American Development Bank (IDB) 2012

programme. This programme provides Venezuelan oil and oil products at preferential financing terms to 17 member states across the Caribbean and Central America (PetroCaribe 2015). Commonwealth and CARICOM member states that are signed up to this agreement include Antigua and Barbuda, The Bahamas, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, St Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines, and Suriname. Trinidad and Tobago and Barbados are not members of the PetroCaribe agreement. It should be pointed out that the PetroCaribe deal is vital to Haiti, given that there are no alternative financing sources and little progress has been made in reducing structural vulnerabilities in the energy sector. While the PetroCaribe programme has not experienced any major problems since it was first created in 2005, its future is currently uncertain as Venezuela grapples with its own economic challenges, including high inflation and commodity shortages (COHA 2014). Subsidy schemes such as the PetroCaribe deal help support the existing, high fossil-fuel share in the Caribbean energy sector and act as a barrier to renewables. Energy subsidies in the fossil fuel sector hold back the region's long-term growth and competitiveness, both by diverting resources away from other spending priorities and by discouraging efficiency-enhancing investment in the energy sector and distorting incentives to innovate.

The US Geological Survey splits the Commonwealth Caribbean region into four geological regions; in particular, those regions with geological features suggesting oil and gas deposits (USGS 2012). Table 5.1 shows these geological regions, along with the undiscovered, technically recoverable oil, natural gas and natural gas liquids for each region. Note that these regions include countries and territorial waters beyond those considered in this report. These four regions account for approximately 5 per cent of the undiscovered oil and gas in the Caribbean and South America combined.

According to Vella (2012), the main offshore areas of focus in the Caribbean are Trinidad and Tobago, Jamaica, The Bahamas and Barbados. Given its existing production infrastructure, the Columbus basin off Trinidad and Tobago is considered the least risky frontier in the Caribbean. In 2011, the country produced 135,000 barrels per day of oil, and in 2010 the country produced 42 billion cubic metres of natural gas, more than three times the level seen in 2000. British Petroleum Trinidad

Table 5.1 Caribbean assessment results for undiscovered, technically recoverable oil, gas and natural gas liquids (95 per cent chance of at least the amount tabulated)

Province name	Oil (million barrels)	Natural gas (billion cubic metres)	Natural gas liquids (million barrels)
Tobago Trough	0	185.7	22
Barbados Accretionary Prism	22	119.4	93
North Cuba Basin & Greater Antilles Deformed Belt	1,185	56.8	170
The Bahamas Platform	554	39.6	53
Total	**1,761**	**401.5**	**338**

Source: USGS (2012)

and Tobago has been the major player in Trinidad and Tobago since 1969. Currently, Jamaica has no history of production of its own, despite trying hard to encourage interest in its offshore acreage over the years. In 2014, the government secured a production-sharing agreement with Tullow Oil to explore the Walton Basin and Morant Basin areas, covering 32,065km^2. The Bahamas could hold up to 4.3 million barrels of oil. Although the country has been trying to get some drilling under way for some time, it has so far failed to attract any interest. Onshore oil and gas production have existed in Barbados since the early 1900s (see section 5.2.2), and Barbados's government has opened large parts of the country's offshore area for bidding during 2015. Despite the current low oil-price environment, Barbados is keen to encourage further exploration of its offshore acreage, reported to be around 2.5 million barrels of oil reserves and 142 million cubic metres of natural gas reserves.

The recent drop in the price of oil has introduced uncertainty over the general pursuit of oil and gas reserves throughout the region, in particular in current non-producing countries (Vella 2015), but also in Trinidad and Tobago, which has stepped up developments in its renewable energy sector since 2012 (Sookraj 2015).

Figure 5.1 also shows the primary energy use in the selected countries and highlights the vast difference in energy use between Trinidad and Tobago and the rest of the target countries, with Trinidad and Tobago alone consuming 3.5 times the energy of all the other target countries, and 2.5 times as much as the rest of the CARICOM member states combined. This is further highlighted in Figure 5.2, which shows the substantially lower cost of energy in Trinidad and Tobago and the substantial drop in energy use per capita with increasing cost of electricity.

In the light of the ramping up of US natural gas export capacity, the conversion of energy systems from predominantly fuel oil-based systems to liquefied natural gas (LNG)-based systems is being proposed for some Caribbean countries (IDB 2013a). LNG has the advantage that it is cleaner than fuel oil plants, with LNG plants emitting less carbon dioxide (CO_2) per tonne. LNG also has considerable cost benefits compared with existing energy systems, with all-in costs estimated to be US$0.14/kWh. However, continuing advancements in recent years have resulted in several renewable energy technologies frequently being the most competitive form of new electricity generation option, often beating natural gas on levelised cost of energy. Given the large infrastructure changes needed to adapt to LNG-based energy systems, the economic cost and risk of conversion for some small islands are proving prohibitive – with one regional utility company recognising that conversion to natural gas is uneconomical and suggesting that renewable resources offer more environmental and economical benefits, as well as better market stability and energy security/resilience (Emera 2015).

Initiated in 2002 and approved in 2013, the goal of the CARICOM Regional Energy Policy is a fundamental transformation of the energy sector through the provision of indigenous, secure and sustainable supplies of energy (CARICOM 2013). This policy seeks to guide the Caribbean community in its pursuit of a sustainable energy sector and has a renewable energy (RE) target of an overall 47 per cent share in the region by 2027.

Table 5.2 Energy statistics for the selected countries in the Caribbean

	Grenada	Saint Lucia	Barbados	The Bahamas	Guyana	Jamaica	Trinidad and Tobago
Population	104,000	174,000	273,000	343,000	754,000	2,700,000	1,300,000
Energy (PJ/year)	4.2	5.6	21.3	33.1	41.8	136.4	848.1
Energy per capita (GJ/year)	40.4	32.2	78.0	96.5	55.4	50.5	652.4
GDP/capita (US$)	$7,500	$6,890	$15,035	$22,665	$3,739	$5,133	$16,614
Cost of electricity US$/kWh	$0.40/kWh	$0.38/kWh	$0.32/kWh	$0.26/kWh	$0.32/kWh	$0.36/kWh	$0.06/kWh
Electrification rate	99.5%	98.0%	100.0%	100.0%	66.0%	92.0%	99.0%

Source: IRENA 2012a, IRENA 2012b

In 2009, the CARICOM Secretariat commissioned the Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS), designed to build on existing regional efforts and to provide CARICOM member states with joint regional sustainable energy targets and a common, coherent strategy for transitioning to sustainable energy systems (Worldwatch 2012).

Emerging from C-SERMS, the Worldwatch Institute's 2012 summary report for policy-makers provides an in-depth assessment of the region's energy sector, and notes that:

> *despite the strong potential for energy efficiency and renewable energy observed in all CARICOM member states, the development of sustainable energy systems will not occur organically, at least not to the extent or at the pace needed to rapidly harness their full socio-economic and environmental benefits. Regional and national governing bodies must be proactive in implementing policy frameworks that promote the investments needed to encourage energy efficiency improvements and allow renewable energy projects to take hold.*

Furthermore, according to this report:

> *no single policy mechanism can successfully transform a nation's entire energy sector. Instead, policy-makers must design and implement an appropriate policy mix that matches unique domestic conditions. International experience shows that countries that have successfully promoted renewable energy and energy efficiency score high on three essential building blocks:*
>
> 1. *A long-term vision that includes goals and targets;*
> 2. *Concrete policies and measures to achieve these goals and targets; and*
> 3. *Effective administrative processes and governance structures for implementing and revising these mechanisms.*
>
> *Establishing an official long-term vision for sustainable energy development that lays out clear goals and priorities and commits all government stakeholders to a common and cohesive strategic agenda represents a crucial component of effective sustainable energy planning. CARICOM has taken a significant step forward by finalizing its Energy Policy. In addition to this regional vision, all 15 CARICOM member states now have a national energy policy in place or in some stage of development, a significant improvement from when development of the CARICOM Energy Policy began a decade ago.*
>
> (Worldwatch 2012, 18–19)

5.2.2 Strategies of the selected countries

Various factors contribute to high energy and transport costs, diseconomies of scale and unfavourable power plant management protocols for the different Caribbean countries. The energy strategies and differences of each country are discussed in the following sections. Table 5.3 summarises the policy and regulation status of the countries targeted in this report.

Table 5.3 Current policy and regulation status of the energy sector in selected countries

	Policy status	Legislation status	Harmonisation of legislation with RE/SD	Policy target	Independent regulator	Economic incentives	Monitoring of implementation
The Bahamas	National Energy Policy 2013–2033, Action Plan every three years	Under review	Revised legislation expected to be	30% of electricity generated from RE by 2033	Utilities Regulation Competition Authority to assume responsibility for electricity sector	Some	Yes
Barbados	2012 Draft National Policy being revised	Revised legislation awaiting proclamation	Revised legislation expected to be	29% of electricity generated from RE by 2029	Fair Trading Commission	Many	Proposed
Grenada	2011 National Policy being revised	Under review	Revised legislation expected to be	20% of electricity generated from RE by 2020	None	No formal incentives	None
Guyana	1994–2004 National Policy expired, 2014–2018 Strategic Plan				Public Utilities Commission	Exist, but unknown*	Yes
Jamaica	2009–2030 National Policy	Under review	Revised legislation expected to be	20% of electricity generated from RE by 2030	Office of Utilities Regulation	Limited	Yes

(*continued*)

Table 5.3 Current policy and regulation status of the energy sector in selected countries (*continued*)

	Policy status	Legislation status	Harmonisation of legislation with RE/SD	Policy target	Independent regulator	Economic incentives	Monitoring of implementation
Saint Lucia	Sustainable Energy Plan 2001, 2010 National Policy	Under review	Revised legislation expected to be	30% of electricity generated from RE 2020	To be set up	Limited	Yes
Trinidad and Tobago	2011 National Climate Change Policy	Needs revision	No	5% of electricity generated from RE by 2020	Regulated Industries Commission	Limited	Yes

Source: Interviews with government energy ministries, unless marked by asterisk
www.map.ren21.net

The Bahamas

The Bahamas imports 99 per cent of its energy needs, mostly in the form of oil products. The two main electricity generators are the state-owned Bahamas Electricity Corporation (80 per cent of total electricity production) and the privately owned Grand Bahamas Power Corporation (20 per cent of total electricity production), and together they have a generating capacity of 137MW. Because of the archipelago geography of The Bahamas, its electricity system comprises 16 isolated grids, which leads to substantial diseconomies of scale. Except for Trinidad and Tobago, The Bahamas has the highest energy consumption per capita among the target countries.

The islands have attractive renewable energy potential, with strong wind resources and good solar and biomass resources. With reasonably easy access to deep waters off most of its islands, ocean thermal energy conversion (OTEC) could also provide a sizeable amount of energy (UNDP 2014). Responsibility for the energy sector falls under the Ministry of Environment and Housing, with regulatory responsibility soon to be assumed by the newly created Utilities Regulation and Competition Authority (URCA).

The nation has a moderate target of 30 per cent of its electricity to be generated from renewable energy by 2033; however, with no firm supporting policy, strengthening of the policy and regulatory framework is required. Of the seven countries examined, the policy environment is least conducive in The Bahamas, with no regulation existing for the interconnection of power generation. This makes it nearly impossible for independent power producers (IPPs) to feed into the existing grid. Neither are there any national energy efficiency standards or a national energy conservation effort; some estimates suggest as much as 27 per cent of electricity demand could be saved through efficiency measures alone (IDB 2013b).

Subsidies are of concern for transition towards a sustainable energy system, with The Bahamas giving away a sum equivalent to 1 percentage point of gross domestic product (GDP) in pre-tax subsidies to its petroleum and energy sectors, the second-highest such figure among Caribbean oil importers (*Bahamas Tribune* 2015). Such subsidies, if continued, along with the non-consideration of the external costs associated with fossil fuel use, places renewable energy technologies at a distinct economic disadvantage.

Barbados

With 1,000 barrels/day of oil extracted and sent to Trinidad for refining, Barbados is one of the few Caribbean islands with its own fossil fuel resources. This represents one-fifth of local demand. It also produces the equivalent of around 500 barrels of oil per day of natural gas for local consumption (see Figure 5.1). Barbados Light and Power (BL&P) is the sole provider of electricity on the island. BL&P is privately owned by Light and Power Holdings Ltd (LPH), which is also the majority shareholder in Dominica Electricity Services (DOMLEC) and an investor in St. Lucia Electricity Services Ltd (LUCELEC). Light and Power Holdings Ltd is majority owned by the Nova Scotia-based utility company, Emera. Emera is also the majority owner of the

Grand Bahama Power Corporation (see the Bahamas section). BL&P has an installed generation capacity of 235MW.

The Barbados government's Energy Division comprises an Administrative Unit, a Legal and Regulatory Unit, a Natural Resources Department, a Renewable Energy and Energy Conservation Unit and a Research and Planning Unit, and falls within the Prime Minister's Office. The Energy Division is currently overseeing a Public Sector Smart Energy programme funded by an Inter-American Development Bank (IDB) loan (US$17 million) and an EU grant (€5.8 million) (IDB 2012; GoB 2010). The division is also responsible for monitoring the island's local oil interests, both onshore and offshore, and is currently overseeing the island's 2015 offshore licensing campaign (GoB 2015). The 2012 Draft National Policy for Barbados is currently being revised. The independent Fair Trading Commission oversees regulation of electricity (Barbados FTC 2015).

Barbados has attractive wind, solar and biomass resources. Its solar resources have been technically exploited since the 1970s, because of a now well-established solar hot water heating industry – approximately 30 per cent of the island's homes have locally manufactured solar water heaters installed, with many of its hotels also making use of this technology. More recently, approximately 7.5MW of distributed solar photovoltaic (PV) systems were connected to the island's utility grid through BL&P's Renewable Energy Rider programme. Under this programme, all electricity exported to the grid receives a credit at 1.6 times the Fuel Clause Adjustment (a fuel surcharge), up to one-and-a-half times the customer's historical usage; above this, the customer is compensated at the rate of the Fuel Clause Adjustment (BREA 2014a). At the moment, IPPs have no legal standing; however, in 2015 the Electric Light and Power Act is set to make provisions for utility-scale IPPs.

The current total capacity limit for variable renewable energy onto the electricity grid is 20MW of distributed solar PV and 20MW of utility-scale solar PV. BL&P is planning the installation of an 8MW utility-scale solar PV plant in the north of the island during 2015 and, in a recent RE grid integration study, acknowledged that its electricity grid can accommodate up to 66MW of solar PV (45MW distributed and 20MW utility scale) and at least 15MW of wind energy capacity, with minimal mitigation measures (BL&P 2015). This is approaching half of the peak demand and signals that similar penetration rates across the whole of the Caribbean may be also possible.

The island has a strong lobbying group for renewable energy in the form of the Barbados Renewable Energy Association (BREA). Active since 2012, BREA has become a central voice for the use of renewable energy on the island, and serves the interests of the island's sustainable energy-focused companies, institutions and the general public (BREA 2014b).

The current policy target for the island is for 29 per cent of renewable energy generation by 2029; however, many key stakeholders within the energy sector recognise that this target is low. Signals from the country's BL&P utility company (Emera 2015), and presentations arranged by BREA together with the University of the West Indies (UWI), Cave Hill Campus (Hohmeyer 2014), suggest that transitioning towards 100 per cent renewable energy generation is an attainable target by 2050.

Throughout the Caribbean, the transport sector accounts for between one-third and one-half of primary energy use, and is dependent upon fossil fuels. Barbados is making strong progress towards the use of cleaner, more efficient vehicles. A local company, Megapower, has imported more than 100 electric vehicles to date, and, with many of its customers installing solar PV systems, provides a clear message that a clean transport sector is an economic possibility (Megapower 2015). The company is also exploring other Caribbean markets, including Grenada, Dominica, Saint Lucia and Antigua.

Grenada

As with elsewhere in the Caribbean, Grenada is almost wholly dependent on imported oil products, which provide 93 per cent of its overall energy supply. The remaining 7 per cent is provided largely by solid biomass (see Figure 5.1). Generation, transmission and distribution of electricity on the main islands are provided by the private/public-owned Grenada Electricity Services Ltd (GRENLEC). The utility has an installed capacity of about 50MW.

The island has an electricity access rate approaching 100 per cent; however, high energy costs continue to restrict the ability of homeowners and businesses to access reasonably priced electricity, which is urgently required to encourage sustainable economic growth.

Grenada has good geothermal, solar, wind and some hydropower potential. It aims to produce 20 per cent of all its electricity and transportation consumption from renewable energy sources by 2020 and 100 per cent by 2030. The National Energy Policy of Grenada was approved in June 2011 and governmental responsibility for energy lies with the Ministry of Finance, Planning, Economy, Energy and Cooperatives. Grenada has been working closely with the International Renewable Energy Agency (IRENA) and 2012 saw the production of a renewables readiness assessment (IRENA 2012b), which outlines key recommendations to foster the deployment and sustainable use of renewable energy resources in the country. Some of the recommendations include the setting up of an energy regulator and provision for the review of its existing interconnection policy to promote business models that can increase the deployment of renewables.

Through the assessments that have already been carried out, including the SE4ALL rapid assessment and gap analysis in partnership with the World Bank and United Nations (SE4ALL 2014), Grenada has recognised that it must strengthen a number of areas, including its institutional framework; sustainable energy education among technicians and engineers; awareness among the general public; and the provision of reasonably priced funding for sustainable energy investments in the public and private sectors.

Guyana

Guyana does have some fossil fuel reserves; however, these have never been tapped at a commercial level. Imported oil products account for just over half of its primary energy use, with combustion of solid biomass providing much of the remainder. The

state-owned Guyana Power and Light Inc. (GP&L) is the primary transmitter and distributor of electricity, and also generates approximately half of the electricity in the country. The second largest generator is the Guyana Sugar Corporation, which sells its excess electricity to GP&L. National energy statistics are difficult to measure, given that the majority of large and medium-sized firms rely on self-generation of electricity, and that the country's vast hinterland and rural communities are supplied from small-scale private energy companies. There is a stark contrast in terms of electrification rate: first between Guyana and much of the Caribbean, with approximately 60 per cent of the population having access to electricity compared with between 95 and 100 per cent in most other countries (Haiti being the main exception, with just 38.5 per cent); and then within Guyana, with the main coastal populations approaching 90 per cent with access to electricity compared with around 20 per cent in the more remote parts of the country. This low penetration rate lends itself to an expected rise in energy demand in the future.

Guyana's National Low Carbon Development Strategy was approved in May 2010, with responsibility for energy sector development overseen by the Guyana Energy Agency (GEA) (GEA 2015a). Energy sector regulation is controlled by the Public Utilities Commission (PUC).

Guyana has significant hydropower potential, with studies indicating a potential capacity of 4.5GW and with 11 of the 65 sites investigated capable of providing more than 100MW of hydropower. However, no large-scale sites have yet been exploited, with the planned Amaila Falls project remaining under review (GEA 2015b; *The Economist* 2013). Solar is seen to be a viable option to bring cheaper electricity to Guyana's hinterland. However, the wind resource is low in the hinterland and efforts here are focused more on its coastal region.

There are a number of different agencies involved in Guyana's energy policy formulation and execution (REEP 2012).

The government, through the Office of the President, is responsible for the development of energy policy and national planning. Within this structure, the quasi-government agency – the GEA – is tasked with 'ensuring the rational and efficient use of imported petroleum-based energy sources, while encouraging, where economically feasible and environmentally acceptable, increased utilization of indigenous new and renewable sources of energy'. Part of the GEA's mandate is to develop conservation programmes, facilitate greater adoption of renewable energy technologies to reduce greenhouse gas emissions, and reduce the effects of climate change through the creation and adoption of appropriate mitigation measures.

The Office of the President provides guidance in the areas of environment and climate change at the national policy level, while the Office of the Prime Minister (OPM) also has policy-making and regulatory responsibilities. The issuance of licenses to public utilities and independent power producers, approval of developmental and expansion plans, the formulation of standards of service for GP&L, the national electric utility, and the electrification of the hinterland and other rural areas, all fall within the purview of the OPM.

The PUC is the energy regulator and has responsibility for the determination and setting of tariffs, as well as monitoring and enforcement of standards and targets set by the OPM.

Laws that directly impact the functioning of Guyana's energy sector are:

- Hydro-Electric Power Act (1956);
- Guyana Forestry Commission Act (1979);
- Petroleum (Exploration and Production) Act (1986);
- Environmental Protection Act (1996);
- Energy Agency Act (1997);
- Public Utilities Commission Act (1999);
- Electricity Sector Reform Act (1999);
- Energy Sector (Harmonisation) Act (2002).

The existing energy policy outlines the goals for 2004 as:

- providing a stable, reliable and economic supply of energy;
- reducing dependency on imported fuels;
- promoting, where possible, the increased utilisation of domestic resources; and
- ensuring energy is used in an environmentally sound and sustainable manner.

This policy is in need of updating if it is to be in alignment with recent developments in the energy industry, i.e. the economic viability of solar and wind technologies, and other pressing concerns such as energy security and the state of the national economy. The last material changes to the energy policy occurred in 1999, when the Electricity Sector Reform Act was passed.

There is significant overlapping and layering of responsibility among the various government energy agencies. Regulatory functions appear to be fragmented and scattered across several agencies. One example of this is the existence of a pre-determined rate-setting formula in the GP&L licence, as administered by the OPM, and in the Electricity Sector Reform Act, although the PUC is vested with the authority to determine and approve public suppliers' tariffs. Such inefficient use of scarce human and capital resources will invariably lead to ineffective decisions and conflicting practices. Therefore, the PUC and the Guyana Energy Agency do not appear to be afforded the level of autonomy that well-functioning and transparent agencies of this nature require.

Jamaica

The energy sector in Jamaica is overshadowed by the fact that the economic cost of its energy imports exceeds the value of total Jamaican exports. As indicated in Figure 5.1, most of Jamaica's energy needs, about 83 per cent, are imported in the form of

crude oil, coal and oil products. Solid biomass accounts for the remaining 16 per cent of primary energy supply. Hydropower and wind power currently represent 1 per cent of primary energy use.

The bauxite industry is the largest end user of energy, consuming approximately 37 per cent of total energy, followed by the electricity sector, which consumes about 25 per cent of primary energy. The island's transport sector consumes around 20 per cent of its primary energy use, while the sugar industry uses approximately 12 per cent. While the bauxite industry is very energy intensive, it makes a significant contribution to the balance of payments, generating much-needed foreign revenue through exports (IDB 2013c).

The Ministry of Science, Technology, Energy and Mining has overall responsibility for the formulation and review of energy policy, including improvement of national energy efficiency and conservation, and increasing the percentage of electricity generation from renewable sources, thereby reducing dependence on imported fuels and increasing Jamaica's energy security. The Energy Division within the ministry implements policy and monitors the functioning of the energy sector. It works with the Petroleum Corporation of Jamaica (PCJ) and the Jamaica Public Service Company (JPSCo) (Government of Jamaica Ministry of Science, Technology, Energy and Mining 2015). With a generation capacity of 820MW, JPSCo has virtually all of the island's electricity-generating capacity.

Jamaica has wind, biomass and hydro potential, and extensive solar potential. It already has more than ten years of utility-scale wind power experience thanks to the 20MW capacity Wigton Wind Farm (Wigton Wind Farm Ltd 2011). This wind farm was expanded to 38MW in 2010, with another 24MW of capacity due to be installed in the near future. The Wigton Wind Farm project is the only large-scale wind farm in the CARICOM region and provides valuable experience of wind farm development and operation.

Saint Lucia

Saint Lucia has no known petroleum reserves and receives about 98 per cent of its overall energy from imported oil products; the remaining share comes from combustible solid biomass. St. Lucia Electricity Services Limited (LUCELEC) is the sole utility company generating, transmitting and distributing electricity. It holds the sole licence until 2045, with the exception of customer self-generation.

Government oversight of energy lies with the Energy Policy Advisory Committee within the Ministry of Sustainable Development, Energy, Science and Technology. The Saint Lucia National Energy Policy was approved in January 2010. Regulation of the energy sector is currently under review, responsibility for which is with the Ministry of Public Utilities. An independent regulator is in the process of being formed. The policy target for the island is for 30 per cent of its electricity to be generated from renewable sources by 2020.

The island has a good mix of renewable energy, including solar, wind, hydro, biomass and geothermal resources. The geothermal potential, in particular, is said to be high.

Although previous exploration experiences during the 1970s yielded no technical potential, the island is revisiting its prospects for geothermal sources. Other islands, including Dominica, Grenada, Montserrat, St Kitts and Nevis, and St Vincent and the Grenadines, are also exploring their extremely high geothermal potential, which, if successful, could dramatically alter the energy balance of these islands and the region as a whole. With assistance from the European Union, Dominica in particular is making good progress in exploiting its geothermal resource, with exploration wells showing proven capacity and bidding on production plant development expected soon (EU 2015). The possibility of regional grid interconnections to enable renewable energy exports is also being explored (Worldwatch 2012).

Trinidad and Tobago

Trinidad and Tobago's energy sector is dominated by oil and gas production, and the twin island state is among the five largest exporters of LNG in the world. Until the large-scale development of shale gas in the United States, Trinidad and Tobago supplied 60 per cent of American LNG imports. Today natural gas accounts for almost 90 per cent of the country's energy sector. The largest companies operating in the sector are BP Trinidad and Tobago, British Gas and EOG Resources Trinidad. Together they account for about 95 per cent of production. The majority of gas production, 57 per cent, is exported in the form of LNG, with much of the rest used domestically in the petrochemical industry (28 per cent). The electricity sector accounts for only 8 per cent of its natural gas production.

In addition to natural gas, Trinidad and Tobago produces approximately 80,000 barrels of oil per day (2012) of which 20 per cent is consumed domestically, inclusive of the transportation sector.

Through the development of its petrochemical sector (it is the world's leading exporter of ammonia and methanol), Trinidad and Tobago has shown an ability to diversify its oil and gas sector. However, the non-energy sector is relatively underdeveloped, attracting little investment, and is heavily dependent on government subsidies and transfers. Compared with other Caribbean nations, Trinidad's tourism and agriculture sectors are small. Oil and gas reserves are currently predicted to run out between 2025 and 2030, and so there is a growing sense of urgency to diversify its economic sector.

Trinidad and Tobago Electricity Commission is the state-owned utility company and dominates the electricity sector. It is responsible for operation and maintenance of all of the country's transmission and distribution lines, and is also the sole power generator on the island of Tobago. Total generation capacity stands at 1,761MW (IDB 2013d).

The Ministry of Energy and Energy Affairs and the Ministry of Public Utilities have oversight of the country's energy production and generation. There is no existing national renewable energy plan; however, the 'Framework for Development of a Renewable Energy Policy for Trinidad and Tobago' has been in draft since 2011. The country has a 2011 National Climate Change Policy that speaks to 5 per cent of peak demand being generated from renewable energy by 2020. The Regulated Industries Commission is the independent regulator of the electricity sector.

Energy in Trinidad and Tobago is highly subsidised, and this has resulted in the lowest diesel fuel prices, and commercial and industrial electricity prices, in most of the Americas. The island has promising wind, solar and bioenergy potential; however, given the extremely low cost of conventional energy, renewable energy is placed at a competitive disadvantage (T&T MoE 2014).

5.3 Scan of external environment determining emerging trends and risks

Given the fact that modern renewable energy technologies (excluding combustion of solid biomass) currently make up just 0.09 per cent of the primary energy share of the selected countries, and that all of these technologies are already economically feasible in many parts of the Caribbean, there is no shortage of a market for their use. This section provides an assessment of the various sustainable energy technologies that have potential for deployment in the Caribbean region, and discusses emerging trends and risks for their use, from both an international and a regional perspective. It also examines potential game changers, such as advancements in energy storage (battery technology) and energy generation (e.g. marine energy/solar PV/floating wind turbines).

5.3.1 Energy efficiency and energy conservation

In tandem with renewable energy technologies, energy efficiency and energy conservation measures can be deployed across all economic sectors to reduce energy demand, and are often both the cheapest and the fastest way to lessen the economic, social and environmental costs of energy. It is for this reason that energy efficiency and conservation are discussed first.

Energy efficiency is crucial because of its compounding effects: when a user demands one less unit of energy because of efficiency measures, the system typically saves much more than one unit of produced energy, because of avoided losses during generation, transmission and distribution. As a result, efficiency improvements can amplify the benefits of developing utility-scale renewable energy by increasing the impact of added renewable power capacity.

Opportunities for efficiency measures at the building and household level should be harnessed for energy and cost savings. Buildings themselves can be made significantly more efficient through proper insulation, white roofing and smart architecture/landscaping. In-home products such as household appliances continue to consume comparatively large volumes of electricity. Their inefficiency is exacerbated in the Caribbean by the prevalence of outdated equipment and a lack of strong efficiency standards for new appliances, although progress is being made across the Caribbean thanks to work by the CARICOM Regional Organisation for Standards and Quality (CROSQ 2015) and the OAS (2015) and, for example, with the formation of the Barbados Energy Performance Label by the Barbados National Standards Institute (BNSI 2015). As regional economic development increases, the corresponding growth in energy demand from electrical appliances and other household products, such as air conditioning systems, will need to be managed through efficiency standards.

Economic sectors that should be targeted for energy efficiency measures and technologies are those that (1) account for a large share of a member state's energy consumption; (2) are highly energy intensive or inefficient; or (3) are priority components central to the national economy. Across the CARICOM region, such sectors include electricity generation, electricity transmission, hotels and tourism, mining, the residential sector and government. Energy efficiency in the transport sector must also be addressed through specifically targeted measures that differ from those that can be deployed in other sectors. The transport sector is responsible for between one-third and one-half of fossil fuel use throughout the Caribbean, and there are a number of policy initiatives that could be explored in order to encourage more efficient use of fuel in this sector. These include the introduction and enforcement of stricter tailpipe emission targets, better traffic management initiatives to reduce congestion at peak hours, support for the introduction of electric vehicles (reduction/removal of import duties and road tax and investment in support infrastructure) and overhaul of public transport sector.

5.3.2 Solar

Thanks to their location and climatic conditions, countries throughout the Caribbean possess excellent solar energy potential and opportunities to use various solar technologies for power generation, heating and cooling. For example, a solar PV system can expect to yield twice the amount of electricity that a similar system installed in Germany would generate, yet Germany has the world's highest installed solar PV rate per capita.

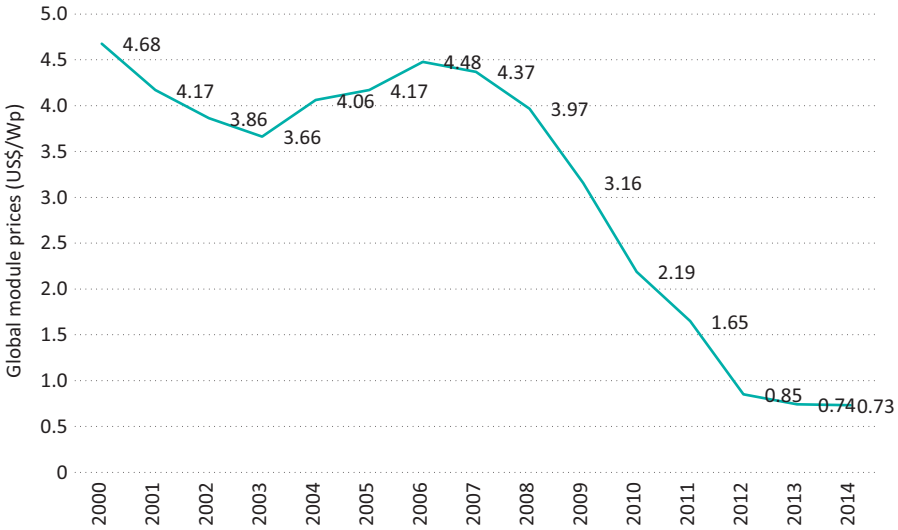
The cost of solar PV has fallen significantly in recent years (see Figure 5.3), making solar PV cost-competitive with fossil fuels for many Caribbean islands. The Fraunhofer study on the current and future cost of solar PV predicts that:

> *Solar power will soon be the cheapest form of electricity in many regions of the world. Even in conservative scenarios and assuming no major technological breakthroughs, an end to cost reduction is not in sight. Depending on annual sunshine, power cost of 4–6 US¢/kWh are expected by 2025, reaching 2–4 US¢/kWh by 2050 (conservative estimate).*
>
> (Fraunhofer 2015, 5)

Grid parity occurs when an alternative energy source can generate power at a levelised cost of electricity (LCOE) that is equal to or less than the price of purchasing power from the electricity grid. Essentially, grid parity for solar PV use in much of the Caribbean has been reached and prices are predicted to decrease well below grid parity in the coming years. This has been recognised by Caribbean utility companies. For example, BL&P is finalising plans for the installation of 8MW of centralised solar PV by early 2016.

With the growing interest in solar PV, the use of solar thermal technologies for hot water heating should not be forgotten. The solar water heating industry has experienced success in many parts of the Caribbean, in particular Barbados, where Barbadians have been saving millions of dollars annually by using locally manufactured systems.

Figure 5.3 Global solar PV module prices 2000–2014



Source: pvXchange 2014

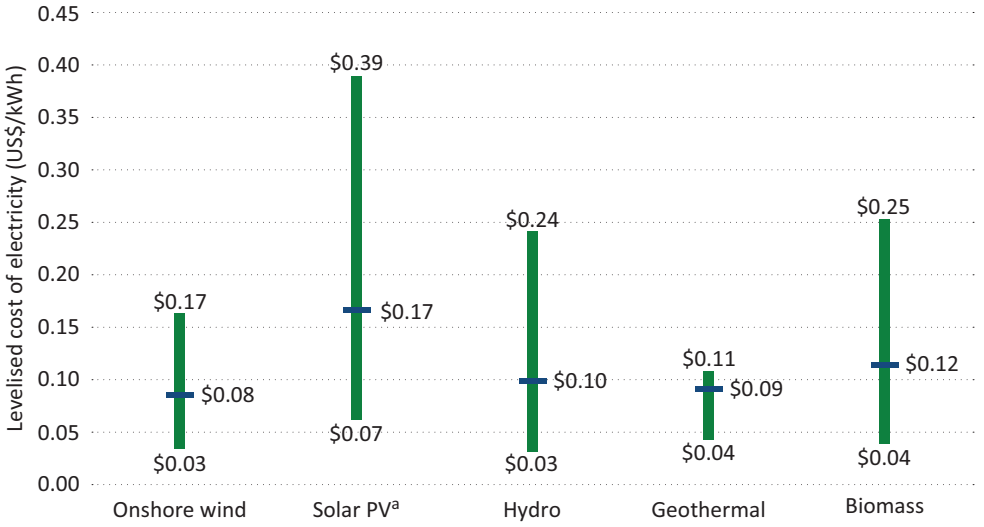
Solar thermal is often the most cost-effective option for providing process heat/cooling in the tourism and agro-processing sectors, but is not often explored.

5.3.3 Wind

The wind resource on exposed Atlantic coastlines across the Caribbean is comparable with the very best offshore locations in Europe. There is strong potential for development of this vastly under utilised resource. Many experts consider wind the most viable renewable energy technology for rapid expansion in the region over the next two decades (Caribbean Renewable Energy Development Programme and Deutsche Gesellschaft für Internationale Zusammenarbeit 2011). The main reason for this is that, resources permitting, it is one of the cheapest options ($0.08/kWh) for electricity generation worldwide (see Figure 5.4), even when compared with traditional technologies such as combined cycle gas turbines ($0.09/kWh), coal ($0.10/kWh) and nuclear ($0.09/kWh). Currently, however, few CARICOM countries have developed utility-scale wind infrastructure. The exceptions are Jamaica, which now has more than 40MW of installed wind capacity (see Jamaica section), and St Kitts and Nevis, which has 2MW installed.

Given that many Caribbean islands have a high population density, the possibility of offshore wind has been raised. However, steep drop-offs within a relatively short distance from the shore means that offshore wind will probably be limited to offshore floating wind turbines, as the capital cost of seabed-anchored turbines is prohibitive. These turbines are currently in their prototype stage in European and North American markets, and are not expected to be available to the Caribbean market for some 10 to 15 years. During this time, onshore wind turbines could have saved the region extensive amounts of foreign exchange.

Figure 5.4 Typical levelised costs of electricity ranges and weighted averages by technology for Central America and the Caribbean



***Note:** Revised for Caribbean from GTM Research 2015
Source: IRENA 2014

Financial and regulatory environments will be key to reducing costs in the future. The cost of hardware sourced from global markets will decrease irrespective of local conditions. However, inadequate regulatory regimes may increase the cost of power by up to 50 per cent through the higher cost of finance. This may even overshadow the effect of better local wind resources.

5.3.4 Hydro

Large hydropower comprises the majority of currently available renewable power generation within CARICOM. However, most sites on the region's islands have already been developed (perhaps with the exception of Haiti). This means that future development of large-scale hydropower facilities will be focused on mainland countries, such as the 165MW Amalia Falls project in Guyana (IDB 2010). Although large-scale hydropower is location specific (mainly Guyana and Suriname), it does have substantial potential, presenting opportunities to broaden and interconnect regional energy markets.

Small hydro plants, typically classified as generating less than 10MW of electricity, have significant environmental and social advantages over large-scale hydro, but development feasibility (especially for run-of-the-river systems) requires specific site characteristics that preclude its use in several small-island CARICOM member states. Elsewhere, the potential for small, sustainable hydro deployment is significant, particularly for providing electricity access to remote, currently underserviced populations, e.g. in the hinterland of mainland countries, as well as Haiti (Worldwatch 2012).

5.3.5 Modern biomass (including bagasse and biogas)

Biomass has a significant advantage over other renewable energy resources in that it is easily storable. Belize is a regional leader in the use of bioenergy as a base load energy source. Many CARICOM member states, particularly those on the mainland and the larger island states, have good biomass potential. Waste-to-energy technologies are considered to be thermal power plants in that they raise steam to drive a turbine, which then drives an electrical generator. These types of plants can have characteristics that make it difficult for them to respond to variable changes in a utilities power curve – for example, if there are large numbers of intermittent power plants such as wind and solar. Thermal power plants also have environmental and social side effects that could lower their suitability for modern energy systems. Waste-to-energy technologies have drawn some attention throughout the region for their ability to solve the waste disposal problem. Their viability is restricted in those states with limited waste collection capacity or comparatively small populations, as these states do not generate the volumes of waste necessary to make waste-to-energy plants economically viable. What should also be considered when discussing waste-to-energy is the potential assistance it can offer local agriculture sectors. Sugarcane farmers across the region have been suffering in recent times, given the low price of sugar on the international market. The possibility of growing high-fibre sugarcane as an energy crop holds some attraction to the agriculture sector.

Other forms of modern biomass include biodigesters, which anaerobically digest organic matter – the output, after some gas scrubbing, being gaseous biomethane and a valuable fertiliser. Biodigesters have been used for decades in many parts of the world and offer a way of effectively treating animal and human sewage, as well as waste from the agro-processing industry (breweries and distilleries). Energy crops, such as napier grass and sugarcane, can also be used, offering a cleaner alternative to cogeneration that ensures the vital nutrients are returned to the ground rather than being combusted.

5.3.6 Geothermal

Many CARICOM member states, particularly the islands making up the volcanic arc of the Lesser Antilles, have significant untapped geothermal resources. Development of this resource in Dominica, Grenada, Montserrat, Nevis, Saint Lucia and St Vincent and the Grenadines is currently being explored and could dramatically alter the energy balance of these islands – and even the Caribbean as a whole if regional grid interconnections are developed to enable renewable energy exports. Currently, no CARICOM state has developed geothermal power (Guadeloupe has operated geothermal plants since 1986 – now up to 15MW, with plans for more capacity). The downside to geothermal (see Figure 5.4) is that exploration of suitable resources has some degree of financial risk. Nevertheless, given the potential cheap levelised cost of electricity, exploratory drilling and preliminary investigations are under way in several islands.

5.3.7 Marine energy

Energy technologies including wave, seawater air conditioning and OTEC have been identified as a priority area under the Small Island Developing States Sustainable Energy

Initiative (SIDS DOCK). These technologies offer significant potential throughout the region, presenting opportunities including electrical power generation and centralised cooling (for hotels, business districts and cold-water agriculture). However, marine energy technologies remain in the developmental phase and still have prohibitively high costs that limit their deployment in the short term. CARICOM member states are currently taking steps to advance pilot projects for OTEC, although the technology's long-term potential in the region is restricted by factors including uncertain technology development and project scale. An OTEC pilot project is currently under way on the island of Martinique, with plans for a 10.7MW floating OTEC plant. Elsewhere, Barbados is set to explore its resource potential for several marine energy technologies including wave, offshore wind and OTEC.

5.3.8 Cost for utility-scale new generation

The cost of renewable energy technologies has dropped in recent years, with most of the technologies passing grid parity – assuming appropriate resource potential. Figure 5.4 shows the levelised cost of energy (the total lifetime costs incurred by a power plant divided by the amount of energy it is expected to produce) for different types of renewable energy technologies. Except in the case of solar PV, the data is for Central America and the Caribbean combined; however, it does give an idea of the economic viability of all renewable energy resources for the entire Caribbean. The fact that the total lifetime costs incurred by any renewable energy technology might be expected to be higher for Caribbean islands would probably be balanced by the fact that the resource is so much better than in other parts of the world (especially for wind and solar).

5.3.9 Importance of storage

Grid and storage solutions have strong potential to transform CARICOM's existing energy sector. Across the region, existing grid infrastructure is largely out of date and often insufficient to meet the population's current and growing energy needs. This is evidenced by the region's high technical losses and, in select member states, a lack of reliable electricity access.

Without further development, existing grid networks will be unable to successfully address the technical challenges associated with the increased share of renewable energy envisioned by CARICOM and its member states. New grid infrastructure will be necessary to manage variability and to integrate complementary renewable energy sources into transmission and distribution networks to supply reliable power. 'Smart grid' advancements have the potential to manage demand by shifting loads to off-peak hours and by better utilising domestic renewable energy resources. At the household level, the deployment of smart meters, combined with appropriate policy mechanisms, would allow customers to generate their own renewable power and sell excess electricity back to the grid.

Electricity storage has the potential to play an increasingly important role, as greater shares of variable renewables are integrated into grid networks. Storage solutions are currently being assessed in a number of member states including Antigua and

Barbuda, where policy-makers are looking into pumped storage hydropower as a component of wind development.

The development of inter country infrastructure to enable some degree of electrical integration and/or regional energy trade could be a potential game changer for CARICOM's power sector. Already, some CARICOM member states use submarine interconnection cables to link individual islands, and a number of preliminary studies have been conducted that together confirm the feasibility and assess the implications of electricity interconnection in various parts of the Caribbean.

5.4 Analysis of key challenges

The Caribbean is currently standing on the threshold of a new energy future, one that can bring energy independence, higher-skilled jobs, clean water and air, liveable cities and improved health, and also help in the global push to avert the worst impacts of climate change. High existing energy costs and excellent renewable energy resources provide an opportunity for the region to quickly become an example to the rest of the world. Renewable energy technologies are now economically viable across much of the region, and momentum is gathering in the push to make use of them. However, there are a number of hurdles still to be negotiated. This section provides feedback from a survey of key regional energy stakeholders including governments, development partners, universities, utilities and businesses. A total of 31 stakeholders responded to the survey, all with substantial experience within their sector. We first present the thoughts of these stakeholders regarding the predicted and possible energy mix in 2050, before discussing perceived barriers to a transition towards sustainable energy systems.

5.4.1 View of the Caribbean energy sector in 2050 by regional stakeholders

The survey carried out for this work was seen as an opportunity to poll regional energy stakeholders on their views regarding the predicted energy mix of the Caribbean energy sector in 2050 versus what they feel could be possible.

Figure 5.5 reveals the difference between these two alternative scenarios, with experts appearing confident of a cleaner, more sustainable energy landscape than is predicted. Figures 5.6 and 5.7 breakdown the predicted and possible energy share by sector, and reveal that opinion is often divided among the stakeholders as to which technologies will prevail. In fact, even among survey participants from within each sector, opinions on technology choice varied quite substantially – some experts predict that geothermal will form a substantial share of the energy mix, while others opt for OTEC, wind energy or natural gas. The one technology almost all stakeholders agree will play a significant role is solar PV. The reason for the uncertainty between the different technologies is the thinking that a non-intermittent, dispatchable source of energy will be needed to provide power when the wind is not blowing or the sun is not shining (either from some form of fuel or from energy storage).

Respondents were generally hesitant to ascribe percentage compositions of the various technologies for a future energy mix. What was clear, however, was that

Figure 5.5 Predicted and possible energy sector breakdown in 2050 according to Caribbean energy sector actors

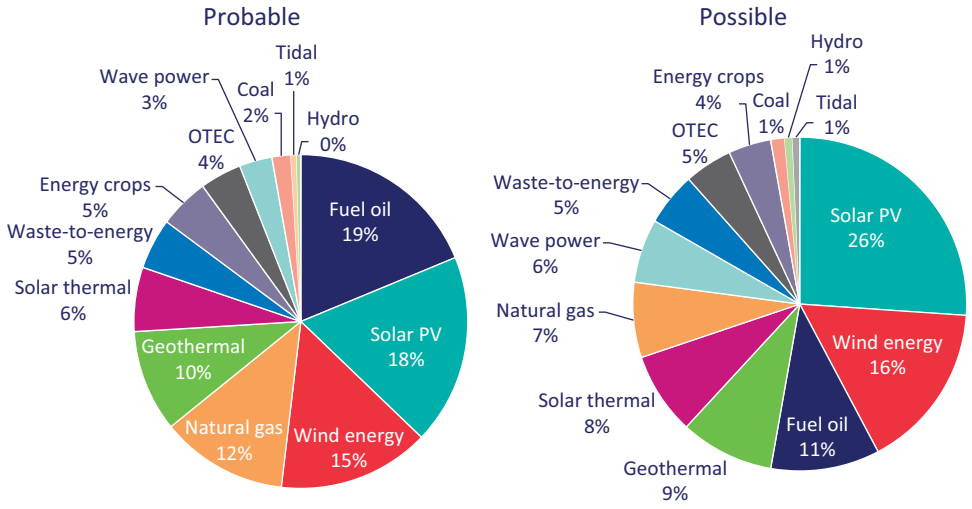


Figure 5.6 Probable energy sector breakdown in 2050 according to different Caribbean energy sector actors

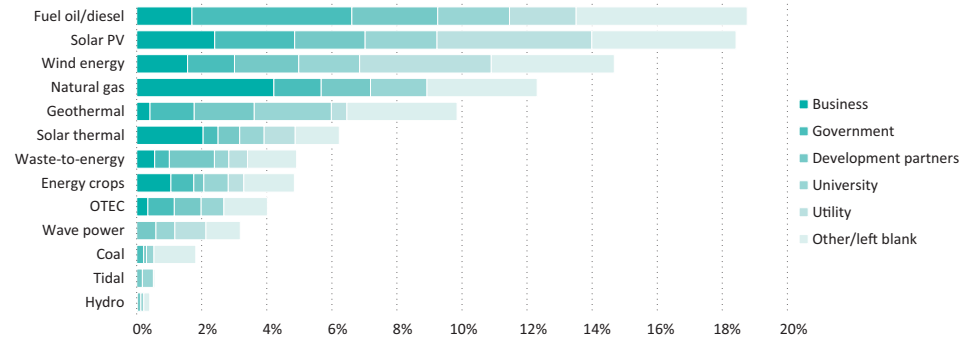
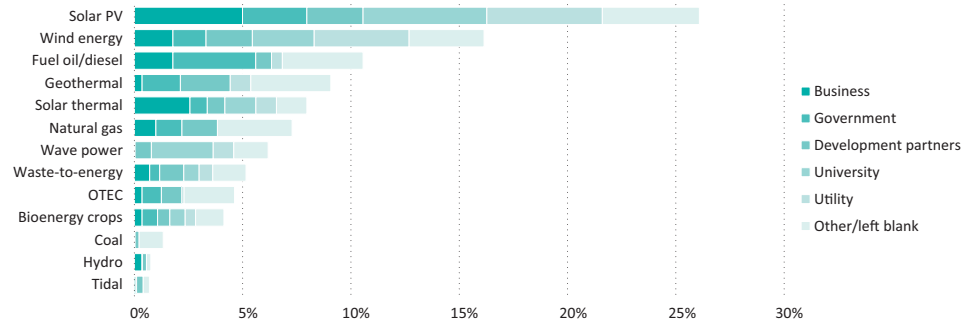


Figure 5.7 Possible energy sector breakdown in 2050 according to different Caribbean energy sector actors



all territories envisage a significant role for wind, solar PV and waste-to-energy. Comparatively, the waste-to-energy capacity is envisioned to be considerably less than that for wind and solar PV, the notable exception being Barbados. The Government of Barbados has entered into an agreement with Cahill Energy to develop a 40MW waste-to-energy plasma gasification plant by 2018.

Respondents from territories with geothermal resources (Grenada and Saint Lucia) suggested that by 2050 they would expect, both in their personal view and in reality, to have at least 60 per cent of the country's energy requirements being provided by geothermal sources. There was also the suggestion that, as is the plan for Dominica, neighbouring islands could benefit from interconnection of the geothermal output.

OTEC and tidal power were generally considered to be emerging technologies and, although they may appear technically feasible for the Caribbean, they still need to be proved commercially, so it is not expected that their uptake will be significant in the short-to-mid term.

5.4.2 Stakeholder analysis

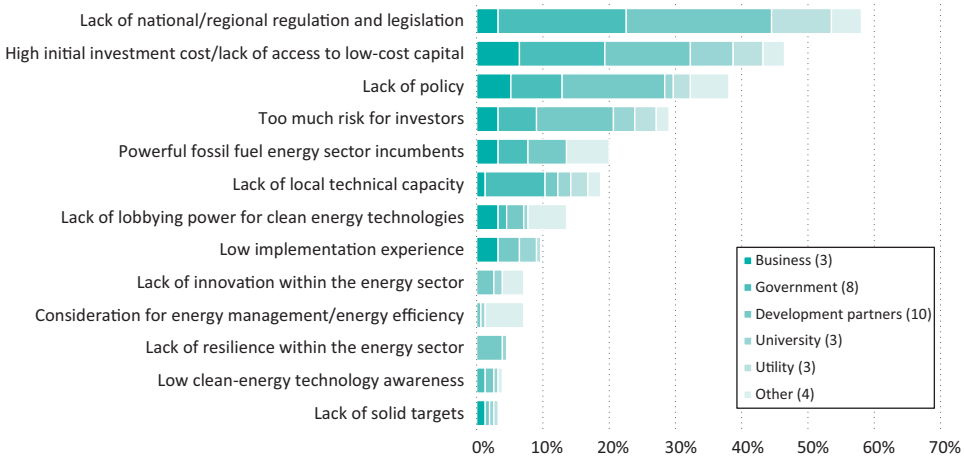
Most interview respondents found some difficulty in assigning a scaled impact to the various stakeholders; however, they unanimously considered the government and the incumbent utility to be the primary stakeholders and agreed that the government should be the principal proponent of a country's transition to a sustainable renewable energy sector. Other stakeholders believed to have significant impact on the development of sustainable energy are consumer bodies and associations, the utility regulator, and regional developmental bodies such as the Caribbean Development Bank and CARICOM. The local and international private sectors were also considered to be integral stakeholders.

The general public, academia, environmental agencies and standards institutions were identified as groups that needed to be encouraged to play a more active and strategic role in the development of a sustainable energy sector. It is thought that energy sector innovation may be best achieved through synergies between academia and the local private sector (finance institutions and entrepreneurs) – see, for example, the EU-funded CAP4INNO project (CAP4INNO 2013).

5.4.3 Perceived barriers to sustainable energy systems

Figure 5.8 lists the perceived barriers to sustainable energy systems, and the opinions of those surveyed as to which barriers require the most attention. A lack of national/regional regulation and legislation is noted as being a clear impediment to future energy sector development. None of the target countries have clear regulation or legislation for renewable energy technologies (as seen earlier in Table 5.3). It is apparent that a lot of the listed barriers are related: a lack of legislation and regulation, as well as no clear, definitive and unambiguous national energy policy, means that initial investment cost is high and the risk to the investor is great. It is telling that government stakeholders acknowledged a lack of local technical capacity and,

Figure 5.8 Perceived barriers for transition to a sustainable energy system from regional energy stakeholders



given that expertise in energy divisions around the region is stretched, this barrier connects directly to the lack of policy and regulation. Development partners noted that there is development funding available to de-risk and provide help for upfront costs (grants, concessional loans etc.) (CDB 2013). Political leadership and a lack of qualified energy experts in energy units and institutions in the region are seen to be major impediments to effectively accessing this funding. The results of this part of the survey mirror those of a similar survey conducted in April 2014 by the Reiner Lemoine Institut (Energypedia 2014).

A notable result of this part of the survey was the impact that powerful fossil fuel incumbents have on the energy sector, with respondents observing that 'Along with powerful fossil fuel energy sector incumbents [there] is a lack of transparency, and in some cases outright corruption in government' and 'A significant risk comes from the lack of real political leadership and the willingness to organize systematic and transparent processes that produce optimal outcomes'.

5.4.4 Vulnerability of energy infrastructure

Scientists have predicted that by 2100 an additional 20–60cm rise in sea level could be realised, depending on the world's actualised emissions trajectory and the interplay of thermal expansion and glacier ice dynamics (UNEP/GRID-Arendal 2007).

In any particular coastal region, as the Caribbean can be described, sea-level rise is governed not only by the dynamics of the global ocean, but also by the particular physical forces at work in that region itself.

Even without changes in frequency or intensity of storms, rising sea levels will lead to greater storm surges, and therefore greater risk to existing infrastructure (including saltwater poisoning of agricultural land). Scientific assessments from the US Global Change Research Program suggest that tropical storm intensity, not frequency, is likely to increase over the coming decades (USGCRP 2010).

The other major component of the potential impacts of sea-level rise and climate variability and change on energy infrastructure is the intrinsic vulnerability of the existing infrastructure. Infrastructure that is often situated in coastal areas is invariably vulnerable to storms, erosion, temperature extremes and other aspects of the physical climate system. Some of this vulnerability comes simply from location. The Caribbean islands as a whole, because of their size, can be considered coastal, and in many instances energy-generation infrastructure is located along sheltered western coastlines, with the transmission and distribution networks being predominantly overhead. These are clearly vulnerable to the effects of tropical storms and the rising sea level of the Atlantic Ocean and the Caribbean Sea.

Many Caribbean electric utility operators recognise this, and have operational policies in place to address such stressors. The immense difficulty in projecting climate variability and sea-level rise on a regional scale makes the choice of additional mitigation procedures that much more complex.

Burkett (2011) identifies six primary drivers of vulnerability for coastal energy infrastructure:

- increased ocean and atmospheric temperature;
- changes in precipitation pattern and runoff;
- sea-level rise;
- more intense storms;
- changes in wave regimes; and
- increased dissolved CO_2 and ocean acidity.

This list of physical drivers of vulnerability recognises that changes in the ocean environment, the near-shore terrestrial environment and the climate system itself have potentially important implications for energy infrastructure. The delivery of energy services is a multisectoral phenomenon, and thus considerations of the linked vulnerabilities of major infrastructures should be part of an analysis of potential adaptation options.

5.4.5 Challenges to the utilities

Utilities around the region have a number of challenges to their future operation. One of the biggest challenges is that some utilities are facing declining loads. Owing to the economic downturn and more wealthy customers opting to switch to self-generation energy options (including solar PV systems with battery), some utilities have found that their annual energy production has declined year on year – in some cases for the first time ever. A majority of this is from customers connecting small, distributed renewable energy systems (predominantly solar PV) to the grid. In Barbados, the connection of 7.5MW of solar PV to the BL&P grid has meant a 1.5 per cent decline in production of electricity from traditional fossil fuel sources since 2010. This alone has little impact on BL&P's revenue, as the electricity generated from solar PV offsets the avoided cost of fossil fuel generation.

However, the worldwide drop in solar module prices and batteries has allowed those customers who can afford it to disconnect completely from the utility grid – a phenomenon known as 'grid defection' (RMI 2014). This is of more concern to utilities, as these are normally their larger customers, and raises the threat of their utility grid becoming fractured.

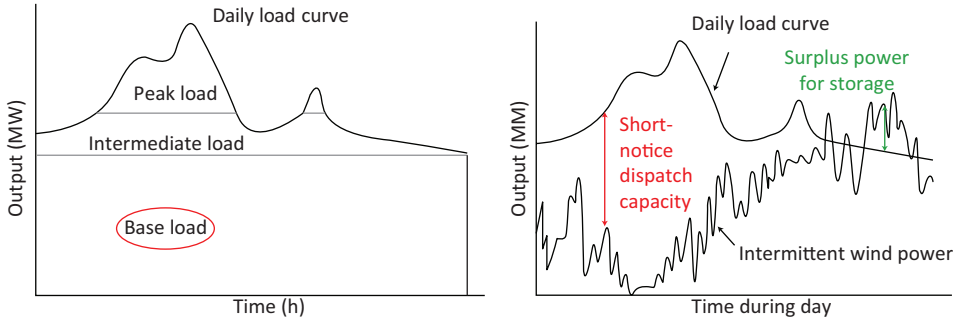
Intermittent renewable energy sources such as wind and solar are plentiful, and wind turbines and solar PV systems are two of the cheapest forms of renewable energy generation available today. However, they are intermittent in nature, meaning that they will have to fit within energy systems designed for base load operation, with peaking demand to meet the daily load curve (see Figure 5.9). In order to achieve this, some form of energy storage, or power plant with short-notice dispatch capacity, will be required. Most islands in the Caribbean use low-speed generators, which are able to provide short-notice dispatch; however, storage, such as batteries or hydro-pump storage would be a new addition to their infrastructure. This would require careful examination of existing infrastructure and the creation of completely new control strategies, able to balance the load demand of their customers with the varying power provided by wind and solar sources. In Barbados, BL&P has taken the first step towards higher penetration of renewables with the publication of its integrated resource plan in 2012 (BL&P 2012) and, more recently, the publication of its wind and solar integration study (Emera 2015).

Other challenges to regional utilities include low implementation experience in renewable energy technologies, the risk of stranded assets (whereby assets become obsolete before their lifetime) and unclear signals from governments with regard to energy policy and the regulatory/legislation environment, as evidenced by the utility responses to the survey performed for this study (see Figure 5.8).

5.4.6 Challenges to governments

To date, all 15 CARICOM member states have adopted a national energy policy or have a document in advanced stages of development. National policy-makers across the region have set domestic targets to promote renewable energy use. Many member

Figure 5.9 Tradition power plant operation (left), and power plant operation with intermittent power source (right)



Source: Hohmeyer 2014

states have already taken the lead in developing and implementing domestic policy mechanisms to support an increase in renewable energy and energy efficiency. At the regional level, policy-makers have jointly established net billing as the appropriate minimum standard for policy support across CARICOM. Despite these important initial steps, sustainable energy development across the region continues to be limited by policy and data gaps, administrative ineffectiveness, and often inefficient and unco-ordinated implementation efforts (Worldwatch 2012).

As documented in the C-SERMS report, one of the biggest challenges to Caribbean governments is the often significant lack of capacity dedicated exclusively to sustainable energy issues. Energy units are ill equipped to tackle the substantial problem of converting traditional island energy systems to sustainable energy systems. Human capacity, small budgets, limited staff and diverse responsibilities all hinder progress. Energy units focused on renewable energy are often further burdened by a severe lack of consistent leadership and insufficient political will by the changing political directorate. Often, overlapping/opposing mandates and varying priorities among different government agencies and institutions lead to duplication, inefficiencies and unclear strategies. This challenge could be extended regionally. There are significant advantages to a regional approach, both in the sharing of knowledge and experience, and in terms of combined purchasing power. This is one of the reasons why the CARICOM energy policy and C-SERMS initiative are critical to future development of the sector (Worldwatch 2012).

The collection of energy sector statistics is often lacking within government organisations, leading to an inability to monitor progress or appreciate the level of energy sector issues – 'you can't manage what you don't measure'.[2]

5.4.7 Challenges to the investors

Investors interested in the Caribbean face a number of challenges. First, even though resources are substantial and expected LCOEs on different renewables are attractive, investor risk can be high given the lack of firm policy direction, regulation and legislation. With expected system lifetimes for most renewable energy technologies extending over 20 years, investors will be inclined to invest only in a stable market. Currently, guaranteed return on investment is not strong – this requires firm policy initiatives and stable price structuring.

There is often some uncertainty as to the extent of renewable resources of Caribbean countries, as in the case of the wind energy sector, where planning guidelines are limited by overburdened, under trained planning departments; knowledge of interconnection issues is low; electricity acts do not speak to the needs of independent power producers (IPPs); and wind resource maps are non-existent or at low resolution. A specific database/brochure for potential investors detailing technology options, costs and performance characteristics of typical renewable energy systems would be of help to potential investors.

Renewable energy proponents are often up against fossil fuel incumbents who, over many years, have accumulated knowledge of the inner workings of a country's,

and the region's, energy sector. Renewable energy investors are often left frustrated by their severe lack of lobbying power. Industry associations are beginning to emerge, such as BREA, which provides a much-needed industry voice to the many development issues of the energy sector and, along with the local UWI campus, helps to raise awareness among different government institutions, industrial bodies and the general public.

5.4.8 Challenges to the regional renewable energy sector as a whole

One of the key challenges to the region is the low consideration given to energy management and energy efficiency; yet this is simplest way to reduce national energy import bills. This challenge stems from the general low level of energy awareness among Caribbean populations. Many companies and institutions are under informed as to the potential for energy reduction and potential cost savings from first pursuing energy management and energy efficiency options, and of the impact that distributed renewable energy can ultimately have on their lives.

Local investment is imperative if the Caribbean is to install utility-scale wind energy – one of the cheapest, if not the cheapest, forms of any new generation technology worldwide. The transition towards a clean, sustainable energy sector offers a chance for nations to reclaim their energy systems through citizen/co-operative ownership of large-scale renewable energy plants. This model has been shown to create a more harmonious relationship between renewable energy operators and their surrounding neighbours. The experience in northern Germany is a prime example of this, where farmers are provided with an additional revenue stream, allowing them to maintain and improve the countryside. A local stake in such projects often translates to fewer planning issues for wind projects.

5.5 Key recommendations

The following recommendations emerged from interviews and survey responses from Caribbean energy stakeholders. They outline the key recommendations for different areas of the Caribbean energy sector. In addition, Hohmeyer (2014) provides insights into the immediate recommendations for a transition towards a clean Barbados energy sector, which are applicable to the wider region.

5.5.1 Governance

- **Multilevel ownership:** Greater local intra- and extra-governmental, and regional, co-ordination and co-operation. At the national level, there is scope for a mechanism for co-ordination of efforts in the renewable energy/sustainable energy arena; otherwise the approach will continue to appear disjointed and duplicative. Such a mechanism, particularly at the local level, will also minimise wastage in terms of capital and human resources. At the regional level, there needs to be a mechanism in place to facilitate the sharing of experience and best practice. There is also room for standards development at the regional level, a process currently being led by CROSQ (2015).

- **Commitment to a vision:** Energy visions need to be condensed into singular national plans that all stakeholders align with and take ownership of – *develop a plan, and then seek funding.*
- **Institutional strengthening:** In many instances, dedicated autonomous energy units are not the norm. Dedicated energy units tasked with informing and implementing energy policy are necessary. These units must be adequately staffed and empowered with supporting legislation and regulations.
- **Policy and legislation:** Many of the countries studied (with the exception of Barbados) have approved energy policies, but no proclaimed revised legislation. Antiquated legislation, which often speaks to one generation, transmission and distribution utility and has no provisions for IPPs and renewable energy advancement, is therefore still in effect in many territories. In many cases, revised policies and legislation are in the works, but have been 'in train' for some time. Such conditions do not augur well for investor confidence and increase risks, thereby increasing the cost of capital. Sustainable energy policies and legislation need to be articulated and enacted.
- **Strengthen or establish independent regulatory frameworks**: In some jurisdictions, such as Grenada, no independent regulatory body exists, while in others regulatory authorities need strengthening (Guyana). Where there is no regulator, the utility is often found to be self-regulating or controlled to some extent by government policy.

5.5.2 Development approach

- **Community involvement:** There is a need to involve as many citizens as possible in the planning and development of renewable energy, in order to spread the idea as widely as possible (i.e. explore the use of a community-investment model).
- **Involvement of all stakeholders from the early stages:** The experience of Dominica in its exploration of geothermal shows that it is crucial to involve all interested parties in the various development stages of large-scale renewable energy installations. Businesses and local residents will be naturally wary of new, unfamiliar technologies and, if they are kept under informed, then unsubstantiated and often false opinions may form (Dominican News Online 2015).
- **Ensuring a holistic developmental approach:** Resist fragmented funding of individual projects and seek to create an approach to RE development that first establishes the foundation elements to support a viable and sustainable RE sector. Investment at this stage, particularly from international donor agencies, should be focused on creating an enabling environment. There is a need to manage the enthusiasm of donor agencies to ensure that the mid- to long-term needs of recipient countries are adequately met.
- **Capacity building:** Capacity building is an area that requires particular attention. The local workforce must be empowered with the skill sets to take a project from conception to implementation. Technical, project management, project review and assessment, and negotiation skill sets are all required.

- **Ensuring exemplary project completion:** Mechanisms for improving execution and implementation of projects. Mechanisms for achievement of targets. There is a need to demonstrate the positive impacts of RE to gain greater buy-in.
- **Knowledge sharing:** Creation of a regional energy network that facilitates the sharing of knowledge, and of specific information about experience, successes and challenges. This can be used to inform policy and support successful implementation. Offer experience insight.

5.5.3 Technical considerations

- **Emphasis on a quality energy system:** Ensure that only high-quality products are installed in order to have a well-functioning and reliable power supply system.
- **Advocacy of 'demand side management'**: Citizens needs to be empowered with the knowledge and practical tools to take control of their consumption. This requires programmes that target behavioural and equipment specification modifications. Interruptible service riders, time-of-use rates and energy efficiency education are some of the tools that may be considered. There is a real need to educate the population about the individual's role in sustainable development, renewable energy and energy efficiency.
- **Smart grids:** Used primarily to enable better generation control. These will also help optimise the amount of variable energy sourced from wind and solar – the most widely available renewable energy resources in the Caribbean – which can be safely and reliably accommodated on the grid.
- **Electric vehicles**: The transport sector is responsible for between one-third and one-half of fossil fuel use throughout the Caribbean. Support policies and regulations should also be focused on this often-forgotten sector. The transition of transport sectors toward the use of electric vehicles will become of increasing importance as renewable energy penetration levels rise across the Caribbean.
- **Appreciation of energy use:** The public should be encouraged to understand and appreciate the true cost of electricity, particularly in jurisdictions where it is subsidised – such as The Bahamas and Trinidad and Tobago. The development of such awareness is expected to affect consumption patterns.
- **The construction sector:** Energy efficiency planning requirements for new buildings and energy efficiency standards for imported appliances and equipment should be developed.
- **Independent advice:** Secure, experienced, independent scientific and technical advice is needed for the entire transition process, in order to be independent of information from the power and oil companies, which might have vested interests not always coinciding with the long-term interest of the region.
- **Resource assessment:** Resource assessment data is needed for the various territories, e.g. between one and two years of wind resource data. This would encourage the conceptualisation of wind projects, as onshore wind has already reached grid parity.

- **Grid reinforcing:** There should be greater promotion of the use of automatic generation control at the grid level and less at the project level. This would be more financially prudent, as such costs would be incurred fewer times and would be spread across a wider customer base.

- **RE penetration studies**: Each grid is different; therefore, an approach based on best practice in dissimilar jurisdictions will not be appropriate. There is a need to ascertain the specific nuances of each island's grid and assess its ability to accommodate variable renewable energy with, and without, mitigation measures. Grid stability and reliability must not be compromised.

- **Stranded assets:** The facilitation of RE development through regulatory frameworks must be considered within the context of addressing the issue of potential stranded assets.

- **Importance of wind and solar:** Wind and solar, although variable in nature, represent the most significant potential for the collective and ubiquitous transformation of the electricity, and by extension the energy, sectors of the Caribbean. On average the region records insolation rates within the range of 5.2–6.1kWh/m^2/day (Hotspot energy 2011). With the falling cost of solar PV technology, this resource offers a tangible opportunity for average citizens to exercise some control over their individual/household electricity/energy security. This appears to be the trend in Barbados since the introduction of a Renewable Energy Rider programme, as the use of distributed solar PV, for both domestic and commercial activity, has realised an exponential increase over the past four years. It is understood that approximately 8MW of distributed solar PV has been installed, with a similar amount pending approval and installation. The national distributed variable RE capacity limit was revised from 9MW to 20MW in 2015.

- **Fuel adjustment clauses:** It is important to highlight that mechanisms linking the cost of energy generated from renewable sources to fuel surcharges, such as the aforementioned Barbados Renewable Energy Rider (see Barbados section), are impractical for the continued penetration of renewables onto the grid. Linking the cost of renewable energy to the international price of oil completely misses the point regarding the advantages of renewable energy, such as reduced price volatility and increased security of supply.

- **Storage:** Storage is not an immediate concern. Thanks to existing highly dispatchable energy systems, there is no need to build long-term storage facilities too early, as they will sit idle before the region reaches at least 50 per cent of renewable power penetration (however, there may be a need for some short-term storage to allow time-shifting of loads). This is supported by the BL&P's recent study on grid integration of wind and solar (Emera 2015).

- **Maintain existing infrastructure where possible:** Keep the existing power generation facilities as backup as long as possible, as they complement the expansion of renewable power supply very well.

5.5.4 Financial

- **Local investment:** Use a pricing policy for wind and solar power that enables broad local participation in the investment in order to generate additional income for as many citizens as possible. Set up the policy framework in such a way that the income generated from investment in new renewable power technologies remains within the local economy.
- **Targeted programmes for local banking institutions**: Retail banks offer instruments for the financing of green initiatives/projects in very few territories. There is therefore scope for education on the viability of renewable energy projects, and a need to put risks into perspective and seek to enable bankers to adequately assess renewable energy projects. Likewise, there is a need for capacity building, as it pertains to the efficient design of project proposals.
- **Insuring renewable energy systems**: Regional insurers are increasingly concerned about the quality of solar PV systems being installed, and an assessment is required of the various risks presented by the inclusion of PV systems on properties covered by existing insurance policies. Better-trained inspectors would help alleviate these concerns.
- **Power purchase agreements (PPAs):** PPA drafting is a crucial skill set for the utility-scale deployment of renewable energy. The Caribbean Electric Utility Services Corporation (CARILEC) has developed a PPA template for consideration by its member utilities. The PPA is the single document that determines the viability of an RE project and requires a multidisciplinary approach. Regulators need to be empowered with the necessary skill sets to assess such contracts.
- **Subsidisation**: Oil and gas subsidies should be removed in Trinidad and Tobago and The Bahamas. Retention of these subsidies hampers the development of renewable energy, as it appears artificially uncompetitive. Regulators also need to guard against cross-subsidisation, where the more economically vulnerable are required to maintain the grid, while RE customers benefit from use of the grid but do not contribute to its maintenance.
- **Low-cost capital:** Investors, particularly local investors, need access to low-cost capital. This is a significant inhibitor of local projects.
- **Creation of an appropriate investor climate:** Processes need to be streamlined to allow a receptive investor climate. Planning and permitting processes, economics, regulation and legislation and other bureaucratic processes should be reviewed.

5.6 Potential funding sources

Funding for renewable energy projects is increasingly available through local, regional and international banks and development agencies such as the CDB, the IDB, the

European Investment Bank, the French Development Agency and the Australian Development Agency. Some international development banks have prioritised the region as a lending environment in order to spur the development of renewable energy projects. Multilateral lending institutions, such as the International Finance Corporation, the IDB, the Central American Bank of Economic Integration and the Development Bank of Latin America, have all taken strategic actions to create linkages with private lending communities to facilitate funding for renewable energy projects. Local and foreign private investors are also beginning to become active in the process as the region's regulatory and legislative framework unfolds.

In April 2015, the United States committed to launching a US$20 million facility (the Clean Energy Finance Facility for the Caribbean and Central America) to encourage investment in clean energy projects. The facility is expected to provide early-stage funding to catalyse greater private and public sector investment in clean energy projects. It will draw on the expertise of the US Overseas Private Investment Corporation and the US Trade and Development Agency, in co-ordination with USAID and the Department of State.

Many of these institutions offer financing in a number of areas ranging from sustainability, environmental conservation and social/community empowerment to energy efficiency, energy security and resilience, technology development and innovation, institutional strengthening, electricity generation diversification, green tourism, clean transportation and energy education. It is difficult to ascribe a particular type of funding to a given agency, as it appears to be more dependent on the objectives of the agency at the time of application and the perceived feasibility of the project.

In addition, it has been noted by some of the funding bodies that there is often a lack of ownership of regional energy projects, which can lead to project failure due to poor maintenance regimes. Therefore long-lasting project success is dependent upon clear management rules, clear allocation of responsibilities and the inclusion of the persons who are affected by the project (in the community) to ensure that they feel a connection and are therefore willing to fully participate in ensuring its success. In a move to promote better ownership of projects, funders are exploring options such as the use of innovative financing mechanisms, such as blending loans and grants for development and project management by external contractors who are able to relieve often-overloaded local stakeholders (ECDPM 2013).

The secret to navigating these dynamic funding environments will be in the assembly of the right team armed with market knowledge, language skills and business acumen.

5.7 Vision 2050 for the Caribbean energy sector

Recent technological advancement in the renewable energy technology sector has mainly been in the area of manufacture, which has had a significant impact on economic viability. Today, some clean energy technologies have reached grid parity for large parts of the Caribbean, meaning that it is already significantly cheaper to

generate 1 kWh of electricity from some renewable energy technologies than it is to generate 1 kWh of electricity from existing fossil fuel generation plant (i.e. renewables can already play a 'fuel-saver' role). As most utilities work on timescales that account for the expected life of their generation plant (20 to 30 years), it is definitely conceivable that by 2050 the Caribbean's energy system can be 100 per cent based on clean, sustainable generation plant.

5.7.1 Resilient energy systems

- There will be increased levels of energy security, as a result of energy systems being decoupled from the international energy market. This will help the region to connect to the international community and develop on an economic and social level.
- Coupled to energy security will be the fact that, possibly for the first time in 400 years, the region can be 'master of its own destiny'.
- Overall the standard of living will increase and damage to the environment will decrease, while the ability to attract foreign investment should also increase because of the lower cost of doing business.
- There will be increased network reliability and resilience, as a result of a distributed network of RE generators.

5.7.2 Resilient economies

- There will be a reduction of government spending on energy and energy subsidies, allowing that money to be channelled instead towards critical areas in the national economies such as health and education.
- Money can stay within countries and be recycled, rather than leaking out in foreign exchange.
- The creation of different renewable energy technology sectors will allow development and diversification in new skill areas, leading to the availability of more green jobs.
- There will be room for innovation and income generation if the Caribbean is the leader in renewable energy development (at the moment this is not the case).
- A transition to clean energy systems will allow the development of a green brand of regional tourism – currently around one-quarter of income from the tourist sector is spent on energy.
- The cheaper and more stable cost of electricity can help attract manufacturing and clean technology industries.
- With the decline of the sugar cane industry and the importation of basic food items from international markets, the agriculture sector is suffering across many parts of the Caribbean. Renewable energy technologies can provide substantial economic relief to farmers, who can boost their incomes with the careful installation of solar, wind and biomass technologies.

- Clean energy technologies can also help with more advanced agriculture methods. The use of climate-controlled greenhouses and cool- and cold-water agriculture can improve food security in the region.

5.7.3 Healthier countries

- Not only will countries have more revenue for expenditure on health and education, but the generation of cheap, clean electricity from renewable technologies will allow a transition towards the use of electric vehicles on the region's roads. This would significantly mitigate noise and air pollution from vehicular transport.

5.7.4 Wider benefits

- A regional approach to solving the Caribbean's energy crisis will provide vital experience and facilitate the ability to adopt best practices from within the region, leading to better regional understanding and cohesion.
- A Caribbean actively pursuing a sustainable energy system will provide the region with the moral high ground in future climate change negotiations, and will send a strong message to the rest of the world that tackling climate change and transitioning from an almost 100 per cent fossil fuel-based energy system to a clean, sustainable energy system is indeed possible.

Notes

1 Telephone interviews conducted March/April 2015.
2 Quote from survey response, April 2015.

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Chapter 6

Private Sector Development and Innovation: Towards a More Prosperous Caribbean

Ryan R Peterson

6.1 Introduction

Envisioning a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness seems challenging and almost enigmatic for the Caribbean, particularly in the light of weakening institutional conditions, persistent ecological vulnerabilities, enduring inequalities and stagnating economic development for well over a decade. The Caribbean's vulnerability, however, originates not from episodic external events, but – more importantly and persistently – from idiosyncratic internal inertias. Challenging and changing this status quo in small states will require nothing less than a paradigmatic shift and systemic transformation to build resilience based on the needs of a sustainable future rather than accepting or reacting to a multiplex of challenging institutional and market conditions by means of traditional interventions. In essence, the Caribbean will need to innovate its way out – led by the private sector in partnership with public institutions and regional agencies.

Commissioned by the Commonwealth Secretariat and building on previous studies and policies on building resilience of small states, this chapter explores the status and strategies for private sector innovation in the Caribbean, with special attention to the small states of The Bahamas, Barbados, Grenada, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago. It concludes that, despite considerable policy intentions and interventions, and beyond financial and market cycles, structural innovation deficits in small states in the public and private sectors are persistent and worsening, consequently leading towards an unsustainable path for building resilience and improving economic development. In the spirit of William G Demas, addressing this innovation deficit and developing the requisite transformability will be crucial for the future of the Caribbean.

Premised on the evidence that 'business-as-usual' is not sustainable, and that building economic resilience to absorb shocks is not sufficient, the chapter proceeds by exploring and expanding on eco systemic resilience from a dynamic evolutionary perspective by focusing on the needs of sustainable future (private sector) innovation and fostering entrepreneurial ecosystems to build innovation resilience towards realising the vision for the Caribbean 2050. While persevering with past endeavours and present engagements to improve (macro-)economic stability and market efficiencies are certainly necessary in terms of (fiscal, financial, social, educational, logistical, technical and ecological) regulatory qualities and conditions for doing

business and private sector enterprise, these are proving to be insufficient to build resilience from, and especially for, an emerging future of small states.

The future of the Caribbean will increasingly rely on its collaborative creativity and capability to plot proactive, private sector-led, parallel pathways towards innovation resilience for sustainable development. In challenging the status quo and developing the requisite transformability and flexibility to adapt and innovate, this chapter concludes by outlining innovation pathways for systemic transformation and building the resilience of small states, in which private sector leadership is essential in developing institutional innovation and entrepreneurial ecosystems. Emphasising the need to innovate systemically across the private and public sectors, in addition to elevating and engaging (regional) innovation across small states, the innovation pathways underline the importance of strengthening institutional trust and thrusts, and deepening emerging business ecosystems. Facilitating capital, connectivity and capacity – financial, social, digital, human and creative – is thus pivotal in the pathways for innovation.

While there is no 'silver bullet' or standard recipe for building the resilience of small states, the innovation pathways present a systemic (multistakeholder and integrated) framing and featuring of principles, policies and parameters to transition and transform (public and private) institutions and markets within and across small states of the Caribbean. In relation to this, the innovation pathways provide a discussion and development framework through which stakeholders at and between different sectoral, national, regional and international levels can envision and engage in building innovation resilience of small states for the Caribbean 2050.

6.1.1 Status quo in small states

The Caribbean consists of a wide variety of small(er) states and political–economic styles, with a diversity of political–economic histories and trajectories. Within the (Anglophone) Caribbean, and from an economic perspective, small states are clustered according to two general dimensions, i.e., their economic base (production orientation) and their economic income (as measured by gross national income per capita).

The Caribbean (small) states discussed in this chapter – The Bahamas, Barbados, Grenada, Guyana, Saint Lucia, Jamaica and Trinidad and Tobago – differ (relatively) according to these two dimensions, and form four distinct (stylised) clusters of economic development. Guyana and Trinidad and Tobago are (horizontally) classified as commodity-based economies (predominantly natural products including oil/gas, minerals/mining and agriculture). The Bahamas, Barbados, Jamaica, Saint Lucia and Grenada are classified as service-based economies (predominantly tourism, financial and professional services).

In terms of income levels (see Table 6.1), The Bahamas, Barbados and Trinidad and Tobago are classified as high-income countries (income/capita is greater than US$12,000), and Jamaica, Saint Lucia, Grenada and Guyana are classified as upper middle-income (between US$4,000 and US$12,000) to lower middle-income (between US$1,045 and US$4,000) economies.

Table 6.1 Stylised economic indicators for selected countries

	The Bahamas	Barbados	Grenada	Guyana	Jamaica	Saint Lucia	Trinidad and Tobago	Mean	Median	SD
GDP (US$ billion)	8.8	4.3	0.8	3.1	14.2	1.3	28.9	8.8	4.3	9.3
GDP/capita (US$)	24,484	15,447	7,913	3,945	5,097	7,866	21,462	12,316.3	7,913.0	7,586.5
GDP growth (%)	1.6	0.3	2.6	3.8	0.8	–2.7	0.5	1.0	0.8	1.9
Gross public debt (%GDP)	65	115	109	58	140	75	42	86.3	75.0	32.9
Current account balance (%GDP)	–14.7	–7.8	–22.6	–18.3	–8.5	–11.4	10.1	–10.5	–11.4	9.7
General gov revenue (%GDP)	17.1	33.1	24.9	28.6	26.9	25.4	32.2	26.9	26.9	5.0
Inflation (Consumer Price Index percentage)	1.9	1.9	1.6	3.9	9.1	1.1	4.8	3.5	1.9	2.6
Unemployment (%)	15.5	15.6	20	11	14.9	25	5	15.3	15.5	5.9
Trade openness (%GDP)	102.3	96.8	71	142.7	80.8	112	98.9	100.6	98.9	21.4
Tourism growth percentage of Stop Over Arrivals (%SOA)	3.5	0.2	18.4	8	3.6	6.1	Unavailable	6.6	4.9	5.8
Renewable energy supply as percentage of total (%TOT)	1	7.5	6.7	NA	6.5	1.8	0.3	4.0	4.2	3.0

Source: CDB 2014; World Bank 2015a

Despite the stylised divergence and diversity in terms of (economic) population, production and productivity, Caribbean countries share several (geo-)economic 'invariants', including economic space, openness, concentration and exposure to (global) economic disruptions, (natural) ecological risks and (self-induced) environmental destruction. These economic vulnerabilities of the Caribbean small states are well recognised, and have been discussed for over half a century. They pose significant and structural challenges to the sustainable development of small states.

Collectively and cumulatively, these challenges also underline the increasingly urgent need to build the resilience of small states, as addressed for over three decades in the Caribbean: 'more fundamentally, the per capita income figure conceals the true nature of economic underdevelopment, which is a distorted and highly unbalanced economic structure incapable of meeting the basic needs, and lacking in internal economic resilience in the face of adverse economic impacts of external origin. Thus, the Caribbean economies, in spite of the relatively high levels of per capita income, are riddled…' (Demas 1980, 238).

Today, these discussions are by no means less pertinent, particularly in the light of persistent socio-economic deteriorations and ecological disruptions and, consequently, economic stagnation and fragile sustainability (IMF 2013; IDB 2014a). The need for (re)building and realising the (economic) resilience of Caribbean small states, as advocated and addressed by the Commonwealth Secretariat for over a decade, is an imperative and *sine qua non* for the sustainability of the Caribbean on the road to 2050.

It is increasingly recognised that the resilience and sustainability of the Caribbean is not dictated by inherent endowments, contextual vagaries and other vulnerabilities, but, more importantly, determined and developed by creating and cultivating internal resilience, describing the systemic transformation and ability to (1) recover from economic disruptions and shocks, (2) withstand and absorb the effects of economic disruptions, (3) foresee (the effects of) economic disruptions and (4) develop the innovation capability to act and adapt collectively (Briguglio et al. 2006; Peterson 2012).

In essence, building (economic) resilience through systemic transformation goes beyond traditional policy and market reforms, and industrial or competitiveness policies, which often reinforce the status quo. Systemic transformation challenges and changes the status quo, and involves developing the capabilities and continuing capacities to foresee and adapt to changing and challenging conditions, and to apply systemic change and innovations in a proactively integrated manner (Demas 1965). This is the quintessence of building sustainable resilience.

6.1.2 Caribbean economic developments

Envisioning a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, and reflecting on the contemporary economic development of the Caribbean, there is a clear and present consensus that, despite significant development and progress in the past century, and notwithstanding continued international investments and a multiplicity of regional initiatives and

national (industrial and innovation) policies in recent years, the Caribbean continues to experience structural stagnation and fragility in economic development with low growth, low productivity, high debt and high unemployment (see Table 6.1).

Over the past decade, the Caribbean has become economically less productive and competitive, as evidenced by several interrelated developments. These include (IDB 2014a; IMF 2013; World Bank 2015a):

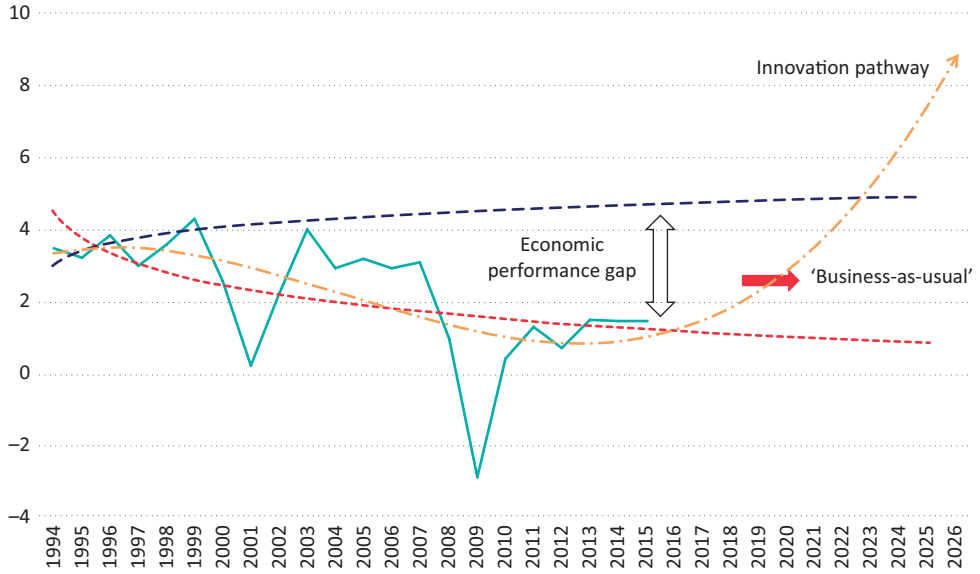
- declining comparative GDP per capita (despite high average real GDP per capita);
- declining labour productivity (despite growth in labour participation);
- declining tourism contribution and market share (despite growth in tourist numbers, tourism expenditures and tourism infrastructures);
- declining total export market shares (despite growing market demand in Latin America);
- declining business investments and innovation (despite increasing available investment and innovation funds);
- increasing (public) debt and deficit-to-GDP ratios (despite fiscal reforms and financing programmes);
- increasing cost disadvantages in terms of labour, electricity, credit and other tariffs;
- increasing inequalities and informal sector developments (despite regulatory reforms);
- increasing public-to-private investment ratios (despite market and private investment reforms); and
- increasing economic costs and debt burden from ecological disruptions.

Compared with past economic performance and potential, the present Caribbean economy continues to underperform, and there is a growing economic performance gap (see Figure 6.1).

If the Caribbean is to realise its vision and potential for developing a creatively enterprising private sector, then the foregoing state of economic affairs and developments needs to be challenged and changed. The need for an alternative scenario – an innovation pathway – is thus not only imperative, it is increasingly urgent. Whereas 2005 was heralded as a 'time to choose' for Caribbean development in the twenty-first century (World Bank 2005), a decade later, 2015 was proclaimed a 'time to act' swiftly and sagaciously in order to build the resilience of small states for the Caribbean 2050.

The past, present and persistent economic state of the Caribbean indicates that, beyond economic cycles, there are deeply rooted (structural) factors at play, which span beyond exogenous conditions and (basic) factor inputs and accumulation.

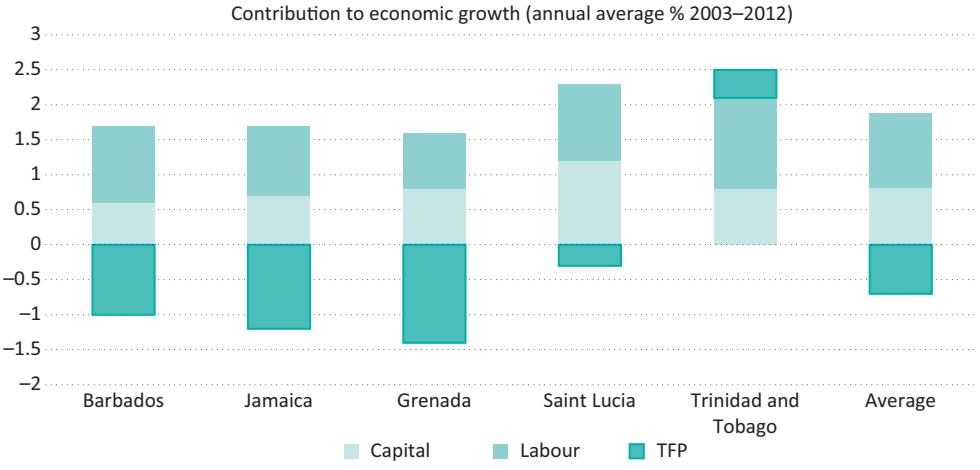
Figure 6.1 Caribbean GDP growth (1994–2014): past, present and prospective pathways



Source: IMF 2013; CDB 2014

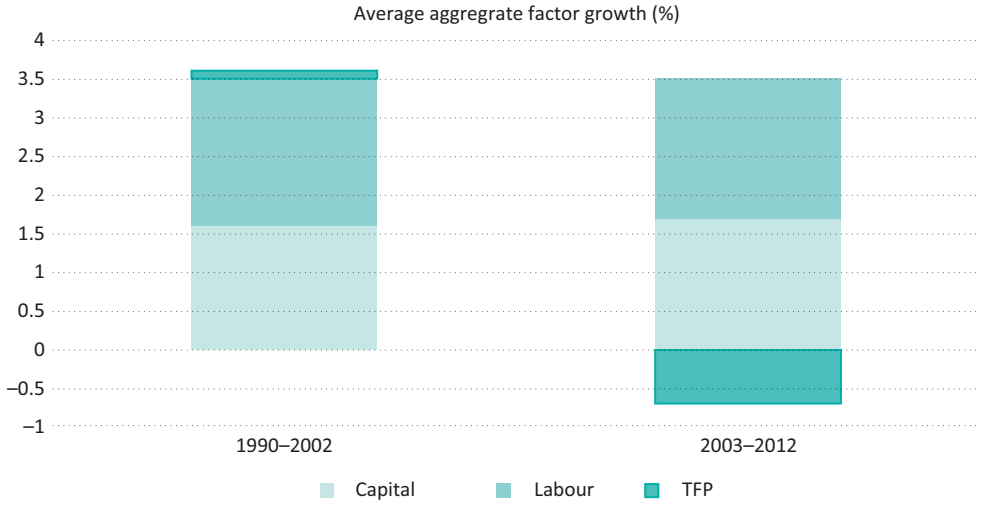
Analysis indicates that the economic stagnation of the Caribbean is largely attributed to and explained by not (the lack of) capital and labour inputs but, more importantly, negative and declining TFP (see Figures 6.2 and 6.3). Relative to historical economic development and to other small states, TFP has been declining since the mid-1980s. Total factor productivity captures the (residual) 'intangible' capacities related to

Figure 6.2 Contribution to economic growth of capital, labour and TFP (annual average percentage for select small Caribbean states between 2003 and 2012)



Source: IMF 2013

Figure 6.3 Decline in TFP (2003–12)



Source: IMF 2013

(in)efficiencies, (in)formalities and (in)equalities of political and (macro- and micro-) economic institutions, (market) integration and (knowledge) innovation. In effect, it captures the 'invisible' effect of institutional regimes, relationships and resilience.

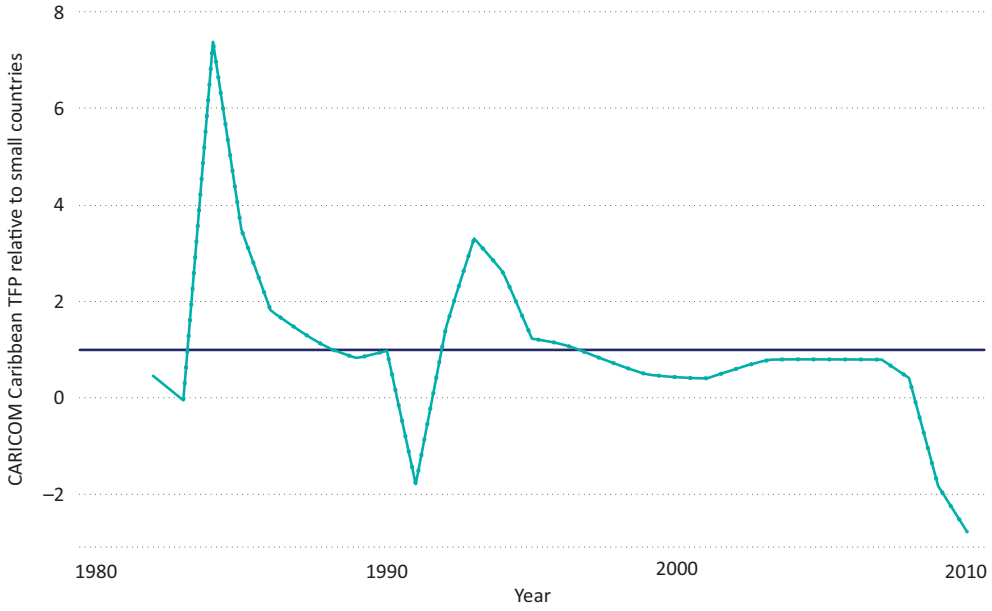
The importance of innovation and knowledge for transitioning towards green and blue economies is increasingly acknowledged, as innovation is accepted as the key driver for sustainable competitiveness and inclusive growth. Over 60 per cent of sustainable development is explained not by the investments and accumulation of (physical and financial) capital and labour, but by factors and actors, including creative capital, communication architectures, innovation cultures and agile governance, involved in knowledge creation, knowledge sharing and knowledge exploitation (ECLAC 2010).

Nevertheless, institutional entrepreneurship and regime innovation, and thus the creation of enabling institutional conditions and developing institutional capabilities, and the elaboration of appropriate and efficient policies and programmes to capitalise on this knowledge, have proved to be elusive, and the Caribbean, consisting widely of small (island) states, is no exception (Peterson 2012).

6.1.3 Innovation in small states

Along the foregoing lines of declining growth and productivity, and turning towards the qualities of institutions, integration and innovation in the Caribbean, analysis indicates that the Caribbean continues to underperform (see Figure 6.4), and has not improved its competitive position or capacity to compete over the past decade. In essence, the development and improvement of (regulatory) institutions, (market) integration and (sophisticated) innovation remain stagnant and unchanged, and in some cases have deteriorated at an increasingly rapid pace (thus explaining the negative TFP).

Figure 6.4 CARICOM Caribbean TFP growth relative to other small economies



Source: IDB 2014a

Cumulative empirical evidence indicates that the economic resilience of the Caribbean has declined over the past decade (discussed in section 6.2). More specifically, there are persistent weaknesses in terms of simultaneous inefficiencies and inertias across institutions and markets, in which the Caribbean is caught in a vicious cycle of economic stagnation and decline. The simultaneous and reinforcing presence of both government and market failures explains to a large extent the current position of the Caribbean, in addition to why traditional industrial policies and integration strategies have been largely disappointing, as they fail to address the institutionalised status quo. Challenging this status quo and breaking free from this insidious cycle will be imperative in (re)building and realising the economic resilience of these small states today and, more importantly, towards the future of the Caribbean in 2050.

Beyond the general challenges, private sector development and innovation is currently being challenged by several 'idiosyncratic' factors and specific (national) conditions, which unfold in small-state-specific ways (see Figure 6.5). Beyond these specific symptomatic features, systemic transformation and building resilience of small states is intimately tied up with the fundamental and deeply embedded social and political processes underlying private sector enterprise and economic development (Demas 1965; Peterson 2012). The combination of increased economic vulnerability (exposure to economic risks, deficits and shocks), and limited economic resilience (development of innovation capabilities and competencies) has contributed to continued economic decline and stagnation.

Figure 6.5 Private sector in small states of the Caribbean: key challenges for innovation

Source: World Bank 2015b; Economist Intelligence Unit 2015; stakeholder interviews and private sector consultations (personal communications, 15 April to 10 May 2015).

In order to reverse the cycle of economic vulnerability and resilience, the private sector needs to take a leading role towards innovation and competitiveness. This is not only because of the limiting degrees of (fiscal and financial) freedom of the public sector (today and within the medium term) but, more importantly, because (economic) productivity and (national) competitiveness (in the mid-to-long term) are ultimately determined by the resilience of the private sector and its ability to innovate and excel. The track record of the Caribbean indicates that too often the public sector has assumed the main role in enabling economic development and innovation, to the detriment of involving and engaging the private sector in the process. In developing a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, it is thus imperative that the private sector accepts and assumes a leading role in building resilience.

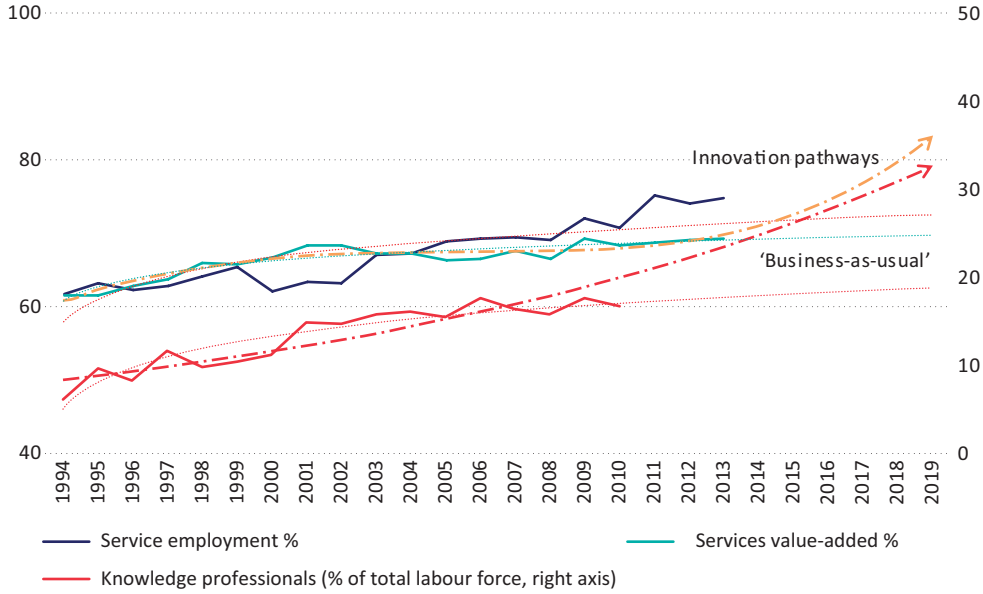
While public sector institutions play an important role in creating the political–economic conditions and managing negative externalities for transitioning towards a new (green and blue) economy, private sector institutions and enterprises are imperative in leading and realising sustainable development. The Caribbean is well aware of this need for private sector leadership for innovation and competitiveness, as witnessed consistently across national policies and regional programmes for development and innovation, and recent calls for convergence and a more competitive Caribbean (IDB 2014b; CDB 2014). However, as discussed in the remainder of this chapter, one of the key challenges lies not in the lack of vision or policies for the future of the Caribbean, but in the absence of *shared* visions, *co-ordinated* execution, *innovation* capabilities and *leadership* excellence between public and private sectors and stakeholders.

6.2 Structural challenges in private sector innovation

Similar to the diversity of small(er) states in the Caribbean, the private sector contains a wide and diverse variety of organisations and orientations. Nonetheless, the private sector across small states does share certain key market and business traits of which their small(er) size is a key feature.

Industry analysis of the private sector indicates that well over 80 per cent of firms are small to medium-sized enterprises, operating in the (traditional) services industry (e.g. tourism, financial services, retail/wholesale, construction, transportation, education, social services, etc.), with several new service-related industries emerging over the past decade, including high-tech/ICT, energy and specialised (international) business services, including tourism and financial specialisation. Over 75 per cent of employment is generated by the services industry. Employment in the services industry has grown steadily and significantly for over two decades (testifying to the shift from an agricultural and industrial economy towards a service-driven economy). While the value-added of services (as percentage of GDP) has grown, growth rates have remained stagnant for more than a decade (see Figure 6.6) (World Bank 2015a). In effect, analysis indicates that service productivity and service innovation have declined significantly since the turn of the century, inducing economic stagnation.

Figure 6.6 Development and stagnation of service productivity and value-added



Source: World Bank 2015a

Indications are that (labour and total factor) productivity in the service industry has declined since 2003, and under current 'business-as-usual' conditions will continue to decrease. The lack of qualified human capital and specialised (higher-educated) professionals (see Figure 6.6) (World Bank 2015a), in addition to a generally ageing and emigrating (younger) workforce, is significantly correlated with the stagnation in service industry productivity. More importantly, there are some salient (micro-economic) business features of the Caribbean private sector, which explain its (past and present) role and resilience.

6.2.1 Microenterprises in the Caribbean

Analysis of available firm-level data across the Caribbean – based on World Bank Enterprise Surveys (World Bank 2015b) and stakeholder information – indicates that the predominantly service-driven private sector is home to microenterprises and small business (MSEs) with distinguishing microbusiness features (see Table 6.2), including:

- **Micro and maturing businesses**: The average size of MSEs is 36 full-time employees. The majority of companies (well over 90 per cent) can be classified as micro- to small enterprises (with fewer than 100 employees), of which almost 70 per cent have fewer than 50 employees. The average age of MSEs is 20 years, with managers enjoying on average 19 years of industry experience. Analysis suggests that the private sector has matured over the past two decades, after experiencing an 'entrepreneurial boom' in the early 1990s, and is currently facing significant challenges related to size and seniority of MSEs.

Table 6.2 Stylised business and private sector indicators for selected countries

	The Bahamas	Barbados	Grenada	Guyana	Jamaica	Saint Lucia	Trinidad and Tobago	*Mean*	*Median*	*SD*
Organisation										
Age (years)	24	15	23	24	21	14	21	20.3	21.0	3.8
Size (number of full-time equivalents)	38	30	25	80	29	25	25	36.0	29.0	18.5
Domestic ownership	85	88	82	80	94	86	93	86.9	86.0	4.9
Female ownership	58	44	57	58	38	32	45	47.4	45.0	9.7
Industry management experience (years)	23	17	23	23	16	10	20	18.9	20.0	4.5
Finance										
Bank loan (%)	34	58	49	51	27	25	54	42.6	49.0	12.6
Collateral req (%)	81	51	66	85	97	98	88	80.9	85.0	15.7
Collateral value (% TOT value)	232	138	220	202	204	195	140	190.1	202.0	34.3
Bank finance investments (%)	15	46	37	35	44	52	37	38.0	37.0	10.9
Bank finance work capital (%)	29	39	50	60	53	49	64	49.1	50.0	11.1
Prop. internal financing (%)	83	73	60	56	72	76	66	69.4	72.0	8.7
Capital access constraint (%)	13	41	24	18	41	57	29	31.9	29.0	14.2
Tax rate constraint	15	24	40	50	73	31	12	35.0	31.0	19.9
Tax admin constraint	14	13	28	22	43	8	8	19.4	14.0	11.8
Operations										
Time to licence (days)	17	49	22	22	9	19	29	23.9	22.0	11.7
Quality certification	31	18	33	30	17	1	11	20.1	18.0	11.0
External financial auditing	52	70	60	90	69	45	80	66.6	69.0	14.5
Electronic communication	50	68	43	46	36	15	31	41.3	43.0	15.3
Invest formal training (%)	37	36	46	63	26	14	28	35.7	36.0	14.5
New technology adoption	20	7	15	17	15	0	2	10.9	15.0	7.2
Electricity constraint	25	47	17	43	34	56	15	33.9	34.0	14.5
Skilled workforce constraint	34	33	39	51	20	22	41	34.3	34.0	10.0

(*continued*)

Table 6.2 Stylised business and private sector indicators for selected countries (*continued*)

	The Bahamas	Barbados	Grenada	Guyana	Jamaica	Saint Lucia	Trinidad and Tobago	*Mean*	*Median*	*SD*
Market										
Annual sales growth (%)	2	5	4	6	–7	3	8	3.0	4.0	4.5
Direct export (%)	13	22	10	25	8	24	15	16.7	15.0	6.4
Domestic sales (%)	88	88	94	85	95	85	96	90.1	88.0	4.4
Unregistered competition	68	49	73	60	66	18	69	57.6	66.0	17.7
Customs/trade constraint	22	22	20	25	15	21	13	19.7	21.0	3.9

Note: The lack of available and reliable firm-level and business data in the Caribbean is a well-acknowledged fact. Up until 2010, there was no integrated data set with valid business indicators for productivity and innovation, thereby limiting econometric analysis and evidence-based policy development. In 2011 and 2014, the IDB, in collaboration with the World Bank, under the Compete Caribbean programme, funded and organised two rounds of Caribbean Enterprise and Indicator Surveys in 14 countries. The reported data is based on the latest (2014) available data from the World Bank's database on Enterprise Surveys, in addition to select data indicators from IDB's Compete Caribbean Enterprise Bulletins for the selected Caribbean small states. Nevertheless, collecting, updating and integrating reliable and valid data on economic resilience indicators for the Caribbean remains relevant and important.

Source: CDB 2014; World Bank 2015b

- **Domestic focus**: On average, 86 per cent of companies are domestically owned, with almost 50 per cent wholly or partially owned by females. The domestic focus is also clearly present in origin of sales, with domestic sales accounting for 90 per cent of total sales. On average, fewer than 20 per cent export directly to foreign markets, or are strongly and actively present in integrated supply and business value chains. An equal percentage indicate that they experience customs and trade constraints (due to costly tariffs, complex customs procedures and logistical inefficiencies). Analysis indicates that CARICOM/Caribbean Single Market and Economy initiatives have not resulted (yet) in the creation of new markets and expansion of trade (IDB 2014a). The confluence of these conditions results in microenterprises not only in terms of size, but also in terms of small markets and narrow margins.
- **Narrow margins**: The combination of local ownership, domestic focus and local competition indicates narrow margins and limited annual sales growth (on average 3 to 4 per cent). In addition, companies indicate intensive and informal competitive markets, with almost 60 per cent of companies indicating that they compete against unregistered competition. These narrow margins are also influenced by relatively high (corporate) tax rates (with 35 per cent of companies perceiving this as a major constraint). In addition, there are significant challenges with regard to access to credit and capital in local markets.
- **Seeking financing**: On average, fewer than 50 per cent of companies have a bank loan, with the majority (more than 60 per cent) making use of personal accounts and loans for business development. On average, banks and other credit institutions provide 38 per cent of investments and 49 per cent of working capital, with the majority of banks (over 80 per cent) requiring collateral (close to 200 per cent). Access to finance is considered one of the key constraints by more than two-thirds of the private sector, in which MSEs and entrepreneurs face significant barriers and biased financing.
- **Competitive orientation**: In combination with the foregoing structural micro-features, competitive advantages are more likely to be sought in cost leadership and price offerings, rather than quality or innovation distinguishing competitive features. Only one in ten companies (11 per cent) invests in new technologies (with 40 per cent having adopted basic – communication – technologies). International quality standards and quality certification are present in 20 per cent of companies. Investments in service improvements and human resource development are limited to 35 per cent of businesses, with an almost equal amount (34 per cent) perceiving the lack of qualified (skilled) workforce as a major constraint for business.

In review of the foregoing private sector landscape, the picture is of 'frail' markets and fragile enterprises. Except for a handful of innovative and leading businesses, world-class enterprise remains severely underdeveloped in the Caribbean. The (micro-) enterprise profile that emerges from the Caribbean private sector is that of a relatively simple (small and informal), standard (unsophisticated) business, with a strong focus on offering basic products and services, risk-averse operations and competing locally based on cost and price. For the experienced manager/owner, maintaining control of costs and stability is essential, and there seems to be limited (strategic and financial)

space to invest and develop internationally and innovatively. In terms of future orientations, 'surviving' rather than 'thriving' seems to be the *modus operandi* and 'mood' in contemporary Caribbean private sector enterprise, with indications that the Caribbean is indeed a 'rough neighbourhood' for doing business (IDB 2014a).

The enduring question – which has received considerable attention in national development policies and regional investment programmes geared at stimulating and supporting small businesses, creating and expanding (capital and export) markets, incentivising (green and information) technology adoption, and other industrial policies over the past decade (IDB 2014a,b; CDB 2014) – is not whether this (classical) business model and enterprising model suffices in a hyper competitive and disruptive economic environment, but rather how the Caribbean private sector can and should develop the requisite business competencies and innovation capabilities to not only survive in the twenty-first century but, more importantly (and urgently), thrive and transform itself, in order to contribute to the sustainable development of the Caribbean. In effect, envisioning a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, the central question is how we can transform our enterprising modes and business models in a systemic manner in order to build the resilience of small states and achieve the Caribbean 2050 vision.

6.2.2 Private sector challenges for building economic resilience

Enterprise development and industry productivity are determined by both macro-economic and micro-economicfactors. In terms of macro-economic conditions, the stability and efficiency of political and economic institutions are deemed essential and a prerequisite for the effective development of private sector enterprise.

However, whereas macro-economic conditions are necessary, they are not sufficient to achieve productivity and innovation. Micro-economicconditions of (transactional) market efficiencies and flexibility, in addition to (transformational) business sophistication, and innovation are imperative. Correspondingly, two (complementary) forms of economic resilience are distinguished: efficiency-based economic resilience, based on macro-economic stability and market efficiencies (Briguglio et al. 2006), and innovation-based economic resilience, which focuses on institutional entrepreneurship market innovation and entrepreneurial ecosystems (Peterson 2012). Efficiency- and innovation-based economic resilience differ in terms of parameters, focus, orientation and capacities, with different underlying paradigms for economic development, in which the public and private sectors play complementary roles in developing economic resilience.

The combination of these macro- and micro-conditions and capabilities for both efficiency and innovation – in a systemic fashion – define and determine economic resilience.

Consequently, in the following subsections, the state and strategies for private sector innovation in small Caribbean states are analysed and discussed in terms of structural challenges and changes towards realising a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, including:

- macro-economic and institutional conditions and challenges focused on enabling business environments;
- micro-economicand market conditions for (transactional) efficiency in doing business; and
- micro-economicand business conditions for (transformational) innovation, new business formation and innovating business ecosystems.

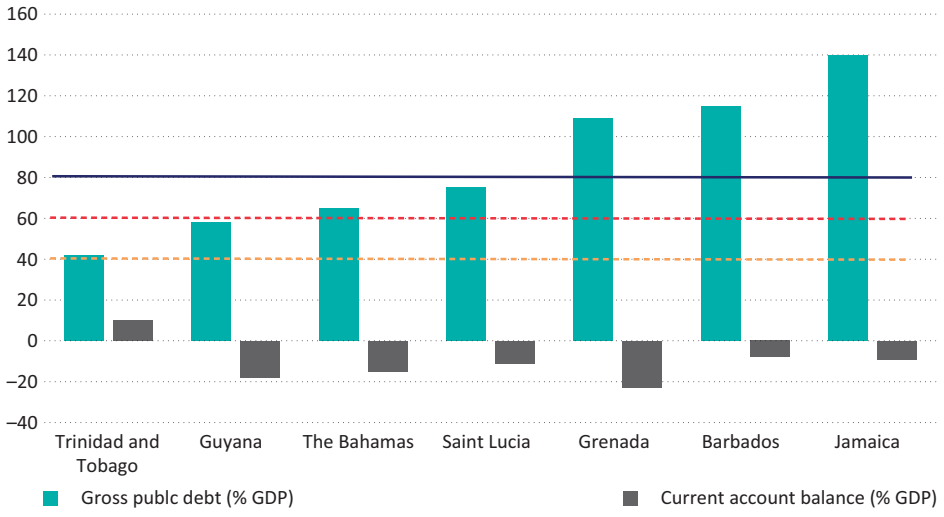
Institutional conditions and challenges

Sound and strong political and economic institutions are essential for the efficient and stable functioning of the economy and business enterprises. The role of government and the public sector is to create the conditions that facilitate and stimulate business and enterprise development. Good economic governance and macro-economic stability are thus prime policies and parameters, in addition to the high quality of (physical, natural, social and human) infrastructures.

From a macro-economic perspective, analysis indicates that the situation in the Caribbean has deteriorated in recent years and remains delicate (IDB 2014a; IMF 2013). While inflation has moderated and is relatively stable, the rising levels of unemployment, 'talent migration', public debts and fiscal deficits have reduced economic stability and (macro-)resilience (see Figure 6.7), with significant implications for markets and private sector development (see Table 6.1). Compounding this increased (macro-)economic vulnerability is a deterioration in the quality and efficiency of economic institutions, resulting in a decline of shock-absorptive capacities and (efficiency-based) economic resilience for more than a decade.

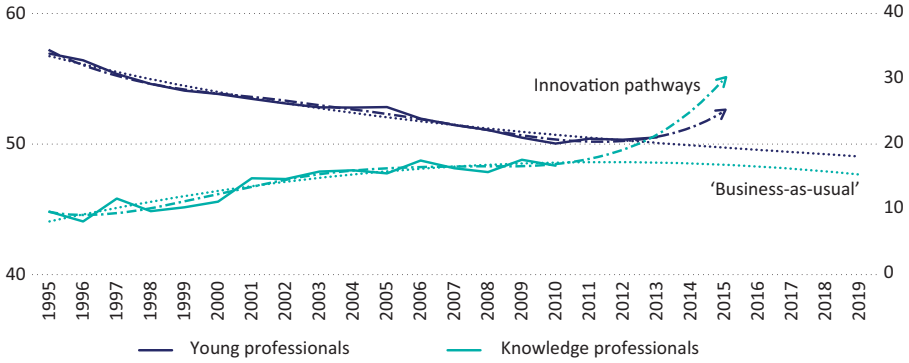
The average gross public debt in the Caribbean has risen to more than 85 per cent, with a 10 per cent fiscal deficit (see Figure 6.7). The average unemployment rate is

Figure 6.7 Declining macro-economic stability: gross public debt and account balances



Source: World Bank 2015a

Figure 6.8 Caribbean workforce development: workforce between the ages of 15 and 24 years (% of total labour market – left axis) and workforce with tertiary education (% of total labour market – right axis)

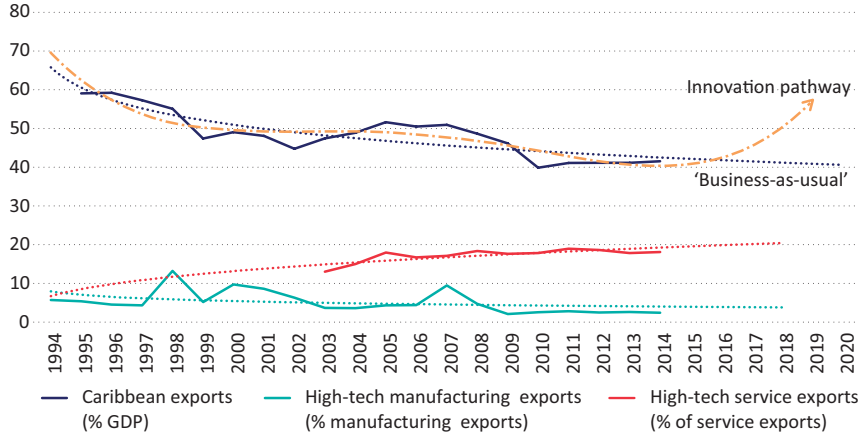


Source: World Bank 2015a

15 per cent, with female and youth unemployment significantly higher. In terms of human capital development, fewer than 20 per cent of the workforce enjoy a tertiary education degree, and labour market participation by young professionals (aged 15 to 24 years) has declined significantly (see Figure 6.8).

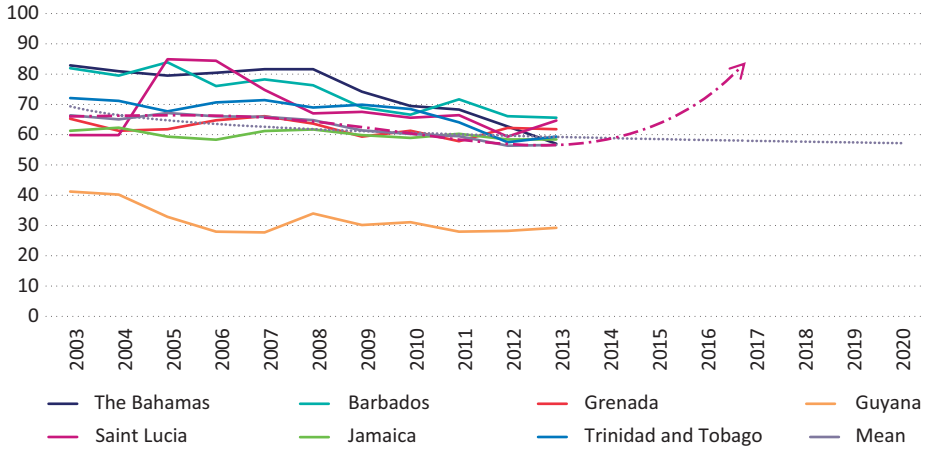
In addition to the general ageing of the workforce, analysis indicates that, over the past decade, the Caribbean has lost more than 70 per cent of its tertiary-educated workforce (knowledge professionals) through emigration, such that this 'talent migration' is costing the Caribbean almost 15 per cent of GDP. Ironically, the 'export' trend does not hold for trade, as total exports have declined by almost 20 per cent over the past two decades, with stagnant growth in tourism and (high) tech manufacturing and service exports (see Figure 6.9).

Figure 6.9 Declining exports and trade competitiveness of the Caribbean



Source: World Bank 2015a

Figure 6.10 Decline in Caribbean governance and regulatory quality (percentile rank 2003–2013)



Source: World Bank 2015a

This fragile macro-economic situation is affecting economic governance and the effective regulatory functioning of the Caribbean, with serious downside effects for the private sector in terms of dealing with the (high) costs of government (Economist Intelligence Unit 2015). More importantly, with tax rates already (relatively) high (on average between 35 and 40 per cent) (CDB 2014; World Bank 2015b), and being perceived as one of the key constraints for doing business, the delicate and uncertain financial and fiscal climate reduces business confidence and, consequently, investment propensity, which has declined for more than a decade.

Building on the Caribbean case in point (see Box 6.1), and in terms of economic governance, analysis indicates that government effectiveness and governance (regulatory) systems experienced a gradual decline in quality between 2003 and 2013 (see Figure 6.10). While political and economic institutions have enjoyed relative stability and security and the judiciary has enjoyed independence, it is perceived that the quality of public services, policy formulation and implementation, and the credibility of the government's commitment to such policies, have declined in the Caribbean.

More specifically related to the private sector, perceptions of the commitment and ability of the government to formulate, and especially implement and execute, sound policies and regulations that protect property and investment rights, and promote and enable private sector development, worsened between 2003 and 2013 (see Figure 6.10).

Beyond the traditional complaints and constraints of government bureaucracy, private sector analysis indicates that many of these perceptions and challenges are due to a lack of communication, co-ordination and collaboration between (semi)public institutions and private sector institutions, in addition to the lack of (timely) execution and demonstrated effectiveness of past and present private sector

Box 6.1 Case In Point – Enabling business in the Caribbean

The high level of the government's indebtedness places limits on public sector goals, but it can also impact negatively on private sector development. One key limitation is in the area of public goods such as tourism marketing, business support, and other investments to support private sector development. Faced with budgetary constraints, the public sector's ability to spend money in these areas is limited.

Other limitations that may be partly due to high levels of public indebtedness include long delays in processing applications and overall bureaucratic inefficiencies, as well as the limited availability of support mechanisms. All of these factors have the potential to impose time and monetary costs on business activity. In addition, participants were of the view that the need to improve data availability and access to information was a priority area in relation to private sector development.

Development planning lacked any strategic long-term vision, and that the private sector needed to be given a greater voice in the development of programs and policies affecting it. Private sector stakeholders indicated that the government lacks an understanding of how the various segments of the private sector operate, and argued that the government's tax policy is detrimental to investment and growth in the private sector.

Source: IDB 2014b, 15

development programmes (IDB 2014a). The latter is a particular perennial challenge in the Caribbean, in which the quality and capacity for policy implementation remains underdeveloped. These classical failures of government and governance – including the lack of institutional capabilities, 'silo administrations', rent-seeking behaviours, ambiguous economic signals and stakeholders, and the politics of bureaucracy – are significant institutional challenges to building resilience and sustainable development (ECLAC 2012; Peterson 2012). The lack of execution thrust and executive trust, in addition to precarious public finances, has induced significant transactional inefficiencies and market uncertainties (discussed in the next section).

In summary, while there is no lack of policy 'ideation' and intentions to enable and promote private sector development, the Caribbean (still) struggles with classical 'institutional failures' and vulnerabilities: (the lack of) effective and efficient policy integration, policy inclusion and policy implementation. In moving forward on an 'innovation pathway', the Caribbean will have to – as a minimum – improve its institutional capabilities in terms of at least five related areas (see Table 6.3). These include the efficiency, quality, co-ordination and innovation of regulation, and trust-based relationships with the private sector.

Market conditions and challenges

The efficiency of markets and transactions is a primary mechanism for the effective functioning, integration and development of the private sector, i.e. for doing business.

Table 6.3 Summary of pillars, policies, programmes and parameters for private sector innovation pathways

Value(s)	Principles	Pillars (goals)	Policies (strategies)	Programmes (actions)	Parameters (average rates)
Resilience (efficiency-based)	Economic resilience and sustainability	Effective institutions	Building strong institutions	Improve macro-economic stability, debt management and fiscal prudence	+ 4% GDP/capita –5% reduction debt/GDP –1% deficit/GDP
Leadership	Public sector leadership	Trust and transparency (stability)		Improve institutional qualities, governance, legislation and policy implementation	+20% regulatory quality and efficiency +30% public–private partnerships –10% informal business (non-registrations/tax evasion) Develop renewable energy and electronic business legislation Improve competition policies and enforce environmental/ coastal zone conservation
				Improve knowledge-based labour market Develop human capital	+5% youth employment +5% diaspora acquisition and talent immigration +10% higher education enrolment +15% knowledge professionals (tertiary-educated workforce)
				Improve connectivity, reliability and efficiency of energy and technical Infrastructure	+1% national R&D/GDP +10% energy reliability +8% renewable energy adoption +20% ICT network connectivity

(*continued*)

Table 6.3 Summary of pillars, policies, programmes and parameters for private sector innovation pathways (*continued*)

Value(s)	Principles	Pillars (Goals)	Policies (Strategies)	Programmes (Actions)	Parameters (average rates %)
Resilience (innovation-based) Leadership	Industry productivity & market competitiveness Shared public–private leadership	Efficient integration Transactions and time (speed)	Enabling savvy enterprise	Improve market and transaction efficiencies Improve financial market sophistication	+20% funding/finance focus on small and medium-sexed enterprises (SMEs) in/ and emerging industries –2% start-up capital –25% time to start-up –30% time to export –15% custom clearance time SME customisation of financing programmes +20% diversified access to finance (credit, venture capital) –10% non-performing loans +20% macro prudential programmes
				Diversify export markets (Latin America and the Caribbean; inter- and intra-regional trade linkages and markets)	+3% trade/GDP +5% service export (services, ICT) +20% Latin America and Caribbean market export +20% funding/finance focus on knowledge-intensive business services
				Improve availability of professional/skilled workforce Invest in innovation skills Develop talent programmes	+15% science, technology and engineering professionals (science, technology, energy competencies) +20% entrepreneurship programmes in secondary and tertiary education +20% innovation professional workforce development +10% investment in university–industry research, innovation projects

(*continued*)

Table 6.3 Summary of pillars, policies, programmes and parameters for private sector innovation pathways (*continued*)

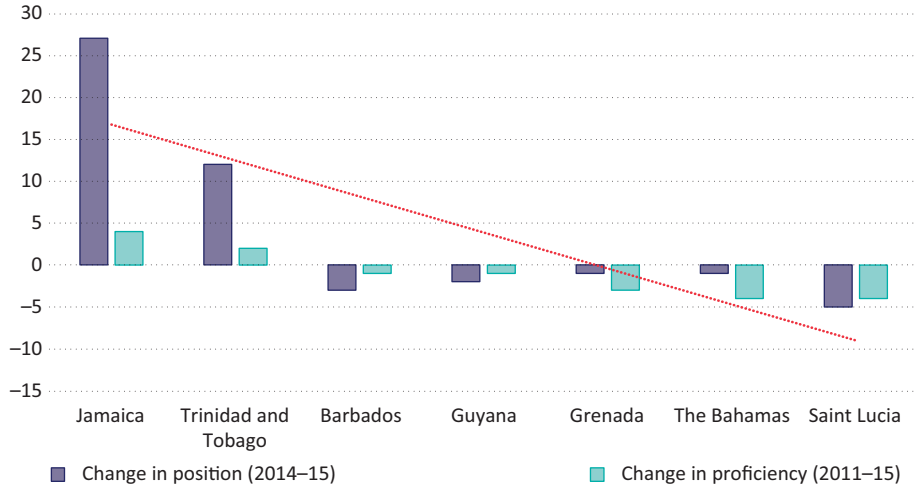
Value(s)	Principles	Pillars (Goals)	Policies (Strategies)	Programmes (Actions)	Parameters (average rates %)
Leadership	Enterprise innovation & business entrepreneurship Private sector leadership	Enterprising innovation Transformation and tenacity (sagacity)	Infusing smart innovation	Develop business ecosystems and value networking Target new/emerging industries and service sectors: – Eco-/green tourism – International business and financial services – Creative/ICT services – Energy/eco-services – Higher education and international business school consortia Business model innovation (also applicable to public services and government enterprises)	+10% new business formation (emerging industries: creative services, energy, niche tourism, business services, ICT) +30% deepening and widening of online business transactions and electronic collaboration Value innovation and business architecture redesign +25% new business technology adoption +25% business quality and energy efficiency certification of businesses +30% service quality enhancement +25% formal and on-the-job training +20% online marketing and branding +10% direct exporting and exploration of new markets

(*continued*)

Table 6.3 Summary of pillars, policies, programmes and parameters for private sector innovation pathways (*continued*)

Value(s)	Principles	Pillars (Goals)	Policies (Strategies)	Programmes (Actions)	Parameters (average rates %)
				Leadership innovation and business entrepreneurship Focus on competencies for: creativity and creative thinking; communication and collaborative leadership; transformational and value-based leadership; ethics and (corporate) social responsibility; multidiscipline and cross-industry	+20% new business incubation centres (local and regional) +25% leadership innovation and entrepreneurship programmes +25% enrolment and engagement of (SME) leaders and managers in innovation programmes +25% participation and application for innovation funds

Figure 6.11 Doing business in the Caribbean, relative position and proficiency



Source: World Bank 2015a

As a corollary to the institutional context and conditions for enabling business, doing business focuses on (market) transaction cost efficiencies and effectiveness, including the costs of starting a business, getting credit, protecting property rights, taxes, trade and contractual costs (World Bank 2015b).

In general, analysis indicates that despite (industrial) policies and (economic) reforms to address market failures, conditions for doing business in the Caribbean remain inefficient and 'sticky'. While some conditions have improved for doing business – albeit at a slow pace – the general situation in the Caribbean remains inefficient and ineffective (see Figure 6.11). The situation is caused by classical 'market failures' and a core set of market conditions involving (the lack of) access to (financial and human) capital, and the (high) costs of (financial and human) capital (IDB 2014a; IMF 2013; World Bank 2015b).

Overall, the costs of (starting and doing) business are comparatively high, and availability and affordability of finance and credit remain low (see Table 6.2). Fewer than 20 per cent of (smaller) businesses in the Caribbean indicate that access to capital is not a constraint (Economist Intelligence Unit 2015). The general lack of access to capital is attributed to a complex confluence of conditions and challenges, including the (lack of) depth and breadth of existing financial markets (ECLAC 2012), in addition to increasing financial volatility and macro-prudential risks (IMF 2013). While the financial crisis and the costs of financial sector concentration were obvious in the balance sheets of some Caribbean financial institutions, and the collapse of a regional financial conglomerate, analysis indicates that challenges are also structurally rooted in the financial market and institutions.

Despite the relatively large and generally well-capitalised and stable conditions of financial markets – except for non-banking and national banking – in the Caribbean (IMF 2013), financial systems are underdeveloped, relatively unsophisticated and

fragmented. This is coupled with insufficient supervision, in addition to their being highly dependent upon traditional institutions for financing (ECLAC 2012). Access to finance and the financial system in general is dominated by (local and offshore) banking, credit unions and insurance companies, with limited alternatives, which is consistent with the structural heterogeneity of small states in the Caribbean, in addition to being unresponsive to the diverse needs of predominantly small and micro-businesses (ECLAC 2012). Capital and investment markets remain relatively shallow and thin, with equity, debt, micro, venture and angel capital practically non-existent. It is therefore no surprise that most (small) businesses use internal (self-) financing or seek other (informal) means of financing.

This challenging financial situation is further exacerbated by relatively high interest rates and interest rate spreads, the need for high collateral, and the lack of credit bureaus and other financial (guarantee and collateral) mechanisms which are customised and geared specifically towards the diversity and intensity of microenterprises and small(er) businesses in the Caribbean. Over the past decade, development banks and other (regional and international) investment funds for development have played a significant role in financing for development. In addition, opportunities in terms of crowdfunding and financing by means of the diaspora are also being explored throughout the Caribbean, especially in light of the increasing importance of, and reliance on, remittances in financing development (IDB 2014b).

In general, contemporary Caribbean financial institutions do not seem to be capable of catering to the complex, specific and 'risky' needs of microenterprises and entrepreneurs. According to private sector stakeholders, particularly microenterprises and new business ventures, there is an insidious 'cultural' bias against financing innovation and development (see Box 6.2; IDB 2014b; Economist Intelligence Unit 2015). Persistent asymmetries in access to financing reinforce historical inequalities in terms of participation and productivity in external markets, thereby marginalising innovation and reinforcing the economic vulnerability of the private sector (ECLAC 2012). In summary, despite the size and stability of the financial sector, it is questionable whether small states can build resilience without addressing the commensurate resilience of financial systems in the Caribbean. Connected to this, diversifying financial instruments and services catering to MSE needs, new business ventures and emerging innovation ecosystems, and improving financial institutional capabilities in terms of regulatory quality and capabilities, are essential.

Beyond the (relatively high) costs and investment requirements of starting a business in the Caribbean, the high monetary costs of conducting business in the Caribbean are also influenced by relatively high tax and (trade) tariffs, in addition to operational (utility and personnel) costs.

In terms of utilities, access to and affordability of (reliable) energy/electricity remains a basic impediment for starting and doing business in the Caribbean. Energy costs, efficiency and reliability are a long-standing concern in the Caribbean. Analysis indicates that the Caribbean remains one of the most energy-costly and energy-unreliable regions, despite an abundance of natural energy sources and several national and regional calls for the adoption of green technologies and renewable

Box 6.2 Case in Point – Doing business in the Caribbean

… the banking sector is too liquid and does not provide enough lending to new businesses, thereby limiting investment and economic growth. The banking sector's response to this criticism has been to argue that banks assess risk and the availability of collateral (consisting exclusively of real estate) to make all their business-lending decisions, and that the result of this is that the portfolio of loans to the private sector is growing faster than the economy. The end result is that lending is expanding, but is not doing so quickly enough to satisfy demand for loans.

Commercial banks require up to 150 per cent collateral, and have cumbersome loan-application processes. This acts as a major constraint for small and medium-sized enterprises (SMEs). The regulatory system is biased towards the exclusive use of real estate as collateral, and the banking system offers only a limited supply of financial products such as leasing, factoring and the use of movable property as collateral.

… the length of time taken to obtain approval to develop land … can significantly delay the process. Indeed, it took 270 days on average to receive permission … . Furthermore, efficiency in granting import licences and operating licences could be improved. Private sector entities therefore require a significantly longer time to access these permits and licences. In addition, more than 15 per cent of all firms reported that tax administration was a major or very severe obstacle to doing business.

Source: IDB 2014b, 17

energy (CDB 2014), and this remains a key concern and cost of business in the Caribbean (see Table 6.2).

The economic opportunities and imperatives for doing business by transitioning towards renewable/reliable energy, improving operational (energy) efficiencies, diversifying into renewable energy and energy business services (including export), and 'talent management' (professional development and job creation) are thus promising and hold potential, particularly as less than 5 per cent of energy generated is currently renewable (see Table 6.1) and less than 20 per cent of the private sector is energy efficient (see Table 6.2).

Likewise, access to human capital and acquiring skilled professionals are considered significant costs of doing business in the Caribbean, and confirm the previously identified trend in 'talent migration'. Despite significant investments in tourism, trade (vocational) and technical training, private sector stakeholders indicate that young professionals lack the required (social-entrepreneurial) skills and business competencies. Regional analysis indicates that well over one-third of the private sector perceives the lack of a skilled workforce as a structural challenge for business development and innovation (see Table 6.2). The systemic transformation of education for youth employability and entrepreneurship are deemed essential for building resilience of small states towards the Caribbean 2050.

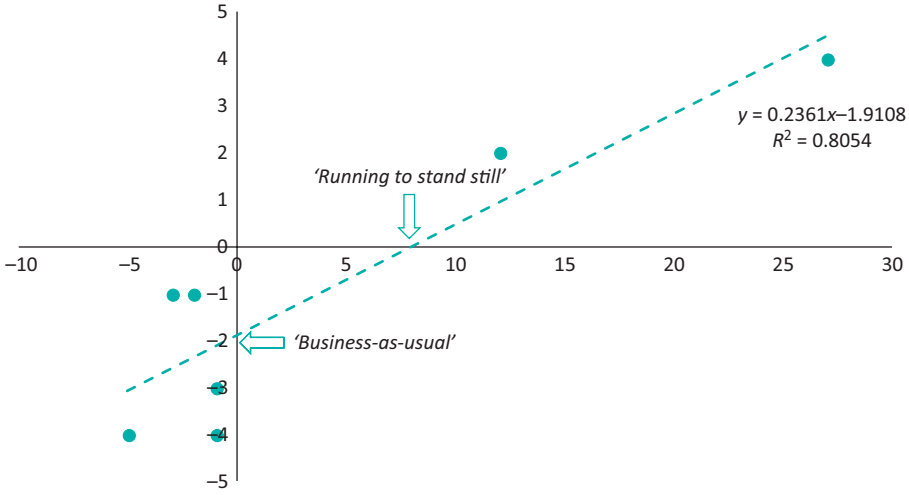
Beyond monetary costs, the conditions for doing business in the Caribbean are also significantly determined by procedural costs associated with the complexity and time required to enterprise and conduct business. In addition to market uncertainties, these procedural inefficiencies are a significant contributor to the lack of productivity and competitiveness of the private sector.

Procedural inefficiencies describe the (considerable) number of different procedures (individual permits, separate documents) that need to be completed and submitted (across different institutions), and the amount of time spent on these procedures, covering taxes, utility, trade/customs, starting business and acquiring (qualified) human resources (World Bank 2015b). This confirms the experience of declining regulatory efficiencies and qualities in the Caribbean, and emphasises the relevance and requisite need for regulatory efficiency, integration and (inter-)institutional innovation (especially in terms of competence, communication and co-ordination), within and across multiple (public and private) institutions.

Time and 'timing' are a recurrent theme in the conditions for enabling and doing business, and have a profound effect on private sector functioning and development. Analysis indicates, however, that the Caribbean may well find itself 'running to stand still' when it comes to improving market conditions for doing business (see Figure 6.12). In effect, despite improving percentile performance in terms of market efficiency and transactional proficiency, the Caribbean private sector is still losing (relative) market competitiveness and international positioning in terms of doing business (IDB 2014a; IMF 2013). While the Caribbean has improved certain conditions for doing business, improvements and changes took almost a decade to crystallise.

Thus, even if the Caribbean is changing and improving incrementally, the depth and breadth of innovation are not fast and flexible enough to remain competitive. The current hypercompetitive business environment and emerging digital ecosystems

Figure 6.12 Proactive and parallel innovation pathways, correlation of proficiency and position (2015)



put a premium on agility and the speed of innovation (Peterson 2015). Small states will need to transform themselves at an increasingly rapid pace if they are to build resilience. This capability to transform systemically is reflected in an internal capacity to respond creatively to changes and shocks *with speed and resilience* (Demas 1980).

In summary, in terms of micro-economic(market) efficiency, the Caribbean remains fragile, and has not improved significantly over the past decade, consequently reducing its (efficiency-based) economic resilience. With deteriorating (macro-) socio-economic and institutional conditions, compounded by weakening (micro-) economic and market conditions, the overall net effect on economic resilience is negative, putting the Caribbean in 'double jeopardy'. The combination of weak institutional capabilities, inefficient market conditions and static (non-dynamic) enterprise models accounts for more than 60 per cent of reasons behind the enduring economic stagnation in Caribbean small states.

To remain economically competitive, improvements in doing business are increasingly required; dynamic resilience, and the requisite agility and nimbleness of creating conditions for enabling and doing business, are thus imperative. Beyond transactional quality improvements in doing business, the time and timing of these improvements emphasises the sagacity of execution for building the (economic) resilience of the Caribbean private sector.

The future of private sector innovation will thus depend not only on 'doing the right things' and 'doing things right', but more importantly on 'doing the right things *swiftly*'. Under a 'business-as-usual' scenario, with no significant improvement and systemic change in institutional and market conditions, the private sector will regress by default and continue to lose competitiveness (see Figure 6.12).

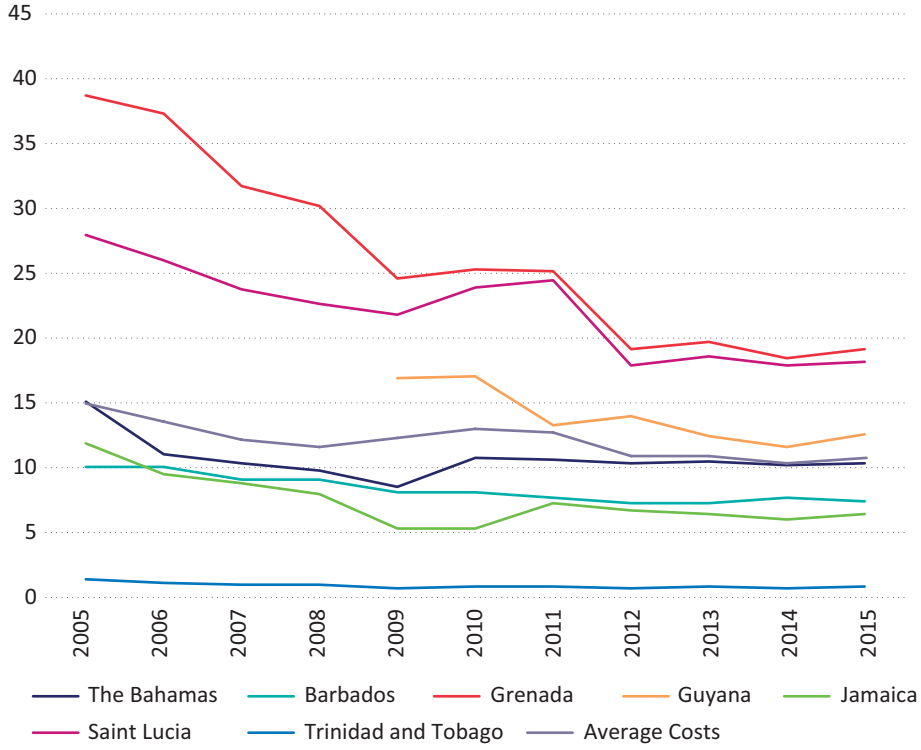
More importantly, analysis indicates that, while the costs of starting a business have gradually declined in the Caribbean in recent years (see Figure 6.13), the overall rate of innovation and new business formation has not changed and remains stagnant (see Figure 6.14). While the financial crisis and the slow recovery have dampened access to finance and new business ventures, research suggests that even if (hypothetically) financing were more easily and efficiently accessible, and there were no significant costs incurred in starting a new business, entrepreneurship would still remain below par and stagnant (see Figure 6.15). It thus seems that there are other, deeper, factors at play in the private sector, beyond the conditions for doing business.

Innovating conditions and challenges

Economic stability and efficiency are necessary conditions for enabling and doing business. The quality and qualities of (state) institutions and (market) integration are essential in developing and achieving (efficiency-based) economic resilience.

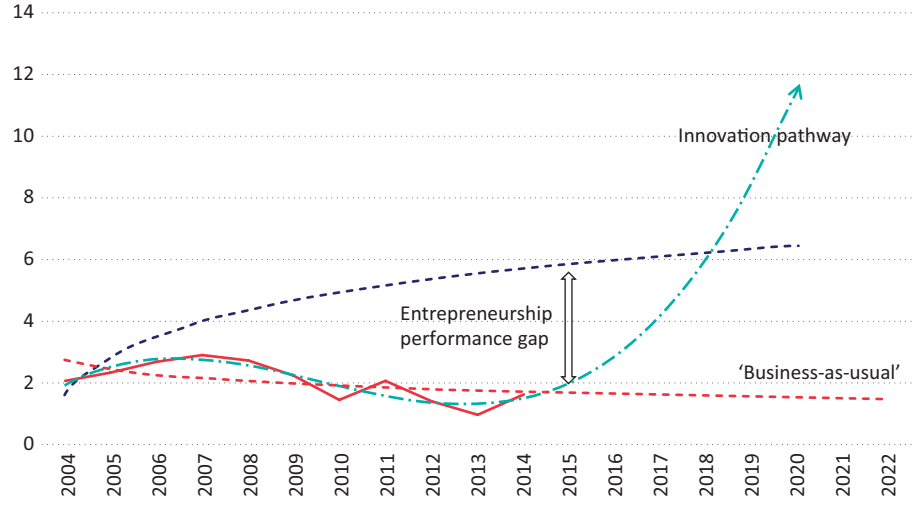
However, in the light of past and present economic stagnation and considering contemporary hypercompetitive and future disruptive environments, traditional industrial and competitiveness policies fall short, as innovation remains enigmatic, inequalities endure, and inclusive growth and ecological conservation are elusive (CDB 2014; ECLAC 2012).

Figure 6.13 Decline in costs of start-up procedures (% GNI/capita)



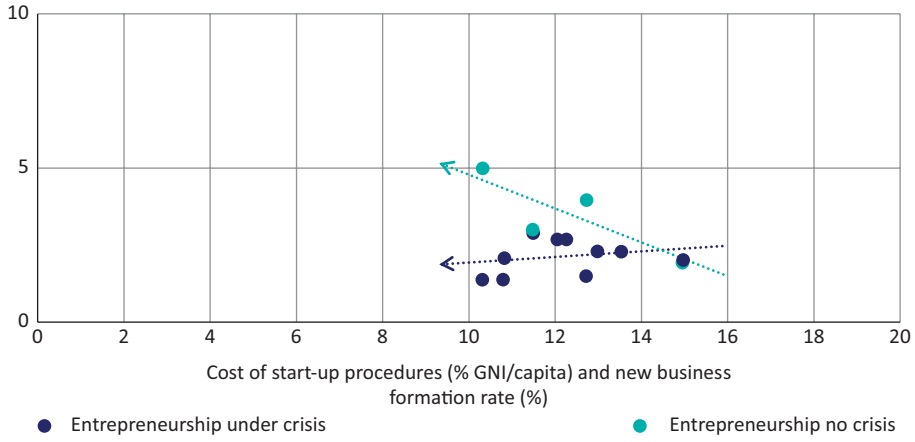
Source: World Bank 2015a

Figure 6.14 New business formation rate (% of total business population)



Source: World Bank 2015a

Figure 6.15 Hypothetical relationship between costs of start-up and new business formation under two scenarios of 'crisis' and 'no crisis'



Source: World Bank 2015a

Although the requirements and conditions for macro-economic stability and micro-economicefficiency are important and are ripe for improvement, they are not sufficient for realising a vision of sustainable innovation, inclusiveness and competitiveness for the future of the Caribbean. Premised on assumptions of static equilibrium and efficiency, economic resilience thus remains transient, if not extended and complemented by continuous, creative and 'deep' innovation within and across private sectors and business ecosystems (Peterson 2012).

Envisioning a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, and persevering along the (present) path of macro- and micro-economicefficiency improvements and (policy and market) reforms, are necessary. However, these strategies are neither sufficient nor sustainable if the Caribbean is to realise its potential and build innovation resilience for the Caribbean 2050.

While the need for national innovation, research and development, and national innovation systems is well recognised in the Caribbean (IDB 2013), past and present innovation policies and competitiveness programmes have been 'biased' towards promoting and creating conditions for 'doing business', without equal (concerted) attention and resources towards 'innovating business', i.e. business innovation and the creation of new (digital) businesses and business ecosystems (Peterson 2015). This requires an intimate and deep understanding of the dynamics and intricacies of enterprising under challenging conditions. According to private sector insights, too often this intimate understanding of innovation intricacies in small enterprise is lacking in public sector institutions and policies.

In assessing private sector development in the Caribbean, and evaluating current and future challenges for developing a competitively creative enterprising Caribbean, the Caribbean Development Bank (CDB 2014) indeed concludes that there is a need for

greater focus on innovation, quality, marketing and technology within the Caribbean small business sector. In essence, while (external) conditions for doing business require significant improvements, equally if not more important is the development of (internal) capabilities for business innovation and entrepreneurship. The two must go in tandem if the private sector is to lead and contribute to building resilience in small states.

Business innovation and new business formation are essential for sustainable economic development and inclusive growth, as they provide the main impetus for higher value-added services, job creation and professional employment. While the Caribbean is cognisant of this, analysis indicates that, over the past decade, several new services have emerged; yet these remain relatively embryonic and peripheral in comparison with established (traditional) service industries (which, according to young entrepreneurs, enjoy preferential treatment by political and financial institutions due to seniority and stability). These new services include:

- niche tourism (eco-tourism, wellness tourism);
- energy and eco-services (alternative and renewable energy technologies, and related services);
- high-tech/ICT and specialised technical/management training (higher education, edu-business);
- international business, specialised financial and creative services (business support services, marketing and social media); and
- agriculture and agro-processing.

The emerging service sectors and high-growth enterprises signify a new knowledge-intense specialisation within the Caribbean service economies. Although still embryonic, these specialised services hold great potential for Caribbean private sector innovation (see Box 6.3; IDB 2014b; Economist Intelligence Unit 2015), as they represent advanced, knowledge-driven, ecologically sensible, value-added services.

While estimates are that these emerging knowledge-intense services are less than one-fifth of current economic value added, there is certainly innovation potential in the Caribbean to build the resilience of small states. Analysis indicates that, while the potential and prospects for innovation and entrepreneurship are tacitly present in the Caribbean (GEM 2014), their fruition and realisation have lingered and lagged for well over a decade, and under conditions of 'business-as-usual' will continue to decline (see Figure 6.14).

The question and quest is thus how to incubate and accelerate this nascent capacity of (private sector) innovation and entrepreneurship toward creative enterprise and building resilience. Plotting this innovation pathway towards enabling and cultivating these emerging business eco-systems is key to realising a dynamically enterprising private sector for sustainable innovation, inclusiveness and competitiveness. In this regard, enabling and fostering youth entrepreneurship and youth engagement in business innovation will be of prime importance to building resilience. Without the

Box 6.3 Case in Point – Innovating business in the Caribbean

… the incentive framework is such that companies tend not to invest adequately. As a result of this underinvestment, companies do not modernise, and practices … have not changed significantly for many years. They use obsolete technologies, and they are frequently responsible for significant environmental damage, including water pollution. This is an issue that needs to be addressed, as the enforcement of laws and regulations is weak.

… there is a group of local companies that have developed the capacity to provide high value-added goods and services to the energy sector, both domestically and abroad. These companies offer the potential for long-term economic growth, but this will depend on their continued specialisation and expansion abroad.

Companies … have access to technological platforms that can enhance the efficiency of their enterprises. However, corporate investment in innovation lags significantly behind investment in technology. Given the importance of services in the domestic economy, this could suggest that R&D expenditure may not accurately capture the extent to which firms are innovating. However, the low level of R&D expenditure reflects the dependence of local firms on the domestic market.

Source: IDB 2014b, 3

entrepreneurial involvement and creative engagement of Caribbean youth today, tomorrow's sustainability remains elusive.

Furthermore, in light of intersectoral linkages and (horizontal) value networking opportunities between these emerging advanced services, supporting and developing (regional) business clusters and cultivating emerging business ecosystems is imperative to building the (innovation) resilience of small states. Currently, these emerging advanced service sectors remain relatively fragmented (across value networks and value chains), and current (institutional and financial) conditions for enabling and doing business remain biased against and unresponsive to the specialities of these 'savvy ecosystems' (see Box 6.4; Economist Intelligence Unit 2015; CDB 2014). Supporting innovation and entrepreneurship should not, however, focus solely on facilitating and financing individual (high-tech) start-ups, but more importantly cultivate and create an integrated ecosystem for enabling business innovation. The former 'venture model' has proved to be ineffective and inefficient, and is often conducive to further fragmentation (Peterson 2015).

Using an *innovation-based* economic resilience index (the Innovation Resilience Index, IRI), and reflecting on the (average) 'standardised business model' of Caribbean enterprise (see section 6.2.1; Table 6.2), industry-level assessment suggests strong innovation inertia in the Caribbean private sector. The IRI (Peterson 2012) is an innovation composite index that captures private sector/industry innovation, and is based on available World Bank Enterprise Survey data (World Bank 2015b).

Box 6.4 Case in Point – Innovating 'green' business in the Caribbean

Despite development and diffusion of national 'green policies' and multiple regional (investment and development) programmes across the Caribbean, and, in spite of the potential benefits related to the development of 'green energy' such as increased energy security and the potential for sustainability, there remain a number of challenges to adoption which so far have led to relatively slow innovation – less than 5 per cent of total energy generation – in the Caribbean. These barriers include (CDB 2014):

- absence of legislation, regulatory institutions and instruments; and lack of consistent and coherent policies;
- inadequate financing/high levels of public sector indebtedness; and high initial capital costs;
- infrastructural and technical limitations; and economy of scale limitations;
- limited R&D resources; and inadequate availability of skills.

A significant barrier to 'greening' the small hotel business is the lack of access to loans from banks at an attractive interest rate. It is somewhat disappointing that although many hotels had energy audits undertaken, none of the recommendations so far have been implemented. This appeared to be due to the cost of implementation. Even if significant long-term savings could be demonstrated, hotels preferred not to invest due to upfront cost. The problem was a matter of the mindsets of those at the hotels in not looking beyond financial impacts. The desire to safeguard profits and returns in the short run was seen as posing a significant barrier to green investments and green innovation.

Source: CDB 2014, 47

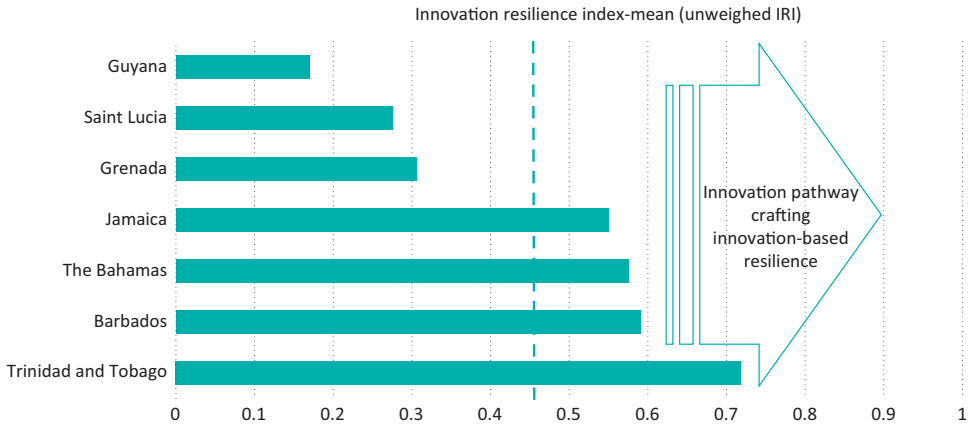
The IRI is calculated based on the (standardised and simple) average of seven dimensions and indicators: business innovation, management innovation, technology innovation, process innovation, market innovation, network innovation and service innovation. Collectively, these indicators capture innovation resilience.

Beyond the lagging rate of new business formation, business model innovation is not a distinguishing feature of the (contemporary) Caribbean private sector landscape. While the Caribbean shows some variety in (country-specific) innovation-based economic resilience (see Figure 6.16), overall the Caribbean lags in innovating business (see Figure 6.17).

More specifically in terms of innovation resilience, it lags significantly in the areas of:

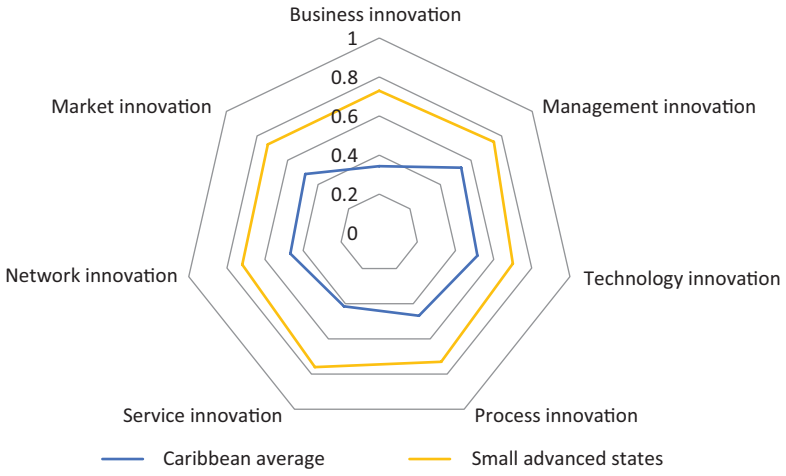
- technology innovation (on average, 10 per cent);
- market innovation (on average, 15 per cent);

Figure 6.16 Innovation-based economic resilience in Caribbean small states



Source: World Bank 2015b

Figure 6.17 Dimensions and Caribbean scores for innovation-based economic resilience (2014)



Source: World Bank 2015b

- process innovation (on average, 20 per cent);
- network innovation (on average, 20 per cent); and
- service innovation (on average, 30 per cent).

In summary, the results confirm recent findings from the Compete Caribbean programme (Economist Intelligence Unit 2015), and indicate a lack of innovative business models and dynamic business ecosystems, in addition to lagging transformative leadership and innovation management. This analysis confirms

previous findings of a relatively undifferentiated, static and unsophisticated Caribbean business environment and enterprise models (see section 6.2.1).

In moving forward, there is a clear and present need to develop transformative leadership capabilities and entrepreneurial competencies with and within the private sector. After 20 years of doing business as always, the future competitiveness of the Caribbean will depend squarely on infusing innovation and entrepreneurship within national and regional business ecosystems.

While previous national and regional policies and investment programmes have focused intensively on stimulating and supporting microenterprising and small businesses (Economist Intelligence Unit 2015), in particular new business ventures and existing productive sectors, these initiatives have proved inefficient and ineffective in light of several factors. These factors include, among others, assumptions underlying past industrial policies and market reforms, deficits in institutional capabilities, the lack of proactive engagement by the private sector, and the lack of ecosystemic (inclusive and integrated) strategies and policies (ECLAC 2012; IDB 2013, 2014b; IMF 2013).

Merely focusing on business ventures or small business clusters (either vertically or horizontally), without inclusion, involvement and incorporation of other public (e.g. educational) or private (e.g. financial) institutions and stakeholders, will not suffice – regardless of available or affordable capital – in developing entrepreneurial ecosystems and building the requisite economic resilience of small states for the future (OECD 2014). As previously noted, while the right (market) conditions for doing business need to be created, equal dedication and effort is required in leading and managing enterprise innovation, which is first and foremost a prerogative of the private sector.

In similar fashion, merely focusing on developing (basic) human capital, while necessary, will not be sufficient. Systemic transformation and hereto building resilience of small states toward the Caribbean 2050 will depend squarely on developing the 'creative capital' and entrepreneurial competencies of a new generation of leaders for enterprising. These new competencies emphasise and encompass creativity and creative thinking; (cross-cultural) communication and collaborative leadership; transformational and value-based leadership; and ethics and (corporate) social responsibility.

These required competencies for innovating and building resilience in the Caribbean of the twenty-first century necessitate structural rethinking and redesign of educational systems and developmental values. Moving beyond vocational education and technical training programmes, educational and other institutions for professional and entrepreneurial development should identify, integrate and incubate these and other relevant competencies in their programmes for innovation and development. Like building resilience in the financial sector, the (public and private) educational sector in the Caribbean requires due resilience to adapt to and align itself with the evolving innovation demands of the contemporary microenterprise private sector.

Establishing and fostering networks and linkages between and among educational, financial and established/emerging business ecosystems is imperative. In this regard, the private sector should be a key partner in the development and execution of these programmes – by means of, for example, public–private partnerships, management traineeships, entrepreneurial internships, service learning and leadership, and (digital) incubation centres, which are connected to centres of learning, development and innovation (Peterson 2015).

6.2.3 Moving forward with resilience

While persevering along the (present) path of macro- and micro-economicefficiency improvements and (policy and market) reforms is necessary, yet it is not sufficient in order to shift from recovery to resilience, to transform from stability to sustainability, and to realise the vision of a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness.

The decline in economic development across the Caribbean, and the loss of competitiveness, are attributed not to a lack of capital or labour (these are necessary, but insufficient), but to a lack of systemic transformation. Once the traditional factors of production are reinterpreted as 'know-why' and 'know-how', the key to unlocking economic resilience is the growth of (*shared*) intellectual capacity, imagination and creativity. Economic resilience in the Caribbean will require sustained and continuously developing existing resources and assets, and creating new assets and capabilities, either in search of new opportunities or in response to rapidly changing market conditions. Both innovation capabilities are urgently required in the Caribbean.

More than simply improving the conditions for enabling and doing business, the future of private sector enterprise will increasingly and urgently (need to) focus on innovation and the development of dynamic capabilities and strategic flexibility to compete and sustain competitiveness. Strategic flexibility underscores the agility and ability to act in an integrated manner to unforeseen changes, and is a critical element in building the (dynamic) resilience of small states, particularly in microenterprises and small(er) business that constitute the foundation of the Caribbean private sector.

Beyond a metaphor, the scenario and strategy of 'business-as-usual' is certain to lead to the further decline and deterioration of the Caribbean private sector. Without the requisite dynamic resilience to innovate and transform, the future of Caribbean private sector development seems quite certain: disrupt or be disrupted.

Beyond the specific and individual challenges of small states in the Caribbean, regional institutional efforts should be geared at collaboratively (re-) building and realising both efficient and dynamic resilience in a concerted manner. Convergence in innovation pathways is quintessential for transforming Caribbean futures. This will require (at the least) committed, concerted and consistent attention and actions, by both public and private sectors and stakeholders across the Caribbean.

The systemic transformation of Caribbean economies, embedding (local, national and regional) innovation, is based on *parallel* pathways for Caribbean private sector innovation, and emphasises (regardless of state-specific visions and policies) the

need for policy-driven innovation, in partnership with the private sector, based on proactive strategies and performance improvements.

The parallel innovation pathways describe three general (Caribbean) strategies for private sector innovation, focusing on:

A. **Strong institutions to build trust (and thrust) and transparency**: Strengthening institutions focuses on improving the conditions for enabling business, and includes economic governance and economic stability. The emphasis is on institutional (regulatory) quality, efficiency and (regulatory and relational) co-ordination.

B. **Savvy enterprise for efficient transactions and flexible transformation**: Stimulating markets and enabling (emerging) industries focuses on improving competences for doing (new) business, and includes (financial and service) market efficiency, (financial, service and labour) market sophistication and (regional and international trade) market orientation. The emphasis is on improving (the efficiency and flexibility of) access, availability and affordability of capital (financial, human, and markets).

C. **Smart innovation for talent development and leadership tenacity**: Energising smart innovation focuses on invigorating and realising the entrepreneurial potential and innovation performance of (new) business model innovation, and cultivating innovative business and entrepreneurial ecosystems. The emphasis is on nurturing a (new) culture of sustainable innovation, creative capital and entrepreneurial leadership for dynamic resilience.

In pursuing systemic transformation and pathways to innovation, we should not lose sight of local contexts and small (business) state environments. In true entrepreneurial fashion, focus on the pathways should be complemented by flexibility towards sociopolitical conditions and state-specific needs.

In the light of the 'idiosyncrasy' and 'stage-dependency' of building the resilience of small states, the private sector innovation pathways provide a framework to specifying and strategising small state- and economic stage-specific policies and programmes for private sector innovation and economic development (see Figure 6.18).

While the depth and breadth of innovation pathways will vary across constituents and contexts, it is essential that the private sector and its representative stakeholders be directly engaged in the development and execution of new policies and programmes geared towards innovation. Consistent with an ecosystemic philosophy, and regardless of the (specific) national goals and focus of the chosen vision and strategy for economic development, the collaborative partnership and trust between public and private sectors is a condition *sine qua non* for realising a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness. In this regard, the following basic conditions for strategising and succeeding at building resilience for the future of the Caribbean are:

- **Engagement and empowerment**: The private sector (nationally and regionally) and its many (dispersed) sectors, industries, associations and representations need to

Figure 6.18 Private sector development in small states of the Caribbean: pathways for Innovation

Sources: World Bank 2015b; Economist Intelligence Unit 2015; stakeholder interviews and private sector consultations (personal communications, 15 April to 10 May 2015).

take on a leadership role and responsibility towards sustainability. Corresponding to this, the engagement and empowerment of the private sector, industries and enterprises is imperative. In light of the SME intensity and innovation potential of emerging industries, it is recommended to target microenterprise clusters, and focus on small innovation business ecosystems. In addition, financial institutions and other alternative credit-providing agencies, as well as educational and training institutions, need to be involved more intimately in the pathway towards innovation.

- **Incubation and acceleration**: The incubation of smart innovation and the acceleration of sustainability innovation (economically, socially and ecologically) are essential processes in the creation, cultivation and commercialisation of innovative products and services throughout the Caribbean. It is therefore recommended that (more) targeted and dedicated attention and resources be invested in (regional and national systems) for entrepreneurial leadership and 'talent incubation and commercialisation'. This includes developing educational, enterprise and entrepreneurship capabilities and competencies for management innovation, service innovation, process innovation, technology innovation, market innovation and network innovation. The aim is to stimulate and accelerate the development of (new) business model innovation and innovation ecosystems, and captivate and cultivate a culture of imagination and creative entrepreneurship.
- **Co-ordination and collaboration**: Within and across both public and private sectors there is a greater need for co-ordination and collaboration, which will intensify in the decades to come, in the light of increased uncertainties and vulnerabilities. Support and (financial and non-financial) resources should be focused on activities and assets that facilitate and foster co-ordinativon and establish networks and strategic partnerships that enable quality communication, efficient co-ordination, trust-based collaboration and a structured approach for (national and regional) learning from innovation experiences (particularly as the pathway towards innovation for 2050 remains uncertain and ambiguous).
- **Integration and implementation**: There is no void of vision or paucity of policy in the Caribbean. However, integration and (efficient and effective) implementation are critical areas for institutional improvement and capacity building. Considering that (regional and international) environments are becoming more dynamic (disruptive) and demanding in terms of responsiveness, agile execution becomes a key parameter for the success of sustainability and the resilience of small states in the Caribbean. In addition, co-ordination in execution becomes a second critical parameter for building resilience. Regarding this, the development and improvement of management execution capabilities is essential.
- **Evolution and evaluation**: Dynamic environments require dynamic institutions and industries. Consequently, the evolution of (current and future) national policies, regional programmes and regulatory reforms is essential. In relation to this, it is recommended that, regardless of the depth and breadth of existing

national and regional policies and plans for 'Innovation 2030', a 'Caribbean 2020 assessment' be conducted, and regular monitoring and measuring of implementation, improvement and innovation be(come) a new 'business-as-usual'. Subsequently, an integrated digital information and 'Caribbean innovation intelligence' system is imperative.

In conclusion, envisioning a creative and enterprising private sector that is geared towards sustainable innovation, inclusiveness, competitiveness and innovation-based resilience needs a systemic transformation of the Caribbean. This requires shared governance and innovation leadership by both the public and private sectors in developing a sustainable, enterprising society of innovation and inclusion. Such a transformation is built on proactive and parallel innovation pathways to develop strong institutions for enabling business, savvy enterprise for doing business and smart innovation for transforming business.

6.3 Conclusion

It is a truism that building the resilience of small states is imperative for Vision 2050. Envisioning a creative and enterprising private sector for sustainable innovation, inclusiveness and competitiveness, and given the status of small state Caribbean economies and private sector developments and demands, it is clear that a scenario and strategy of 'business-as-usual' is no longer a viable option or a sustainable proposition. If 2005 was a 'time to choose' (World Bank 2005), then 2015 was a 'time to act' … imaginatively, inclusively, intelligently and innovatively. Reflecting on the systemic vulnerability and structural challenges of the Caribbean, building the resilience of small states is no longer a luxury, but a clear and present necessity in which the status quo needs to be challenged and changed.

Like creative architects, Caribbean small states need to purposefully and imaginatively conceptualise and cocreate a new landscape, and creatively destroy old architectures and frames of reference. Charting a new pathway and crafting resilience are thus not questioned or questionable. More importantly, at both the international and regional, as well as the national and local, levels we need a new discourse and dynamic models and mentalities for building the resilience of small states. If we are to build the future of small states for the Caribbean by 2050, then we can no longer rely on paradigms, polices and parameters for 'bouncing back', i.e. restore, recover and/or reform; *ipso facto* we will need to explore and build new resiliency models, modalities and mechanisms for 'bouncing forward' towards structural change and systemic transformation.

If we are to realise our shared vision of a globally competitive and regionally enterprising private sector, in building the resilience of small states for the Caribbean 2050, then we can no longer separate enterprise from entrepreneurship, for both are synonymous to thriving economies. We should no longer pursue passive policies, antagonistic 'public versus private' positions, and obtrusive procrastinations. If we are to build the resilience of small states for the Caribbean 2050, then we should no longer disconnect the economy from ecology, for, without the latter, the former

simply ceases to function and exist. If we are indeed to realise our vision for the future of the Caribbean, then we need to think and act passionately, proactively and purposefully in creating that desired future, and transform ourselves in a systemic fashion to benefit the future of Caribbean generations. In this generation we must go forward, resiliently.

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Chapter 7

The Role of Youth in Accelerating Caribbean Development

Heather Cover-Kus, Wonderful Hope Khonje, Alicia Matheson and Layne Robinson[1]

7.1 Introduction

As the world embarks on a new set of Sustainable Development Goals endorsed by the international community in September 2015, it is important to recognise the role of young people as key stakeholders in achieving any development goals. As they will inherit the societies and world in which they live, young people have a vested interest in creating a future that is prosperous and peaceful. Development that does not fulfil the needs of young people and equip them with the capacity to effectively transition to the next phase of life is unlikely to be sustainable. Consequently, to be truly effective in achieving the Caribbean we want, we must consider the current and future challenges of the region's youth. In the Caribbean, 60 per cent of the population are under 30 (Forbes 2015). This significant segment of the population is a critical force for change and development, yet young people still face major challenges. They are often burdened by unemployment and underemployment. The Caribbean Development Bank (2015) reports that the youth unemployment rate for countries in the region with available data is on average 25 per cent, while the adult rate ranges between 6 per cent and 15 per cent. Moreover, a regional youth unemployment rate of 25 per cent is nearly double the global average for youth unemployment, which is 14 per cent (World Development Indicators 2015).

The issues of high unemployment and lack of opportunities for young people have wider economic and social consequences. Studies link these factors to migration and 'brain drain', and problems of crime and violence that hinder the further development of these small countries.

This chapter aims to review the challenges youth in the Caribbean face, with a particular focus on youth unemployment. It also explores some options for addressing these challenges, and for more broadly encouraging youth development. The chapter continues with an assessment of youth development in the region (section 7.2), and then explores the issues and the challenges that young people in the Caribbean face (section 7.3). Section 7.4 examines youth unemployment more closely, while section 7.5 looks at strategies for tackling youth unemployment, particularly how governments can help facilitate youth entrepreneurship. Section 7.6 offers recommendations for mainstreaming youth development, while section 7.7 concludes the chapter.

7.2 Measuring youth development in the Caribbean

A review of youth development in the Caribbean is a good first step to understanding young people and their challenges. The Commonwealth defines youth development as 'enhancing the status of young people, empowering them to build on their competencies and capabilities for life. It will enable them to contribute and benefit from a politically stable, economically viable and legally supportive environment, ensuring their full participation as active citizens in their countries' (Commonwealth Secretariat 2013a).The Commonwealth's Youth Development Index (YDI) seeks to capture a quantitative measure of youth development on a scale of 0 to 1, with 1 being the highest. The index is a composite of 15 key indicators (see appendix 1), which collectively measure youth development in 170 countries and 51 of the 53 Commonwealth countries. The YDI has five domains, which measure levels of (1) education, (2) health and well-being, (3) employment, (4) political participation and (5) civic participation for young people.

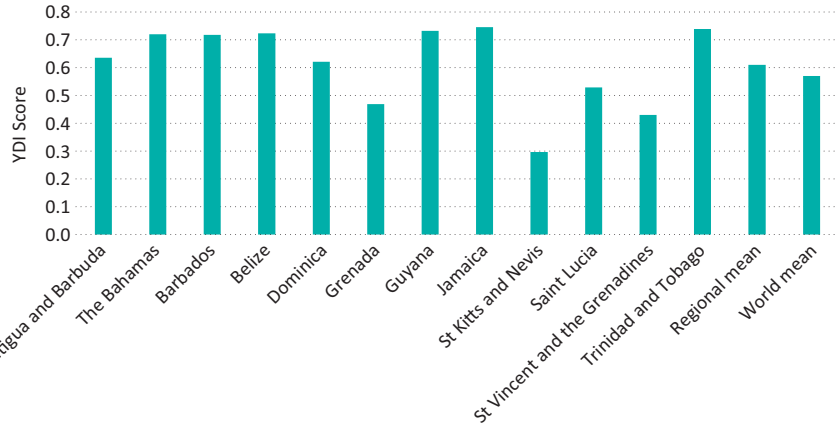
Figure 7.1 shows that, as a region, the Caribbean fares relatively well for youth development, with a mean score of 0.61 compared with a world mean of 0.57. Most of the countries fall into the medium classification of youth development.

However, the graph also highlights the fact that Caribbean young people are not a homogeneous group. The YDI score varies greatly across the region, with a high of 0.75 for Jamaica and a low of 0.30 for St Kitts and Nevis. These differences showcase the importance of country-specific youth development policies and programmes to meet differing needs.

7.3 Youth issues and challenges in the Caribbean

Youth issues in the Caribbean cannot be fully understood in isolation from the overarching socio-economic, political, cultural and ecological circumstances of the

Figure 7.1 Youth Development Index scores for the Commonwealth Caribbean



Source: Commonwealth Secretariat 2013a

Table 7.1 Youth Development Index scores by domain for Commonwealth Caribbean

Country	YDI score	Education (28%)	Health and well-being (28%)	Employment (28%)	Political participation (8%)	Civic participation (8%)
Antigua and Barbuda	0.63	0.78	0.59	0.73	0.29	0.33
The Bahamas	0.72	0.76	0.83	0.74	0.54	0.33
Barbados	0.72	0.85	0.86	0.68	0.29	0.33
Belize	0.72	0.78	0.70	0.81	0.63	0.44
Dominica	0.62	0.74	0.56	0.65	0.62	0.33
Grenada	0.47	0.79	0.75	0.01	0.12	0.33
Guyana	0.73	0.77	0.85	0.72	0.42	0.57
Jamaica	0.75	0.84	0.83	0.70	0.58	0.46
St Kitts and Nevis	0.30	0.41	0.52	No data	0.12	0.33
Saint Lucia	0.53	0.41	0.72	0.57	0.37	0.33
St Vincent and the Grenadines	0.43	0.43	0.74	0.14	0.45	0.33
Trinidad and Tobago	0.74	0.84	0.72	0.80	0.58	0.44
Regional mean	**0.61**	**0.70**	**0.72**	**0.60**	**0.42**	**0.38**

Source: Commonwealth Secretariat 2013a

countries within which they live. The Caribbean has unique cultural and historical experiences that, coupled with the current political and economic conditions, define youth experience in these countries. Young people face an increasing array of challenges, exacerbated by socio-economic and political shifts that are happening today at an extraordinary rate. These changes place greater demands on young people to adapt, devise solutions and become more resilient in order to enhance their life chances. The challenges often vary at the individual country level because of historical, cultural, economic and environmental factors.

The YDI is a useful starting point for understanding the impact of the social, economic, political and cultural factors on youth development in the Caribbean. As seen in Table 7.1, the region scores rather well in the areas of education (0.70) and health and well-being (0.72). However, the political and civic participation domains have significantly lower scores, with regional means of 0.42 and 0.38 respectively. These categories may nonetheless suffer from data gaps, which might contribute to the low scores.

These scores support findings in the Commonwealth's report *Challenges and Opportunities for Youths in Small Island Developing States of the Commonwealth Caribbean* (2013b), which lists the challenges of Caribbean young people as:

- lack of opportunities to participate and have their voice heard;
- divisive politics which lead to division among young people;

- a pervasive culture which teaches that young people should be seen and not heard;
- single-industry economy (leading to a lack of employment opportunities);
- lack of financial resources;
- mass migration of trained youth – 'brain drain'; and
- lack of vision on the part of leaders.

These challenges have little to do with education or health and well-being. Rather, they centre on matters of employment opportunities, political issues and civic engagement. Given the importance of employment to overall youth development, this chapter will explore youth unemployment in more detail.

7.4 Youth unemployment

In the employment domain of the Commonwealth's YDI, the Caribbean as a region averaged 0.60 (see Table 7.1). The employment domain accounts for 28 per cent of the index and is made up of two indicators: youth unemployment, and the youth-to-total-unemployment ratio. The 0.6 score is lower than that of the other two equally weighted domains (education, and health and well-being) and as such is a key factor in driving down the overall YDI score.

Youth unemployment is a global challenge facing young people across both developing and developed countries. The impacts of tendencies towards jobless growth, flexible employment and temporary engagement – even for long-term jobs – evidenced since 2007, have continued and have affected young people disproportionately. Indeed the International Labour Organization (ILO) notes that, for every one older person unemployed, there are approximately three young persons unemployed (ILO 2012a). There is also the issue of the mismatch of skills, where 'over-education and over-skilling coexist with under-education and under-skilling' (ILO 2013).

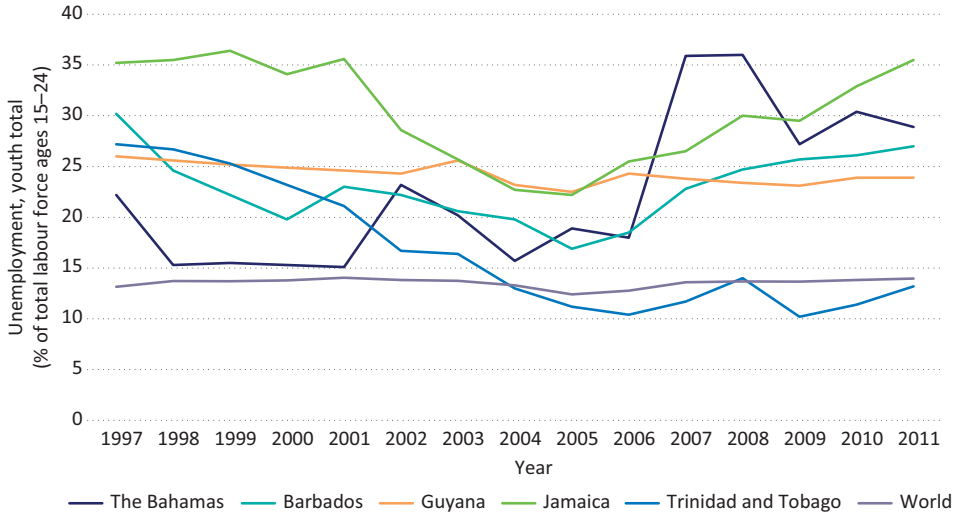
With specific reference to developing countries, the ILO notes that the problems of over qualification and under qualification also exist. Moreover, two thirds of the youth population are under engaged, in that they are unemployed, are under employed, have left the labour force or are not in educational institutions/programmes.

Youth unemployment is an issue the Caribbean has been struggling with for decades (see Figure 7.2). Nearly 20 years ago the ILO reported that:

> *The youth cohort looms larger in terms of unemployment. An estimated 404,000 persons or 15% of the region's labour force are unemployed. Of this 51% or 203,000 are between the ages of 15-25. As a result, youth unemployment rates are substantially above the national averages across the region and average around 40% in the 15-19 age group and 30% in the 20-24 age group.*
>
> ILO 1997

Unfortunately, there are no signs of an easing of this problem. Between 2007 and 2013, youth unemployment rose by 4 million, with the biggest increases occurring in the

Figure 7.2 Youth unemployment rates in selected Caribbean countries, 1997–2011



Source: World Development Indicators 2015

Caribbean and Latin America: from 13.7 per cent in 2008 to 14.3 per cent in 2011 (ILO 2012a). Caribbean-wide data indicates that Saint Lucia, Dominica, St Vincent and the Grenadines, and Jamaica have the highest youth unemployment rates (CARICOM 2012).

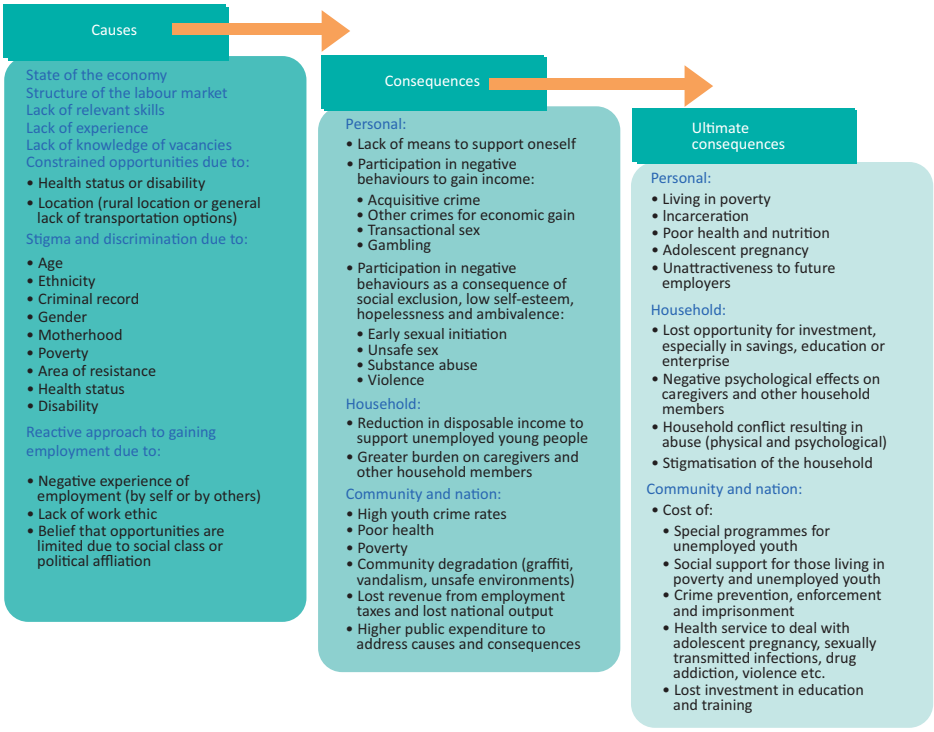
The UN Economic Commission for Latin America and the Caribbean (ECLAC) attributes these high rates of youth unemployment to the reduction of economic expansion and reduction in foreign direct investment. Additional challenges include loss of preferential treatment in agriculture products, a depressed market for minerals, losses due to lack of market diversification, stagnation of the manufacturing sector in the face of increased competition, and the increasing vulnerability of the tourism sector. As a consequence, the labour market is contracting. There has also been a spike in the rate of growth of informal or part-time jobs as a source of income generation. To effectively combat poverty, therefore, governments must first resolve and win the battle against youth unemployment (UN ECLAC 2004).

The persistence of youth unemployment has both economic and social consequences. The non-involvement of youth not only keeps the Caribbean from benefiting from a significant component of its productive capacity, but also – alarmingly – has the potential for exacerbating social tensions and nurturing a climate of anti-social behaviour, criminality, virulence and violence.

The Caribbean Development Bank's 2015 report, *Youth Are the Future: The Imperative of Youth Employment for Sustainable Development in the Caribbean*, lays out both the causes and the possible consequences of youth unemployment for the region (see Figure 7.3).

This sort of analysis not only drives home the impact of inaction regarding youth unemployment, but also highlights trigger points for effecting change.

Figure 7.3 Youth unemployment: summary of causes and potential consequences



Source: Caribbean Development Bank 2015

7.5 Strategies for tackling youth unemployment

Given the severity of youth unemployment in the Caribbean, and the fact that it has been an enduring challenge for several years, devising a strategy for addressing the problem has become a priority. There should be a multipronged approach to tackling youth unemployment. The final report from the ILO's regional seminar, *Addressing the Employment Challenges of Caribbean Youth in Times of Crisis* (ILO 2012b), offers several recommendations for future action on youth employment in the region. Among them are changes which seek to (1) create greater economic opportunities and (2) enhance education and skills. The region can also benefit from policies that (3) facilitate youth entrepreneurship.

7.5.1 Create greater economic opportunities

Caribbean stakeholders at a 2012 regional meeting highlighted the need for the development and implementation of macro-economic policies and strategies to promote economic and employment growth (ILO 2012b). Countries should consider the development of youth employment policies that are integrated with macro-economic policies and that stimulate better co-ordination and collaboration among agencies involved in youth employment and development. This solution has

been alluded to in chapter 2, where it was noted that policies that deal with the issue of youth unemployment will also have the added benefit of decreasing the crime rate, in addition to allowing young people to pursue new opportunities.

7.5.2 Enhance education and skills

It is important to improve the links between traditional education and technical and vocational education and training programmes, and the demands of the labour market by the strengthening of partnerships with the public and private sectors, to support curriculum development and the expansion of work-based learning such as apprenticeships and internship programmes. Chapter 1 highlighted that, for the Caribbean to capitalise on opportunities in 2050, the region must focus on key skills and competencies, such as critical thinking and problem solving, if it is to fully participate in the knowledge economy. Furthermore, chapter 4 suggested that the region should assess the formal education system and, if necessary, curricula and programme content should be re-engineered to incorporate orientation in the competencies of creativity, entrepreneurship, team building and leadership skills. These changes will assist in the reduction of youth unemployment, by ensuring that both the technical and critical-thinking skills young people acquire through the education system make them more employment-ready.

7.5.3 Facilitate youth entrepreneurship

The slow recovery from the last economic recession has meant a period of jobless growth for many countries in the Caribbean. The ability of the market to provide jobs has weakened. In the midst of this economic environment, it is important to consider options that enable young people to create jobs for themselves though entrepreneurship.

Entrepreneurship can help to foster economic empowerment and address youth challenges. Entrepreneurial behaviour can also help small states generate innovative solutions to some of the challenges they face such as logistical issues, climate change and limited institutional capacity. Chigunta (2002) outlines a number of reasons for promoting youth entrepreneurship, including its ability to:

- create employment for the entrepreneurs themselves and for those they employ;
- integrate marginalised young people into the economy;
- reduce social and psychological problems linked with unemployment;
- help develop and promote skills and innovation in young people;
- stimulate the local community through the provision of goods and services; and
- spread the benefits of new technologies and economic trends, because young entrepreneurs are often most responsive to them.

The UN Conference on Trade and Development (UNCTAD) has collaborated with the Youth Affairs Division of the Commonwealth Secretariat to develop the forthcoming *Policy Guide on Youth Entrepreneurship*. The framework uses the

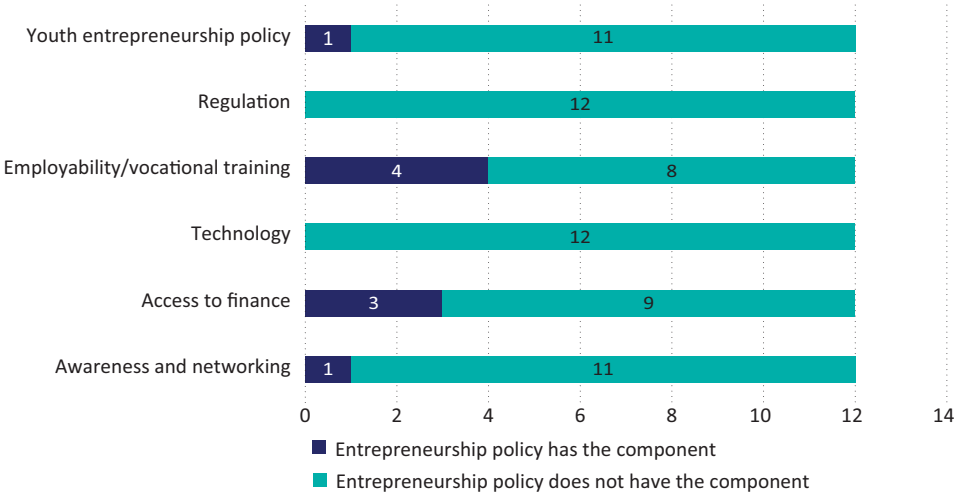
Figure 7.4 Key components of the entrepreneurship policy framework

Source: UNCTAD 2012

same six priority areas as UNCTAD's 2012 publication, the *Entrepreneurship Policy Framework* (see Figure 7.4), but provides measures that have a direct impact on youth. Taking into account the ongoing challenges facing young people, including unemployment, poverty and access to finance, the *Policy Guide* offers youth-specific recommendations that policy-makers will need to consider when developing a youth entrepreneurship strategy.

Research by the Commonwealth Secretariat (2015) shows that very few Caribbean countries have a youth entrepreneurship policy that encompasses all six youth-specific components suggested by the *Policy Guide* (see Figure 7.5). Most notably, their entrepreneurship policies do not address issues of optimising the regulatory

Figure 7.5 Implementation of elements of the *Policy Guide* among Commonwealth Caribbean states



Source: Authors' calculations

environment or facilitating technology exchange and innovation. While education and vocational training is the most widely represented element, it is still not consistently included in entrepreneurial policies.

There are several challenges that prevent small Caribbean countries from fully implementing the aspects of the *Policy Guide*. Among these are:

- **Limited data available to create an effective youth entrepreneurship policy**: Effective policy should be grounded in research to truly reflect the country's needs. Data is required to achieve the policy objectives suggested by the *Policy Guide*, particularly to identify country-specific challenges and to set goals and priorities. Small states such as those in the Caribbean are often hindered by a lack of data, which may result in policies that do not achieve the desired results effectively.
- **Lack of youth-specific regulations and incentives**: The *Policy Guide* suggests minimising regulatory hurdles where appropriate. Young entrepreneurs may need tailored regulations to ensure that they are given the support they need to enter the market. Making it easier for young people to navigate through the start-up requirements will stimulate business formalisation and uptake. In addition, the introduction of youth-friendly and youth-oriented business services will reduce traditional biases and negative perspectives, and ultimately increase participation.
- **Small state educational challenges**: Among other things, small states' education systems struggle with resource dispersal and scatter (Steward and Thomas 1996), absence of local research, evaluation and consultancy capacity (Lloyd and Packer 1994; Crossley and Holmes 2001) and tension between local educational content and that of international qualifications (Bray and Steward 1998). More specifically with regard to entrepreneurial education, there are likely to be few qualified teachers. Furthermore, the education system in many small states focuses on rote learning to pass exams, rather than more flexible creative learning styles (Bacchus 2008). While this approach prepares people to become skilled employees, it does not encourage them to become employers or to initiate a start-up business.
- **Small private sectors to facilitate technology exchange**: While the *Policy Guide* suggests promoting inter firm networks that help spread technology and innovation, the private sector in some small states is small and not well developed. There are limited opportunities to network in some fields, particularly for technology-based ventures, as there might not be any local private companies with which to connect.
- **Structure of the financial systems does not encourage lending to youth entrepreneurs**: Some small states have financial systems that are designed to attract overseas funds and serve the needs of international clients, as opposed to those of local populations. Therefore, small states face a challenge in developing a system that is responsive to the needs of their young population, while still attracting the overseas funds that some rely on.
- **Lack of economic diversification limits networking opportunities**: Many small states have limited natural resources and are challenged by limited diversification

possibilities (International Monetary Fund 2014). As a result, for young entrepreneurs looking to enter the market in an underrepresented industry, there may be few local businesses with which to network.

The Commonwealth Secretariat (2015) put forward five areas of action to further facilitate youth entrepreneurship. These are:

1. **Develop entrepreneurship policies**: As entrepreneurship is a vital part of economic growth and development, it is recommended that governments develop policies aimed at promoting the emergence of new entrepreneurs and facilitating new business start-ups. The *Entrepreneurship Policy Framework and Implementation Guidance* and the *Policy Guide on Youth Entrepreneurship* are great tools that can be used to develop effective policies.

2. **Design an entrepreneur-friendly regulatory environment**: The presence of a strong regulatory environment, which is easy to understand and does not deter budding entrepreneurs, will serve to stimulate economic opportunities for young people, ensure governments are able to generate tax revenues from businesses and ultimately alter the stereotypes that regulators have of young people. Malta's Business First programme is a great example of a user-friendly regulatory project that can be easily replicated in other small states.

3. **Use education as an agent of cultural change**: To truly encourage young people to start businesses, the perception that both young people and entrepreneurs are risky investments needs to be combated. Providing an environment that embraces risk taking and rewards creativity and innovation will help to create a positive attitude towards young entrepreneurs. Introducing entrepreneurial education early on in the national curriculum can help foster a culture that embraces more risk taking, a characteristic needed by entrepreneurs. An education system that encourages creativity and problem solving helps to generate an innovative and dynamic society and economy.

4. **Encourage active engagement and networking**: Small states can capitalise on the very characteristic that makes them a unique grouping: their size. Their relatively high internet penetration, coupled with their close-knit communities, allows for effective and meaningful networks to be developed. Young entrepreneurs can be linked more easily with successful business people, either locally in person or regionally and internationally via the internet.

5. **Develop specific youth entrepreneurship policies**: While it is possible for the young people to benefit from wider entrepreneurship policies, specific and targeted youth entrepreneurship policies will be more effective and productive in reaching out to the young people and gaining their support and interest. To encourage more successful young people entrepreneurs, governments of small states should deepen their commitment to targeted youth development.

Undertaking these recommendations can help the Caribbean to create a policy environment which supports young people to start their own businesses and which facilitates the growth and success of those businesses.

7.6 Mainstreaming youth development

However, it is important to note that any policy aimed at tackling youth unemployment will be more effective in an environment of broad-based youth support. Given this, governments of the Caribbean region should deepen their commitment to youth development and empowerment.

More practically, they should seek to include and mainstream youth development through three main avenues:

1. building the evidence base for youth policies;
2. strengthening youth leadership and governance;
3. promoting youth economic and social citizenship.

7.6.1 Building the evidence base for youth policies

Currently, 16 of 17 Commonwealth Caribbean countries have dedicated national youth policies, which vary greatly in their level of currency. The Caribbean has also taken steps to address some of the critical issues surrounding the relevance, responsiveness and sustainability of regional youth policy frameworks. In this regard, CARICOM has also adopted a Youth Development Action Plan which, based on the landmark situation analysis of the CARICOM Commission on Youth Development (CCYD), seeks to help member states meet six regional CARICOM Youth Development Goals.[2] While the formulation of policies is widespread and has usually been led by a government ministry or department of youth affairs, two main issues have hampered policy effectiveness. First, a lack of mainstreamed approaches to multisectoral implementation partnerships, within and outside governments, has often limited interventions to seemingly identifiable 'youth issues' such as education, sport and culture. There is a need, however, to ensure that all national development policies take into account the needs of young people; respond in an integrated way, allowing one sector to reinforce efforts in another; and consider the effects of actions on youth well-being.

Second, all stages of the policy cycle, from formulation through implementation to monitoring, have been affected by a lack of systematic data collection and analysis. Certainly, the region has benefited from some good research on the situation of youth, but these studies have been infrequent and have only recently increased in frequency since the new millennium, as attention is paid to ensuring that youth development responses are evidence-based.[3] Among the most seminal regional research reports have been the 2003 report of the World Bank on *Caribbean Youth Development: Issues and Policy Directions*; the 2010 CCYD report *Eye on the Future: Investing in Youth Now for Tomorrow's Community*; a chapter of the 2012 *Caribbean Human Development Report* (CHDR) entitled 'Reducing Youth Violence and Enhancing Youth Resilience'; and now, most recently, the 2015 Caribbean Development Bank's report on youth employment, entitled *Youth Are the Future: The Imperative of Youth Employment for Sustainable Development in the Caribbean*. These have all raised the profile of young people as partners in development; yet,

through their own shortcomings, they have also highlighted the need for more and, up-to-date qualitative and quantitative data on youth.

7.6.2 Strengthening youth leadership and governance

In the Commonwealth Caribbean, there are some, albeit imperfect, examples of regional institutional frameworks for youth participation in development dialogue and initiatives. There is the Caribbean Regional Youth Council (CRYC), which is an independent, democratic federation of national youth councils and other relevant national youth platforms.[4] The CRYC is an affiliate of the Commonwealth Youth Council. However, it remains challenged by the relative weakness of some national councils and availability of resources to carry out its mandate. In addition, there is the CARICOM Youth Ambassadors Programme, which is a youth network closely affiliated to the CARICOM Secretariat. The programme has contributed to shaping the regional human and social development agenda through participation in governance and policy meetings of the Secretariat. However, the mainstreaming of youth participation into all areas of the CARICOM agenda (beyond social development) remains inappropriately elusive (Gilbert-Roberts 2014).

7.6.3 Promoting youth economic and social citizenship

To date, economic interventions that address young people's needs and concerns are more often treated as social protection measures than as socio-economic development strategies. Global trends in addressing the economic needs of children and young people have now adopted a model of youth economic citizenship that integrates financial education, social education and financial inclusion as key elements of youth economic empowerment and financial capability (CYFI 2013).

Such a framework will be important for the Caribbean to influence the preparedness of young people for economic life more effectively and address one of the more intractable economic issues confronting young people, which has received significant attention: unemployment/underemployment.

A notable omission in the Caribbean youth development landscape is the absence of integrated youth employment policies, as mandated by the ILO, and policies that address financial inclusion and financial education.

The link between full economic participation and social well-being cannot be overstated. Reducing incidences of ill-health among young people is a priority area of action. Communicable (including HIV and sexually transmitted infections) and non-communicable diseases (including diabetes and obesity), mental health, substance abuse, violence-related injuries, and vehicular-related injuries and mortality are all areas of concern (see, for example, UNDP 2012; CCYD 2010; Bailey and Coore-Desai 2009; St Bernard and Matthews 2003). The ability of young people to access social security benefits, housing and healthcare must also be addressed. Improvements in these areas are likely to coincide with reductions in the level of child and youth poverty. Young people have consistently indicated their willingness and ability to

actively participate in the conceptualisation and execution of strategies, programmes and initiatives to address these development challenges.

7.7 Conclusion

This chapter's exploration of the current issues that young people face in the Caribbean is an important element in securing the sustainability of the region's development vision for 2050. Supporting young people in tackling the challenges that they face is a critical part of both achieving and sustaining the region's development goals.

While the YDI score of 0.6 for the region suggests that young people in the Caribbean are doing relatively well, the number masks the fact that there are persistent challenges that continue to plague the region. Chief among these is youth unemployment. Tackling this issue requires a multipronged approach that covers creating economic opportunities, enhancing education and skills, and facilitating youth entrepreneurship.

Notes

1 Inputs to this chapter were provided by Ayesha Constable, Henry Wallice Charles and Terri-Ann Gilbert Roberts.
2 These goals reflect and endorse the objectives of global frameworks such as the Millennium Development Goals, the World Programme of Action on Youth and the Convention on the Rights of the Child as well as the Commonwealth Plan for Action for Youth Empowerment.
3 The 2014 Baku Commitment to Youth Policies adopted at the Global Forum on Youth Policies – in which Commonwealth Caribbean young people, policy-makers and youth development experts participated – calls for knowledge-based and evidence-based youth policies to secure more effective youth development action.
4 There are currently 11 national youth councils or national youth organisations that are members of the CRYC.

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Chapter 8

Citizen Security: Achieving a Safe and Secure Caribbean

Anthony Clayton

8.1 National and citizen security

The concept of national security includes all of the measures taken by a state to ensure the survival of the nation, the protection of national interests and the integrity of the state, and the safety and welfare of the people.

There are many potential challenges to the integrity of the state and to the welfare of its citizens. These threats include the use of conventional or unconventional forces to destabilise a government, annex resources or impose regime or policy change; a range of threats to economic, institutional and social structures, such as trafficking in people, weapons and illegal narcotics; money laundering and tax evasion; a range of resource threats, such as the need to ensure adequate, affordable supplies of energy, food and water; and environmental threats, such as hurricanes, droughts and floods.

So national security includes all necessary measures to deter, mitigate and protect against significant external or internal threats. This requires the maintenance of police, intelligence and other security services to ensure the maintenance of law and order, to control and deter crime, corruption, violence and disorder, to maintain cyber security, to protect sensitive information and to prevent fraud. It may also require the maintenance of standing armed forces to deter attack by conventional or unconventional forces, including terrorism and narcoterrorism, and to support the police and civil authorities in the event of civil unrest. Finally, it involves ensuring civil defence and emergency preparedness, protecting vital infrastructure and building resilience into social and economic systems so that they can withstand shocks.

Citizen security is one of the primary objectives of national security, but the concept of citizen security also incorporates factors that can cause a reduction in perceived safety and the quality of life, such as fear of violence, corruption in public life, incivility, the loss of safe public spaces, poor-quality public transport, the growth of informal settlements and enclaves dominated by particular gangs or political factions, the retreat of the middle class from deteriorating urban neighbourhoods, and the loss of businesses and public services. If these problems become entrenched, they can effectively undermine the process of development. High levels of crime destroy social capital by generating fear, eroding the level of trust in society, undermining cohesion and weakening institutions (IDB 2012). Crime and violence can therefore be serious obstacles to the formation of social and human capital, sustainable economic development, investment and economic growth.

The extent, nature and combination of these problems varies significantly, both within and between Caribbean nations, so every country has to develop specific programmes to address the local factors that are doing the most to undermine citizen security. The IDB 2012 report notes:

> *Given the multiple layering of crime and violence, policymakers are beginning to shift away from menu-like checklists of single-sector interventions: citizen security approach is one such integrated approach… citizen security approaches incorporate interventions from varied disciplines and policy perspectives that prevent and reduce violence through a menu of different initiatives.*
>
> IDB 2012, 5

There are also key commonalities. As the *Caribbean Human Development Report* 2012 notes, it is also important to focus both national and regional programmes of action on prevention and institutional strengthening, on the root causes of violence, such as poor-quality urban environments, bad schools and the lack of legitimate economic opportunity, and on building effective, accountable police and judicial systems (UNDP 2012a).

The quality of police and judicial systems is a particularly important determinant of citizen security. *The Caribbean Human Development Report* states:

> *Of primary concern with citizen security is the issue of public confidence in state capacity to protect citizens and ensure justice. If citizens lack confidence in the police, the judiciary and other public authorities, no amount of repression will restore security. The success of any law enforcement system depends on the willingness of the people to participate and contribute. For the state to enjoy the trust and commitment of the people, it must strive to eradicate exclusion, improve transparency and create opportunities that encourages a sense of belonging for all.*
>
> UNDP 2012a, V

Citizen security also takes account of the reciprocal relationship between the causes and the consequences of crime: high levels of crime serve to undermine development and entrench poverty, which then creates the conditions for a further surge in crime. This effect operates at both the individual and societal levels. At the individual level, the World Bank states:

> *Crime and violence victims face trauma and stress related to experiencing violent situations, both from community violence and gangs, and from intra-family violence. The consequences include low educational attainment, a lack of employment alternatives, dysfunctional families, high teenage pregnancy rates, an increase in HIV/AIDS and sexually transmitted diseases, child and teenage prostitution. In addition victimization results in social stigmatization (sometimes exacerbated by the media), increased drug and alcohol abuse, greater levels of gang membership and delinquency. All of this fuels criminal activity and the continuation and deepening of the cycle of violence.*
>
> World Bank 2012a

Women are significantly more likely to be affected by many of these issues. For example, the VAWG report (World Bank 2015) states that women are about six times more likely to be the victims of domestic violence than men.

At the societal level, there is an equally broad range of destructive macro-economic and social impacts. The National Security Policy for Jamaica (Government of Jamaica 2014) states that:

> *Crime has deterred investment, destroyed capital formation and discouraged business development. The cost of crime and corruption includes lost life expectancy, injuries and health care, but also includes the higher cost of doing business in a low-trust society, losses to theft and extortion, business closures, capital flight, the emigration of skilled workers and the loss of foreign investment.*
>
> Government of Jamaica 2014, 4

This can be at least partly explained by the fact that the perception of risk is not the same as statistical risk; it varies by context and between individuals. For example, most people take threats far more seriously when they believe themselves or their families to be directly exposed to the risk, so will effectively assign a lower value to a stranger being murdered further away. The killing of a friend, relative, acquaintance or neighbour is more directly and personally threatening. Violence is typically concentrated in particular areas, so that perpetrators are also more likely to be victims. In Jamaica, for example, the homicides are concentrated in four of the nineteen police divisions. This means that people living in areas with relatively low levels of violence do not feel that they are exposed to undue personal risk, which indicates a potential disconnect between the interests of two key groups. Decision-makers in society tend to live in secure homes in good areas, and therefore are less likely to be personally affected by violence, while the majority of the victims of violence have little influence on the decision-making process, and can therefore do less to change their circumstances. By contrast, in Italy and Colombia, the elite (including judges and politicians) were targeted and, probably as a result, there was sufficient political commitment to start breaking the power of organised crime in those countries. This highlights the critical importance of strengthening social cohesion in all attempts to increase citizen security.

The *Caribbean Human Development Report* (2012) concludes, therefore, that:

> *Caribbean countries need to focus on a model of security based on the human development approach, whereby citizen security is paramount, rather than on the traditional state security model, whereby the protection of the state is the chief aim. Indeed, the contrast between prevention on the one hand and repression and coercion on the other is ill conceived. Social inclusion to help prevent crime and violence and efficient and effective law enforcement are by no means incompatible or mutually exclusive. In a truly democratic society, broad based social inclusion and swift criminal justice – or 'prevention' and 'coercion' – serve to reinforce and complement each other.*
>
> UNDP 2012a, V–VI

The broader concept of citizen security also takes account of the relationships between rights and responsibilities, freedoms and necessary limitations, which highlights the potential tension between individual human rights and freedoms, and the need to maintain security and protect the integrity of the state. For example, there has been public concern in many countries about the monitoring of private communications by police and security forces. Few people disagree with the need to monitor the communications of known criminals and terrorists, but the problem is that police and security forces do not always know who the criminals are, and so argue that they need to monitor many innocent communications in order to find patterns of suspicious connections, suspect financial transfers or other indicators of criminal activity. This can then conflict with the common desire for a reasonable level of personal privacy, so societies have to develop protocols for the permitted surveillance of private communications, with appropriate oversight.

Citizen security is also determined by the stability of essential supplies, such as food, water, energy and medical services, and vulnerability to natural hazards (Tulchin and Espach 2000). These are particularly important concerns for many Caribbean nations: in particular, those that depend largely on imports of energy, food and manufactured goods, and are consequently exposed to economic shocks, and those that are potentially vulnerable to seismic events, extreme weather events and climate change. These can all be considered to be aspects of societal resilience: an important concept with a wide array of implications (Clayton et al. 2012).

In the context of ecological systems, resilience refers to the capacity of the system to resist damage and recover quickly. With regard to socio-economic systems, however, resilience refers to the ability of an economy to continue to generate wealth and employment throughout technological discontinuities, economic restructuring, the loss of uncompetitive businesses and shocks such as a spike in energy prices. As this suggests, resilience does not mean resisting change; it means maintaining system integrity and output while continuously adjusting to changing circumstances. With regard to citizen security, resilience would usually entail protecting livelihoods and access to resources, ensuring better protection against economic and environmental shocks, building the capacity for rapid recovery from shocks, and strengthening the ability to prepare for and deal with the consequences of natural hazards, particularly those related to climate change. The *Commonwealth Secretariat Strategic Plan 2013/14–2016/17* identifies building resilience as a key priority (Commonwealth Secretariat 2013).

8.2 State of citizen security in the Caribbean

There are currently a number of threats to citizen security in the Caribbean. Crime is the most urgent crisis in the region. High levels of violence, in particular, impose a wide range of social and economic costs: they erode faith in the institutions of government, undermine democracy, destroy the quality of life, deter investment, and encourage the migration of skills and capital. Some of the countries are contending with high rates of homicide and violent crime; trafficking in guns, ammunition and illegal narcotics; the rise in cyber crime; the compromising of government

programmes by organised crime; and the threat of the importation of violent fundamentalist ideologies. The growth in the wealth, power and reach of the Mexican drug cartels also now threatens much of the Caribbean region.

However, crime is just one of a number of profound challenges facing Caribbean nations. These countries also have to adjust to a world that is being rapidly reshaped by the accelerating pace of scientific and technological advance; changes in the nature of employment; demographic trends; the rise of new centres of global manufacturing; surging demand for resources and equally rapid shifts in the pattern of environmental impacts; fundamental changes in the nature of risk, political and economic influence, competition and conflict, and the geopolitical balance of power; and possible global threats such as climate change. Many of these changes represent important new opportunities, but some also represent existential challenges for the nations of the Caribbean.

Both the extent of the changes and the pace of events present serious challenges to the small, relatively vulnerable nations of the Caribbean, which must rapidly strengthen their capacity to manage a number of simultaneous changes and absorb a range of potential impacts. Failure to do so is likely to have serious consequences.

8.2.1 Violent crime

The Caribbean nations lie at the epicentre of world violence; the United Nations Office on Drugs and Crime (UNODC) *Global Study on Homicide* (2013) notes that eight of the ten most violent nations in the world are in Central America and the Caribbean, with three from the Caribbean. In 2014, the countries with the highest homicide rates were as follows (see Table 8.1).

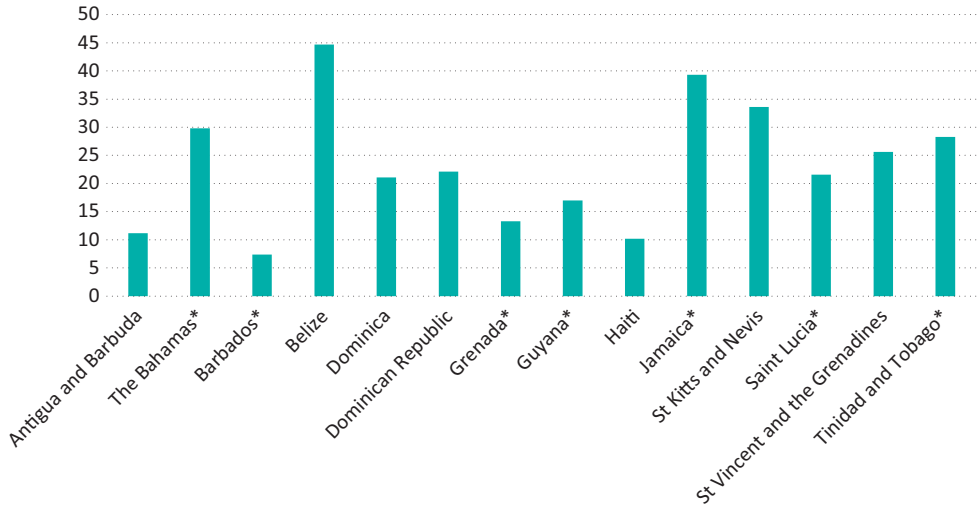
A number of the other Caribbean island nations are not in the top ten, but still have some of the highest per capita rates of homicide in the world (see Figure 8.1, in which the countries in the selected sample are marked with *).

For comparison, the homicide rate for the UK is 1 per 100,000 people per annum. So the rate in Jamaica, for example, is about 40 times higher than in the UK, while the rate in Barbados – a relatively low-crime society by Caribbean standards – is still more than

Table 8.1 Countries with highest homicide rates

Rankings	Countries
1	Honduras
2	Venezuela
3	Belize
4	El Salvador
5	Guatemala
6	Jamaica
7	Swaziland
8	St Kitts and Nevis
9	South Africa
10	Colombia

Figure 8.1 Rate of homicide per 100,000 people per annum



Sources: Compiled from UNODC 2013; World Bank data on intentional homicides (per 100,000 people) up to 2014; and national sources, taking the most recent year available

seven times higher than in the UK. The impact is compounded by the much smaller populations of the Caribbean nations, as there is a far higher probability that citizens will know someone who has been murdered and will therefore be affected by the crime.

The situation varies greatly both between and within countries. There are high- and low-crime countries in the region, and high- and low-crime areas within each country. However, perceived insecurity is not solely determined by proximate risk; a country with a high homicide rate tends to be perceived as dangerous, even though there are many relatively safe areas within that country. Similarly, even those citizens who live and work in relatively safe areas still report a high level of perceived insecurity (UNDP 2012b).

While there are areas within all Caribbean countries that are relatively safe, and some nations that still have relatively low rates of violence, perceived insecurity affects decisions of investors to invest in a given country. Perceptions can be as powerful as reality as a deterrent to investment that dampens growth prospects. The threat environment is evolving rapidly and no Caribbean nation can remain immune. Transnational threats are emerging:

- Mexican drug cartels are diversifying across Central America and the Caribbean; Central America *maras* (gangs) are now active in a small number of Caribbean nations; and Chinese Triads are now active in Latin America and the Caribbean, largely following the pattern of legitimate Chinese investment, but also forming connections with the Mexican drug cartels to supply the precursor chemicals for synthetic narcotics.
- US Southern Command has linked about 100 Caribbean nationals to the Islamic State (IS), and has stated that there is an increased threat risk from fundamentalist terrorism in a number of Caribbean nations.

- In addition, patterns of crime change in response to effective interventions. In the 1980s, for example, a large part of the narcotics from Colombia was routed through the Caribbean. Vigorous policing increased the risk of shipping through the Caribbean, but the trade rerouted through Mexico. Now, partly as a result of greater vigilance at the US–Mexican border, there is a renewed surge of activity on the Caribbean route: 16 per cent of US cocaine imports were routed via Caribbean islands in 2013, up from 4 per cent in 2011. As this suggests, the measures taken by any one Caribbean nation to improve its security are likely to displace the impacts to another country, which is why a co-ordinated regional approach is essential.

The high levels of violence in several Caribbean countries result from a number of factors, but the most significant include the trans-shipment of narcotics through the region into the North American and European markets, and the ready availability of illegal weapons. In Jamaica, for example, about 80 per cent of murders are committed with imported firearms (mostly illegal).[1] The main sources of illegal weapons in Caribbean nations are the USA, Venezuela, Colombia and Haiti.

The profits from trafficking and associated corruption have resulted in the growth of increasingly sophisticated criminal organisations, some of which are now involved in narcotics and weapons trafficking, human trafficking, extortion, cybercrime and frauds such as the lottery scam, the misappropriation of public funds and other forms of crime.

Caribbean police forces currently do not have the capacity to eradicate these threats. Most of them lack the necessary technical and forensic capabilities. In some cases, they are also handicapped by outdated legislation (especially in areas such as proceeds of crime, the use of DNA, electronic control of the chain of evidence, and video-conferencing for witnesses) and dysfunctional justice systems. In some cases, these problems are compounded by a low level of trust in police forces and governments, which is largely due to the perception of corruption.

8.2.2 Narcotrafficking

The Caribbean nations lie on one of the world's busiest trade routes. This represents an economic opportunity, and a number of Caribbean nations are now expanding their trans-shipment operations. However, most of the world's illegal narcotics and weapons are also now transported in shipping containers, so the illegal traffic flows through the same hubs as the legitimate traffic. Illegal narcotics and weapons are also transported through the Caribbean by narco-submarines and small boats. Figure 8.2 (published in *The Economist* in May 2014) shows the main routes.

This is, in turn, part of a larger global pattern of criminal enterprise, shown in Figure 8.3 (published in Stratfor 2011).

These criminal flows are connected. Everywhere there is a trade in illegal narcotics, there is a parallel trade in illegal firearms. Patents and contracts cannot protect investments in an illegal trade, so transactions depend on violence or the credible threat of violence in order to ensure control over territory and payment for supplies. Then, once criminal organisations are established, they diversify into other areas of

Figure 8.2 Map of narcotrafficking routes

Source: The Economist 2014

Figure 8.3 Flow of transnational organised crime

Source: Stratfor 2011

both criminal and 'legitimate' business activity in order to increase their profits and reduce their risks. A common pattern of criminal diversification is into extortion, human trafficking and fraud, while diversification into 'legitimate' business activity may include construction, leisure and entertainment, shipping, vehicle sales and so on.

8.2.3 Deportees

Caribbean nationals that have committed crimes in other jurisdictions are now likely to be deported back to the Caribbean on completion of their sentence, and some of those deported to the Caribbean are dangerous criminals. This can add significantly to existing problems in the region. It is therefore important to build stronger co-operation between governments and law enforcement agencies to ensure that the recipient countries are adequately prepared, and options here include support for rehabilitation programmes, electronic monitoring bracelets, halfway houses and the rehabilitation and expansion of penitentiaries in the Caribbean.

It is also important to note, however, that most deportees are returned to the Caribbean for infractions of the US Illegal Immigration Reform and Immigrant Responsibility Act of 1996, usually for overstaying their visa limit (Headley 2006). The deportees also include those convicted of minor crimes, most commonly possession of drugs, but also including shoplifting, petty theft, drunk driving, obstruction of justice and unpaid traffic fines. The majority of these cases are deported after their first offence. So the majority of deportees are not serious criminals. However, many of them have difficulty in finding legitimate employment after it becomes known that they are deportees, which means that some of them do subsequently become involved in criminal activity. It is therefore important to ensure that there are mechanisms in place for controlling the high-risk deportees and re-assimilating the low-risk deportees.

8.2.4 Narcoterrorism

The Mexican drug cartels are currently the dominant criminal networks in the Americas. They supplanted the Colombian cartels in the 1990s, and now control about 90 per cent of all the illegal narcotics exported to the USA. They are full-spectrum criminal organisations, involved in drug and weapons trafficking, extortion, kidnapping, contract killing, human trafficking, money laundering, corrupting public officials and theft, among other forms of crime. Estimates of their combined income from narcotics trafficking alone range from US$13.6 billion to US$49.4 billion annually (Cook 2007). If these estimates are accurate, their annual income is substantially larger than the GDP of most Caribbean states. They have an estimated 100,000 'soldiers', and subcontract some tasks to the *maras* (gangs) in Guatemala, Honduras and El Salvador, such as Mara Salvatrucha (MS-13) and Calle 18 (18th Street Gang or M18), which also have an extensive presence in the USA. MS-13 is estimated to have some 30,000–50,000 members, while M18 is estimated to have some 65,000 members. The Mexican and Central American cartels and *maras* have a combined strength of at least 250,000 'soldiers', and have a presence throughout the Americas.

The cartels are currently expanding aggressively, acquiring production facilities and money-laundering opportunities in Central America, undermining and hollowing out government structures in order to be able to operate with impunity, taking over downstream distribution in the US and Canadian markets, and forming connections with other organised crime cartels, such as the N'drangheta, in Italy, for narcotics distribution in Europe. They also have contacts and business dealings with criminal organisations in Spain, Albania, Serbia and Eastern Europe, the coastal states in West Africa, Japan and many other regions.

Threat

The issue is whether the Mexican cartels might seek to expand their interests across the Caribbean. Their sophistication, contacts, capabilities, wealth, numbers and ready access to military-grade weapons and explosives would make them a formidable opponent. The Caribbean nations offer an attractive combination of hotels and casinos, which can be used for money laundering, and marinas and trans-shipment operations, which can be used for the distribution of narcotics and weapons. The cartels are known to be interested in these kinds of assets.

Early signs of Mexican drug cartel interest may take the form of foreign investment in trans-shipment facilities, hotels and casinos, entertainment complexes, shipping and fisheries, which would allow them to establish a presence and acquire the strategic assets needed to support their core business activities. Without prior warning as to the true identity of the investors, these investments would be welcomed as a sign of confidence in the economy. The more sophisticated cartels use a *plata o plom*[2] strategy, so the first approach might be to corrupt officials to facilitate their transactions and establish front companies.

8.2.5 Violent fundamentalism

One of the most significant recent developments in the pattern of terrorism is the emergence of IS, a fundamentalist Sunni group (Byman and Williams 2015). At the time of this report, IS had captured about one-third of Iraq and about half of Syria. It is estimated to have an army of about 30,000, although some have suggested that it may now be as large as 200,000, largely because they have been able to mobilise young men in the territories they have captured. Its wealth, which comes from bank robberies, looting, extortion and sales of oil from captured Iraqi fields, has been estimated at more than US$2 billion. IS's success has attracted disaffected youth from more than 90 countries. Some estimates suggest that as many as 20,000 have gone to fight for IS, of whom some 3,000 have come from the West. About 1,200 have gone to Syria from France, 600 from the UK, 600 from Germany and smaller numbers from Belgium, Australia, the Netherlands, Canada, the USA and Spain.

With regard to the Caribbean, US Southern Command General John F Kelly said in March 2105 that a total of perhaps 100 recruits have gone from the region to fight for IS (Baron 2015). The reliability of this figure is uncertain, but it is clear that the problem in the Caribbean could rapidly become more serious.

8.2.6 The link between disaffected youth, violent gangs and terrorism

A country that has many disaffected young people and existing gangs, with the potential to be radicalised, may be particularly vulnerable. Disaffected young people are the primary recruits to both local criminal gangs and international terrorist networks. There are common factors in many of these cases. Most of them feel alienated and rootless, or have failed to achieve legitimate recognition and success. Many of them are young men who are already involved in gangs and narcotics; they come from dysfunctional families and give their loyalty to the gang that adopts them. From there, they can be readily attracted by a violent ideology that appears to welcome them as brothers and gives their life purpose and meaning – especially when that message comes from a group such as IS, which encourages enslaving, raping and torturing captives. Their initial link is often made through other gang members, through contact with a charismatic fundamentalist preacher and, increasingly, via internet sites.

Transnational organised crime now forms another link between local gangs and terrorist networks. As the US National Security Council (2010) *Strategy to Combat Transnational Organized Crime* (TOC) notes:

> *In the past, TOC was largely regional in scope, hierarchically structured, and had only occasional links to terrorism. Today's criminal networks are fluid, striking new alliances with other networks around the world and engaging in a wide range of illicit activities, including cybercrime and providing support for terrorism*.

As this suggests, gangs can serve as a 'force multiplier' for terrorism. Terrorist organisations look for weak and/or corrupt states that they can exploit for territory, supplies, trafficking, money laundering and other essential functions.

Threat

Countries such as Jamaica,[3] Trinidad and Tobago[4] and Guyana,[5] with significant numbers of economically and socially disadvantaged young men, a number of violent gangs and high rates of homicide, represent good potential recruiting grounds for fundamentalists.

Warning signs for the police and security forces would therefore include the return to the Caribbean of someone who has recently visited Syria, Somalia, Libya or another current conflict zone, the arrival of a charismatic, fundamentalist preacher with a message of violence, or the dissemination of contacts via dangerous internet sites. This highlights the importance of border control and screening, intelligence sharing and co-operation, and the monitoring of internet traffic on particular websites.

8.2.7 The tourism industry: a potential target

Random terrorism may be specifically targeted at the innocent and vulnerable for two reasons. The first is that killing the innocent graphically demonstrates the state's failure to protect its citizens. Second, it helps to create revulsion, fear and panic.

Media management has always been important to terrorist organisations, who try to demoralise their numerically or militarily superior opponents and convince them

that they cannot win. However, it is even more important to practitioners of random terrorism, who need 'spectaculars' (highly visible mass killings) in order to achieve the desired impact against the state and to ensure the continuing flow of funds and recruits.

Tourists are usually both innocent and vulnerable. In some countries, they also represent mobility, secularity, affluence and consumption, which may be perceived as corrupt and immoral. Vulnerability and a lack of familiarity make tourists easy prey for crime and terrorist attacks, and tourism-dependent economies rely heavily on their image as destinations, and so are more vulnerable to the repercussions of attacks (Korstanje and Clayton 2012). The tourism industry is economically vital to a number of countries, but it is also a very soft target – so it offers the opportunity to cause mass casualties and inflict extensive economic damage to countries that may be seen as sympathetic to the West.

It is important to note that the intended targets in such cases may be foreign nationals, not locals. Terrorism need not be targeted at the Caribbean for the region to be affected. Terrorism elsewhere can and has been shown to affect the region.

After the 9/11 events, global tourism volumes fell by 10 per cent, and visitor arrivals to some countries fell by 30 per cent. Caribbean arrivals fell by nearly 15 per cent (which led to the temporary loss of an estimated 365,000 jobs in the region) and in some cases more.

The tourism industry is now the largest source of employment and foreign revenue for a number of Caribbean countries. This means that anything that makes people more or less likely to travel, or to choose one destination over another, or affects the rate of growth in the industry, tends to have immediate and relatively widespread consequences in these countries. This dependency has been highlighted by a number of recent disasters, which have indicated the extent to which tourism can be affected by external risks (Lepp and Gibson 2008; Peattie et al. 2005; Tsai and Chen 2010; Park and Reisinger 2010; Korstanje and Clayton 2012).

Any terrorist incident that damages confidence in the tourism industry would therefore have immediate and widespread consequences for the Caribbean nations, even if they were affected only as third parties, but even more so if any of them were the chosen location for the attack.

8.2.8 Seismic events

The islands of the Caribbean sit on top of a highly complex set of geological faults. The Caribbean plate sits at the junction of four larger plates (the North American, South American, Nazca and Cocos). In addition, the area between the Caribbean and North American plates is broken up into a patchwork of small platelets, such as the Gonave platelet. The fault lines between all these plates and platelets are seismically active, resulting in earthquakes, tsunamis and volcanic eruptions.

For example, Haiti sits on top of the Enriquillo–Plantain Garden fault (EPGF), which is the boundary between the Caribbean plate to the south and the Gonave platelet

to the north. The Caribbean plate is sliding east, while the Govave platelet is sliding west, so the EPGF is a lateral (or 'strike-slip') fault. It accumulates strain, which is periodically released when sections of rock rupture. The 7.0 magnitude earthquake that killed more than 200,000 people in Haiti on 12 January 2010 happened because the underlying section of the EPGF had been locked since the last major slip in 1770, so it had built up about two lateral metres of unrelieved pressure. However, the section of the EPGF that ruptured was only 50km long, which is just 10 per cent of the length of the fault, so it is likely that the sections of the fault line to the east and to the west are now carrying even more load.

8.2.9 Climate change

The World Bank *Turn Down the Heat* report (2012b) noted that the average surface temperature has now risen by nearly 1°C, and that a rise of 3.0–3.5°C by 2100 is now considered probable. It also notes that this could lead to a rise of one metre in the average sea level, with extreme heat waves up to 9°C hotter than today. This could eventually force large-scale migration out of low-income countries in tropical and subtropical latitudes, as these will be among the first to be seriously affected, and they also have relatively little capacity to mitigate the impacts (Mora et al. 2013).

As the oceans gradually warm as a result of climate change, hurricanes may get stronger, as wind speeds increase by about 5 per cent for every 1°C rise in tropical ocean temperatures (Emanuel 1987). However, it is difficult to predict whether global warming will lead to more hurricanes in the Caribbean, as warmer seas would tend to encourage the early stages of development, but there may also be stronger winds that would disrupt systems before they could gather strength. It is likely that several such factors will change at the same time, so one possible scenario is that there will be fewer but more powerful storms in the Caribbean.

Climate change presents a particular threat to the Caribbean nations. However, as the UN Office for Disaster Risk Reduction (UNISDR) *Global Assessment Report on Disaster Risk Reduction* for 2013 points out, because the SIDS nations are mostly small islands, much of the housing stock, economic operations and transport infrastructure is on coastal plains that are vulnerable to sea-level rise, increased incidence of severe weather, flooding and storm surge, so SIDS have the largest percentage of total capital stock exposed to hazard. The issue, therefore, is the extent to which SIDS nations can survive impacts that are far more extensive in terms of the percentage of the population or the economy affected than is the case for large mainland states.

The Caribbean is also the most tourism-dependent region in the world, as the travel and tourism industry is the largest source of both foreign exchange and employment. Tourism earnings now account for approximately 25 per cent of the Caribbean's GDP, and significantly more in some Caribbean islands. Five Caribbean nations are now in the global top 20 in terms of the percentage of total employment that is related directly or indirectly to the industry. Unfortunately, the travel and tourism industry is also a significant contributor to the carbon loading of the atmosphere and the associated climate change.

The nations of the Caribbean are therefore facing a serious dilemma. For many of them, their hopes for development rest largely on tourism, especially as other sectors, such as traditional agriculture, continue to decline, and most of them are currently committed to expanding tourist volumes or margins or both. However, the increase in demand for travel and tourism is contributing directly to climate change, which will have serious consequences for the islands. Moreover, this sector is also most likely to be affected by increased hazards arising from climate change, as the industry is heavily concentrated on coastal areas.

8.3 Current efforts to improve citizen security in the Caribbean

The UNDP *Caribbean Human Development Report* (2012a) notes that the Caribbean countries still operate with fundamentally unreformed police structures, and that, despite progress in some nations, the predominant policing model is still focused on state security, not citizen security. According to this report, the three main challenges facing the police services of the Caribbean region are:

- **Performance legitimacy:** The need to improve effectiveness and responsiveness to the security demands of citizens.
- **Integrity:** The need to eradicate corruption. Corruption among police officers invariably undermines performance; it also has a corrosive effect on public confidence, because it conflicts with stated police values and thereby weakens the authority and legitimacy of the police.[6]
- **Human rights:** Police officers are entrusted with significant power over other citizens, so it is important to ensure that there are mechanisms to control abuses of power and to ensure that policing is done on a basis of respect for human rights.

However, the UNDP Citizen Security Survey 2010 (reported in the UNDP *Caribbean Human Development Report* 2012) offers some grounds for optimism. It found that many citizens across the Caribbean region perceived their police to be 'moderately' legitimate and competent, were willing to become the co-producers of their own security, and supported government investment in more resources for the police to transform police services and enhance their effectiveness (UNDP 2012a, 114).

The UNDP *Caribbean Human Development Report* (2012a) therefore concludes that a transition to citizen security in the Caribbean region will require institutional reforms within police forces and significant changes in police work patterns, behaviour and attitudes. This would include a transition to community-based policing, i.e. a redeployment of officers into geographical divisions; longer periods of deployment to allow the development of a 'same cop, same neighbourhood' model; slow patrolling; frequent meetings with the citizens; mutual problem-solving; and a greater emphasis on accountability, with regular reporting of police performance indicators. The purpose of all these measures is to enhance citizen security, and help to change attitudes, so that people become more willing to co-operate with the police to prevent crime and control criminality.

Deosaran (2002) found that there are two main reasons for the introduction of community policing in the Caribbean: first, traditional law enforcement approaches are not working well; and, second, community-based approaches have popular and political appeal. Popularity does not, of course, guarantee success; much depends on the extent to which policy commitments are actually translated into operations and the deployment of assets, and the integrity and competence of both the police service and the political directorate.

In the last five years, most of the police services in the Caribbean region have developed new strategic plans, and have gone through some level of reform and modernisation, often with the assistance of external advisers (mainly from the UK, the USA and Canada, as well as other police forces in the region). They have undertaken these initiatives separately, rather than as part of a co-ordinated regional programme, so there are still significant differences between the Caribbean police services in terms of their priorities, capabilities, commitments and culture. This can be seen in the summary of the current position in the countries in the sample. However, it is also important to note that some of these differences probably result from the diversity of definitions of 'community policing'; most police forces are now committed to community policing in principle, but practices vary widely between jurisdictions. As a general rule, the main difference between traditional and community policing is that traditional policing is typically more reactive, while community policing focuses more on working with the community to identify and solve problems and thereby prevent crimes. Yet in practice every police force uses a mixture of both approaches. This makes it more difficult to assess the impact of community policing, partly because it is never applied in isolation, and partly because it can only be measured over an extended period. This is for two reasons: one is that it takes time to build the trust and sense of co-responsibility needed to support a preventative approach; the other is that, it is harder to measure crimes that, as a result of the new approach, did not happen. Hence it is necessary to undertake both longitudinal and comparative assessments in order to determine whether the new approach has been more or less successful than the traditional model.

- **The Bahamas:** The Royal Bahamas Police Force has to police an extended archipelago of islands with exceptionally porous borders and a population of some 350,000 people with some 3,000 officers. In 2002, the force started to implement a policing strategy based on both community and intelligence-led policing, and crime rates fell over the subsequent three years (de Guzman et al. 2014). The Commissioner's Policing Plan 2012 placed strong emphasis on improving community safety, one of six priority areas, with the goal of bringing the police and citizens together to prevent crime and solve neighbourhood problems, thereby giving citizens more control over the quality of life in their community and promoting urban renewal. Its model of community safety includes a 'citizen-focused' approach; community-based policing programmes in all policing divisions; increasing police visibility; civilianising many posts in the police force to release trained police officers to return to operational police duties; focusing on crime prevention; the formation of neighbourhood crime watch groups and involving them in keeping their communities safe; using environmental design as a means of crime prevention and encouraging community clean-up campaigns to

remove derelict vehicles, demolish abandoned buildings and clear away debris and overgrown shrubs in neighbourhoods; establishing a victim support unit at each divisional police station; informing potential offenders about the consequences of a life of crime and sensitising them to the harm that crime causes to communities; regular updates and information about potentially dangerous wanted persons; deployment of CCTV in public spaces; enforcing laws governing loud music and the sale of alcohol to minors; and refusing permits to event promoters who create distress to communities and cause social conflict.

- **Barbados:** The Royal Barbados Police Force polices one island with a total population of 287,000 with some 1,400 officers, mostly unarmed. The RBPF has had a commitment to community policing since the 1970s, and has placed particular emphasis on community relations since the 1980s, when the Office of Public Relations was established. The Community Policing Unit has been relatively effective in taking educational and other crime prevention programmes to the communities. Largely as a result, public support for the police in Barbados is higher than in most other Caribbean nations (UNDP 2012a). However, this progress has been partially overshadowed by recent controversies, including the resignation in 2013 of the Commissioner as a result of allegations of illegal wiretapping, and disagreements over the role of the police in helping to negotiate a truce between two rival gangs in 2015. In 2013, the Attorney-General and Minister of Home Affairs said in the House of Assembly that there had been 'some damage done' to the relationship between the police and the community over the years, and called on the police to work with communities, rather than just sending officers into communities when there was an upsurge in violence (*Barbados Advocate* 2013).

- **Grenada:** The Royal Grenada Police Force polices one main island and six surrounding smaller islands with a total population of 106,000 people with a force of 830 officers and 200 rural constables. It developed a model of community policing, using patrol cars to serve as substations in some neighbourhoods, which allowed residents to file complaints, report crimes and obtain information without having to travel to the main police station. The force also conducted a competition among divisions to develop and carry out projects involving neighbourhoods; these included a health fair and cultural display.[7] Gomes (2007) noted, however, that the force had no internal police investigative division, no ombudsman and no civilian oversight body, and that there had been occasional allegations that police beat detainees (although there were no allegations of extra judicial executions or major corruption in the force).

- **Guyana:** The Guyana Police Force polices a relatively large country (by Caribbean standards) of 215,000km^2 with a total population of some 800,000. The aims listed in its Strategic Plan 2011–2015 (Guyana Police Force 2011–15) include respecting and recognising human rights; working with all communities to develop policing services necessary and appropriate to those communities; and building partnerships with all sectors of Guyana society, indicating a significant change in approach in the intervening years. A potentially more problematic aim was to work to develop community policing programmes in conjunction with

community policing groups, indicating that the potential for vigilante violence and other abuses of the system (a serious problem in the past) is still there. However, the Strategic Plan also indicates the need to strengthen neighbourhood policing, which could help to prevent the re-emergence of vigilante activity. Gomes (2007) notes that the effectiveness of the force is severely limited by poor training, poor equipment and acute budgetary constraints, and that public confidence in and co-operation with the police has been low for years.

- **Jamaica:** The Jamaica Constabulary Force (JCF) polices the island of Jamaica with a population of 2.7 million with some 14,000 officers organised into 19 geographic (and a number of non-geographic) divisions. Some of the geographic divisions – notably West Kingston – now have a strong commitment to community policing, and a number of officers have become highly skilled in proximity policing tactics.[8] The West Kingston Division has operated entertainment events and, a health fair for adults and has supplied, treats for children and essential goods to elderly and infirm residents, which has done much to improve the relationship between the police and the community, leading to improved community relations, a significantly better flow of intelligence, and the resolution of gang conflicts. Fear of crime has also fallen; more people are now willing to come forward, provide witness statements and appear in court to give evidence, which indicates that they are no longer so afraid of criminals, and now feel that they can rely on the JCF to protect them. In addition, the number of locally organised weekend entertainment events has tripled, which suggests that people are no longer afraid to go out in the evening. The absence of competent, effective government in the troubled communities has left a vacuum that has been filled in the past by area dons, so removing the dominant criminal structure can leave these communities without a functioning social hierarchy. In divisions such as West Kingston, these problems are well understood, and some JCF officers have taken on the additional roles of community leaders and arbitrators, so that members of the community will now approach them to help solve a wide range of social, domestic, personal and employment problems, which suggests that they have transferred their loyalties.[9] Since the beginning of 2015, however, the homicide rate has increased significantly, which suggests that the gains made by community policing were less durable than appeared at first.
- **Saint Lucia:** The Royal Saint Lucia Police Force polices a small island nation with a total population of some 183,000 with about 900 officers, including two paramilitary units (the Special Service Unit and the Coast Guard). Community policing in Saint Lucia started in the late 1990s with the initiation of the Police Reform Implementation Team, which clarified the vision, mission and strategic objectives for the police force. The community policing component of the new mission was then operationalised with the construction of a new police station (Marchand Police Station) in an at-risk community as the prototype for the implementation for community policing in Saint Lucia. Its Strategic Plan 2008–2011 notes that 'community policing is at the centre of its thrust to obtain respect, trust, confidence, and provide an accountable, effective and efficient service to citizens and other persons within the country' (Royal Saint Lucia Police Force (2008–2011). This commitment was central to six of the seven strategic objectives

for the force: reducing crime, disorder and the fear of crime; enhancing police presence in the communities; strengthening relations with local communities; improving public satisfaction in policing; increasing effectiveness in crime investigation; and ensuring that policing is delivered professionally, with integrity and accountability. It continued to operate other modes of policing, but the commitment to community policing did result in the development of strong partnerships (partnership policing) with groups in the community. This in turn resulted in initiatives such as talk shows, police participation in sporting events, town hall meetings and the appointment of community liaison officers at all police stations, all of which served to strengthen police–public relations and helped to make the public more aware of the role of the police, as well as their own role in assisting in crime prevention/reduction and solving crime. In August 2011, the US government provided support to the Royal Saint Lucia Police Force for additional training in community policing.

- **Trinidad and Tobago:** The Trinidad and Tobago Police Service polices the two-island nation with a population of 1.3 million with some 7,000 officers. It made a particularly strong commitment to community policing in 1996, with an extensive restructuring and associated redeployment of resources specifically to support a transition to community policing. Then in 2001 the force began an 'immersion programme' of community policing sensitisation seminars for police officers of all ranks (Deosaran 2002). However, Wallace (2011) reviewed the impact of the 2007–2010 developmental plan for Trinidad and Tobago (a component of the 2020 National Strategic Plan), and critiqued community involvement for lack of consistency and continuity. There was also a failure to link the community policing strategy to systems of education or employment: the majority of cases in court today involve young people from troubled communities, who have dropped out of school and could not then get a place in vocational training facilities. This problem may have been inadvertently compounded by short-term unemployment relief programmes, some of which appear to have been politically directed into particular constituencies, which are widely abused by gang members and disaffected young people who take the offered pay but do little or no work. This is consistent with the assessment by Deosaran (2002), who found a large gap between favourable police impressions held by the public in Trinidad and Tobago their actual willingness to co-operate in community policing activities, and their knowledge of or involvement in any community policing activity, indicating that community policing had failed to engage the public. This finding was also supported by Wallace (2014), who looked at the impact of 'hot-spot' policing, with the deployment of additional patrols in the troubled Laventille community, and found that those who knew about the programme had a higher level of trust in the police, but that most of the residents were unaware of the programme.

8.4 Possible future scenarios

The Caribbean nations face a number of challenges, but they have the resources and the capacity needed to solve all of the problems listed in this chapter. With good leadership and the right policies, the police and justice systems of the islands can be reorganised

to deliver far better results. A new emphasis on citizen security would enable the police and security forces to address the social problems at source, secure the support of the citizens, isolate the hard-core criminals, degrade and dismantle the networks of organised crime, break the power of those who facilitate organised crime and money laundering, and sever the links between politics and criminality. This would probably do more than any other measure to help the Caribbean nations to attract and retain human and financial capital. The decisions made today will therefore determine the future of the Caribbean, illustrated in the scenarios below.

8.4.1 Business-as-usual scenario

In the 'business-as-usual' scenario, the Caribbean nations continue to suffer some of the highest rates of homicide in the world. Attempts to implement a citizen security strategy are largely confined to particular areas, and lack the commitment needed to make them work. There is little effective preparation or planning to mitigate the threat of natural hazards or climate change, or to ensure food, water and energy security. As a result, most attempts to build a sustained process of economic development and growth are constantly undermined. Human capital continues to emigrate, and investment capital becomes harder to attract as emerging economies around the world become increasingly competitive and overtake the Caribbean, which becomes an economic backwater.

8.4.2 Worst-case scenario

In the worst-case scenario, the Caribbean nations fail to address their problems, and their weaknesses are then exploited by narcoterrorists who want to utilise the hotels, casinos and entertainment facilities for money laundering, and the marinas and trans-shipment operations for the distribution of narcotics and weapons. Caribbean governments are increasingly intimidated and dominated by powerful criminal organisations, who murder politicians, police officers and citizens who speak out against the developments. There is a wave of migration and capital flight, and a number of countries issue advisories against visiting the worst-affected Caribbean nations, leaving Caribbean governments increasingly desperate and dependent on the favour of the criminals.

8.4.3 Best-case scenario

In the best-case scenario, the Caribbean nations deal resolutely with their problems. They build competent, effective and trusted police forces, efficient and unbiased justice systems and regional intelligence-sharing networks, and proceed to dismantle domestic and transnational criminal organisations. Young people at risk are identified early, with prompt intervention to ensure that they do not become criminals, and humane and effective penitentiaries ensure a low rate of recidivism. Strong national planning systems ensure that major settlements and infrastructure are not built in areas that are vulnerable to natural hazards. The Caribbean nations become peaceful, prosperous, resilient and stable, with low levels of crime and high standards of integrity in public life. This scenario is built on a vision for citizen security in the Caribbean by 2050, whereby:

- The Caribbean nations are peaceful, prosperous, resilient and stable, with robust democratic systems, high levels of public participation, broad media diversity, and an electorate that demands high standards of performance from political representatives.
- There are low levels of violent crime, including homicide, robbery with violence, wounding, rape and other forms of physical and sexual abuse; there are high standards of integrity in public life, with zero tolerance for corruption, tax evasion and money laundering.
- Domestic and transnational criminal organisations have been dismantled, and young people at risk are identified early, with prompt intervention to ensure that they do not become criminals.
- Educational systems produce a workforce with the advanced skill sets needed in a fast-moving, dynamic world economy; shrewd public investment in key infrastructure helps to 'crowd in' private investment; the combination of strong, unbiased institutions, a skilled workforce and robust economic growth helps to retain and attract human and financial capital to the region.
- The police and security forces are competent, well equipped, effective and trusted by citizens; the justice systems are efficient and unbiased, and deliver swift and impartial justice; and the penitentiaries provide decent and humane conditions, and emphasise rehabilitation. The Caribbean nations have good intelligence systems, with rapid sharing of intelligence across the region and with external allies, allowing a rapid response to emerging threats.
- National planning systems ensure that major settlements and infrastructure are not built in areas that are vulnerable to earthquakes, landslides, coastal or alluvial flooding; that cities are organised to enable efficient transport, communications, energy, water and sanitation systems and are designed to reduce levels of incivility and crime, by ensuring that public spaces and transport systems are accessible, safe and clean, preventing the formation of political or criminal garrisons, and normalising informal settlements. Regulatory systems and building control codes ensure that buildings operate to net zero energy standards, with rainwater harvesting and grey water systems, thereby increasing national energy and water security; the modernisation and intensification of agriculture has increased food security, and strong environmental protection ensures that critical environmental support services remain fully intact and viable.

The key is the action plan for achieving this best-case scenario.

8.5 The action plan

8.5.1 Strategic framework for resolving regional citizen security issues

The nations of the Caribbean need to have flexible but robust plans for dealing with the profound challenge of living in a world of rapidly evolving threats and shifting opportunities. In an age of uncertainty, it is vital to act quickly and effectively to deal with new and evolving threats to national and citizen security.

8.5.2 Assessing probabilities and impacts

The Caribbean nations are all relatively small countries, but have a remarkable concentration of social, economic and environmental threats to the security of their citizens. However, it is not necessary to accord every possible threat the same level of priority. Some threats are much more likely to happen, or have the potential to cause far more harm, and it is therefore sensible to give them higher priority. It is therefore important to have a clear and logical process for assigning an appropriate priority to each potential threat, as this will in turn determine the necessary allocation of time and attention, people, equipment, money and other resources. This is especially important given the resource-constrained nature of these countries. Every allocation of scarce resources means that those resources have to be taken away from somewhere else. If every threat were given the same priority, this would mean that resources would be stretched too thinly to be effective anywhere.

It is therefore necessary to identify the main threats to each nation. This will include threats that constitute a clear and present danger (such as a high rate of crime), and major risks within a given time horizon (such as a storm surge that could flood heavily populated areas), although the strategies for dealing with these are markedly different. These diverse threats and risks can be weighted and ranked in a probability–impact assessment matrix to determine the priority that should be attached to each threat. This involves estimating the probability that an event will occur within a given time horizon, and estimating the potential impact of each event in terms of fatalities and casualties, damage to infrastructure and economic losses. Each category in the probability–impact matrix corresponds to a 'threat tier', and each tier can then be assigned an appropriate response.

Tier 1 threats are clear and present dangers, and are therefore the top priority. Tier 1 threats, such as violent crime, require an active response. Tier 2 threats are major potential or imminent threats, rather than present threats, but it is important to note two important caveats. First, some of them have the potential to cause catastrophic harm. It is therefore very important to actively monitor all Tier 2 items, and to be prepared to rapidly upgrade them to Tier 1 if necessary. Second, the concept of 'low probability' always refers to a particular period of time. For example, it is inevitable that a country that sits above several active faults will experience a major earthquake one day. If the geological data suggests that will probably happen within the next 100 years, and if this risk is evenly distributed over the period, there is a 1 per cent chance of a major earthquake in any one year over the next century, with a 10 per cent chance of it occurring within the next decade.

Table 8.2 Social, economic and environmental probability-impact matrix

	High impact	Low impact
High probability	Tier 1	Tier 3
Low probability	Tier 2	Tier 4

This raises an important issue as to how to deal with high-impact, low-probability events. How much time, effort and money should be assigned to preparing for something that is not currently happening? When resources are highly constrained, this is a highly pertinent question. The answer is that countries cannot afford to neglect high-impact, low-probability events, but they require a different kind of response. They usually require monitoring, building early-warning systems and taking steps to increase resilience in the most affordable way possible. For example, if the sea level is expected to be higher in future, then the first step is to stop any new permanent construction from being built too close to the shore. That way, by the time the sea level has risen, there are fewer people in harm's way than would otherwise have been the case.

8.5.3 Addressing the problem of violence in the Caribbean

There is a small group of factors that appear to account for most of the difference between violent and peaceful countries. The violent countries tend to have similar weaknesses, and the ones that are becoming more peaceful have similar strengths (or have made similar reforms).

Many of the violent countries have weak or corrupt governance, poorly performing economies, and incompetent or compromised institutions (especially with regard to policing and justice) that are not trusted by the people. There are opportunities to make significant profits from crimes such as extortion, fraud or trafficking narcotics and weapons, and the risk that criminals will be arrested and prosecuted is low. Many politicians and other leading members of society are unprincipled and self-serving. In these circumstances, many people have recourse to violence to settle their disputes, rather than the law.

The countries with falling levels of violence are those that have made progress with regard to social control (including better urban planning with regard to public spaces and transport, improved street lighting, stronger security systems for buildings and vehicles, more CCTV cameras, and the replacement of cash by electronic transactions); social leadership, where influential members of society emphasise honesty, self-control, civility and respect; effective rule of law, with transparent and accountable public institutions that can be trusted by the public, and the will and the capacity to eliminate corruption, especially among public officials; and evidence-based policing, where systematic reviews of police strategy, tactics and organisation are used to ensure that resources remain focused on reducing the most damaging forms of crime, often with an emphasis on preventative policing and early intervention.

A strategy to transform a violent society therefore has to simultaneously resolve the weaknesses associated with violence and poverty, and develop the strengths associated with peace and prosperity.

The majority of the serious crimes in the Caribbean fall roughly into two groups:

1. **Corruption and organised economic crimes**: motivated primarily by profit, with the associated use of violence in some cases to further criminal goals and protect criminal enterprises. These are more typically associated with powerful

and well-connected criminals involved in activities such as corruption and misappropriation of funds, construction and contracting, large-scale trafficking, organised robbery, the import of counterfeit goods, cyber crime, fraud, money laundering and tax evasion.

2. **Violent crime rooted in social tensions and problems**: motivated by a range of factors, including profit, status, power and reprisal, and including domestic violence and abuse, gang feuds and turf wars, fights to control particular areas or activities (such as the proceeds from scamming), theft, extortion, local trafficking in weapons and narcotics, and contract killing. These problems are largely concentrated in low-income, troubled and unstructured communities. In some cases, the development and growth of these communities was the result of political patronage. Many of these communities suffer from multiple disadvantages, including bad housing, limited access to amenities, no proper waste disposal services, with the associated hazards to health and safety, poorly performing schools, low levels of educational achievement and few legitimate employment opportunities. This combination often results in fatalism and low self-esteem, which can result in high levels of aggression and physical and sexual abuse, thereby perpetuating the cycle of violence.

Two different approaches are required.

1. The serious economic crimes typically require detailed intelligence assessments (and often international co-operation) in order to identify both the criminals and their facilitators; the latter include corrupt public officials, businessmen, lawyers and so on, who channel funds to criminals, launder cash for them or help them to conceal the source of their funds and cycle them back into the formal economy.

2. The problems in the low-income, troubled and unstructured communities are complex, with social, economic, political and cultural dimensions, and require a multiagency approach. The police have to take the lead (as little can succeed in the absence of security), but they also have to recruit the support of other government agencies, the private sector, churches and voluntary organisations in normalising and reintegrating these communities.

8.5.4 Responding to the threat of terrorism and narcoterrorism

The response to the threat of both terrorism and narcoterrorism is the same: to improve intelligence sharing (with appropriate protocols), co-operation with regard to monitoring individuals with known links to terrorist or organised crime networks, joint operations, mutual extradition accords, and co-operation on tracing terrorist finance and the proceeds of organised crime.

8.5.5 Responding to the threat of natural hazards and climate change

The level of a country's economic development and the structure of its economy are important components of its general ability to adapt to climate change and natural hazards (Clayton 2013; Clayton 2009). The domestic distribution of impacts partly

depends on the distribution of wealth and poverty in society, on levels of education, on the availability of good public health services, and on the quality of the housing stock, water, and transport and communication infrastructure. These variables overlap, which makes it possible to make generic predictions about the communities that are likely to be most severely affected. For example, young children in poor fishing communities with limited resources, bad schools, basic housing, poor drainage, problems with water contamination, bad roads and limited access to health services are likely to be among the most vulnerable members of that society. As this suggests, many of the measures needed to protect the most vulnerable people will overlap with well-managed, focused poverty reduction programmes. Better schools, health services and infrastructure will increase the resilience of these communities. However, it is also very important to establish clear planning guidelines and 'no-build' zones in order to direct people and infrastructure out of areas that are likely to be subject to increasing risk of coastal and alluvial flooding in future. In this way, appropriate government action can reduce the exposure to risk, build resilience and thereby increase the security of citizens.

Some approaches include:

- Reviewing national planning guidelines and building codes, identifying the most vulnerable areas, and upgrading emergency planning and disaster management.
- Ensuring that all permanent new buildings are built to the requisite standards, especially public buildings such as schools, and encouraging all citizens to strengthen their own homes.
- Ensuring that the core functions of government can continue to operate at all times, including in a post-disaster situation, by reinforcing critical government offices, army barracks, police headquarters, hospitals and communications centres, or relocating them into buildings that can withstand severe shocks.
- Ensuring that all government departments are aware of the need for disaster preparedness and emergency management, and that essential records are regularly backed up to secure sites.
- Establishing basic earthquake education in schools.
- Ensuring that there are essential supplies in secure depots, including shovels, tents, plastic sheeting and shelter material, mosquito nets, kitchen sets, portable toilets, hygiene and sanitation equipment, stores of food and water, and medical supplies for dealing with crush and other trauma injuries, respiratory disease, obstetrics and vaccinations against infectious disease.
- Making an inventory of essential equipment and locations in advance. This will include firms that own earth-moving equipment, so that these can be used after an earthquake to clear major roads, and large areas of clear ground, such as sports fields, as these may be needed for emergency evacuation centres, temporary hospitals and heliports.

8.5.6 Summary of the most urgent regional measures

The most urgent measures required are as follows:

1. With regard to the threats from crime, corruption, violence and the possible incursion of fundamentalist ideologies:
    - Countries must strengthen their security capabilities, streamline their justice systems, and increase intelligence sharing within the Caribbean and with key partners.
    - Countries must change the emphasis from protection of the state to citizen security, to build trust in the government and the police, and ensure that the people are protected.
2. With regard to the risks from natural hazards and climate changes:
    - Countries must build their social and economic resilience by moving core government functions, communications and healthcare systems into secure locations, using planning and zoning to gradually move centres of population and key infrastructure out of most vulnerable areas, and developing and enforcing stronger building codes.

8.5.7 Budgetary constraints

The average public sector debt in the Caribbean is about 70 per cent of GDP. In 3 of the 15 English-speaking Caribbean nations it is more than 100 per cent of GDP. In Jamaica, one of the most indebted nations, public debt peaked in 2013 at 147 per cent of GDP. As a result, debt servicing now takes more than 50 per cent of all public expenditure in Jamaica; education and health combined represent just 20 per cent. These financial problems make it harder to make the case for significant investment in measures to improve citizen security, as constrained budgets usually lead to the lowest-cost choices. However, there are several possible solutions. First, even modest incremental advances in key areas can be highly effective over time, provided that the programme is coherent, integrated and underpinned by a clear strategy. Second, the integration of policies for planning, housing, economic development, health, education and citizen security can be used to achieve multiple outcomes as efficiently and economically as possible. The *favela* normalisation model used in Rio de Janeiro (see below) is a good example of how both of these goals can be achieved.

8.5.8 Normalising the *favelas*

The state of Rio de Janeiro in Brazil has a long-term goal of normalising all of the *favela* (informal) communities in the state, but is doing so one at a time. Each *favela* is pacified and normalised by the 'Pacifying Police' (Unidade de Polícia Pacificadora, or UPP) before the focus moves to the next troubled community. In this way, more than 1,000 informal communities will eventually be reintegrated.

The first priority of the UPP programme is to ensure security, as little else can happen in the absence of effective security; however, the emphasis then moves to social

regeneration, economic investment and improvements to the infrastructure. As part of the process of normalising the *favelas*, the city runs public transport services into the area, city maintenance crews start to upgrade the infrastructure (alleyways are concreted, drains installed), the alleys are given names and the houses are given numbers (so that every resident gets an address). The private sector is encouraged to set up businesses in the UPP *favelas*, and allowed to offset investments in *favelas* against tax. This has generated a substantial flow of investment capital and donations into these communities.

As a direct result of the UPP programme, the homicide rate in the City of Rio de Janeiro almost halved in just seven years – falling from 42 per 100,000 in 2005 to 24 per 100,000 in 2012. Crimes that previously went unreported in the *favelas* (mainly theft, domestic violence and rape) are now being reported to the UPP, and perpetrators are being arrested. Unemployment has fallen, and average incomes are rising. Before normalisation, there were very few legitimate businesses inside the *favelas*. People would travel to work (mostly at low-end jobs) in other parts of the city. Now there are thriving businesses inside these communities. Some former *favelas* are seeing rapid rises in property values, as relatively affluent citizens are migrating into the now-safe areas. Before the UPP programme, few people paid for their electricity and water; they paid the local gang instead, which would prevent the utility companies from disconnecting supplies. The UPP programme has normalised the situation; people now pay the utilities for properly metered, legal supplies.

The cities of Medellín and Bogotá in Colombia have taken a similar approach. They have linked their *favelas* into the city with new public transport routes, and located major new public buildings in some of the poorest areas. This has greatly improved the quality of life and the self-esteem of the residents, and rates of crime have fallen dramatically.

These approaches demonstrate that a long-term commitment to reduce crime and improve living conditions in the most troubled areas can generate a wide range of social and economic gains, which ensures that residents then resist any attempt by criminals to regain control. This provides a durable basis for a permanent improvement in citizen security.

Notes

1 No firearms are manufactured in the Caribbean nations, so both legal and illegal weapons are imported.
2 *Plata o plomo* means 'silver or lead' (take a bribe or a bullet).
3 The 2012 homicide rate for Jamaica was 39.3 per 100,000 people, the sixth highest in the world. However, this was down from the peak years of 2005 and 2009.
4 The 2012 homicide rate for Trinidad and Tobago was 28.3 per 100,000 people. Much of this violence is gang-related; there are more than 100 criminal gangs in Trinidad and Tobago, linked to weapons and narcotrafficking, fraud and corruption (RISC 2014).
5 Guyana's 2012 homicide rate was 17.0 per 100,000 people, the fourth highest murder rate in South America, behind Venezuela, Colombia and Brazil, not including Central America (US Department of State, 2014).

6 It should be noted that corruption among police officers in the Caribbean has ranged from soliciting bribes to overlook traffic offences, to actual involvement in kidnappings or narcotics or weapons trafficking, and has also included willingness to tamper with evidence and compromise cases in court. It is also important to note, however, that corruption is not confined to the police, and that corruption in the judiciary and/or in the political directorate can be at least equally damaging.
7 Reported in 'The Police: Transitioning to Citizen Security', chapter 4 in UNDP 2012a, 95.
8 This includes cultivating relationships with intelligence sources in the community while protecting their identity.
9 If true, this development is particularly significant, as it suggests that the police are winning the hearts and minds of the people. This is the key to effecting a permanent and substantial reduction in levels of crime and violence.

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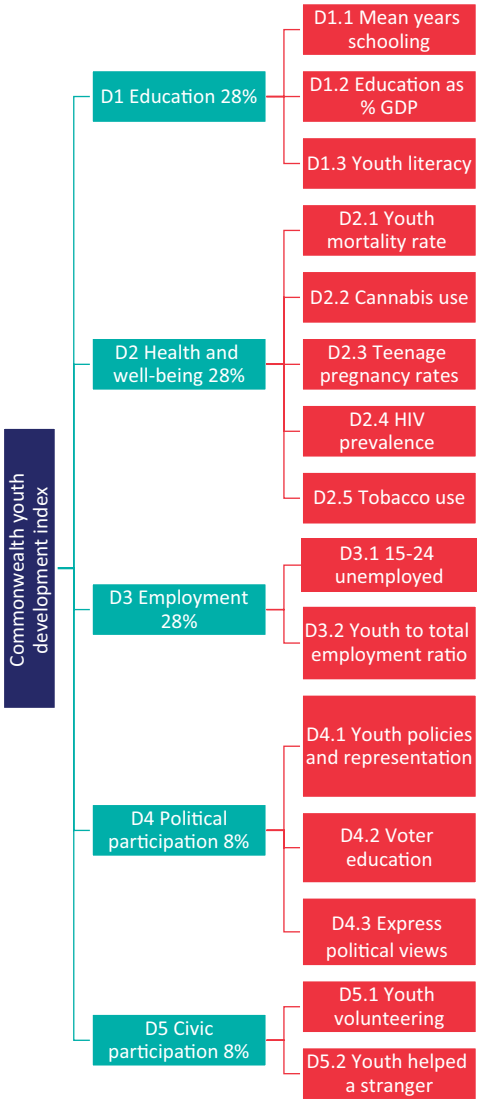
Appendix 1

Youth development index composition



Appendix 2

Project approach

To gain insight into potential areas of focus within the remit of the project, an Advisory Group – comprising regional 'thought leaders', including senior policy-makers within the Caribbean, and chaired by the Commonwealth Secretariat Deputy Secretary-General – was convened. Given the multifaceted nature of development, the Commonwealth adopted a multidisciplinary approach in the selection of experts for the group, covering economic, social and environmental disciplines. The members of the group were the Hon. Winston Dookeran (Minister of Foreign Affairs in Trinidad and Tobago); Rod Pennycook (Chair of the Board of the Royal Bank of Canada); Dr David Smith (Coordinator of the University Consortium of Small Island States); Dr Wendy Grenade (lecturer at the UWI); Farmala Jacobs (Caribbean Youth Network representative); the Deputy Secretary-General of Economic and Social Development, Deodat Maharaj; and Dr Denny Lewis-Bynoe, Acting Head of Climate Finance and Small States in the Economic Policy Division of the Commonwealth. They met in Trinidad and Tobago and deliberated on the concept and approach for building the resilience of Caribbean economies and developing a vision for the Caribbean that embodies the aspirations of its people. In their choice of topics for consideration, the Advisory Group drew on their considerable knowledge of the region, identified those issues that are likely to be most transformative for the development of the region, and decided those that were to be the project's areas of focus.

The study commissioned by the Commonwealth includes research by a team of consultants, who contributed their expertise in the areas of economic modelling, the private sector and innovation, citizen security, development strategies and visioning to the report. In addition, the Commonwealth drew on internal expertise for the sections on youth and financing for development.

The project also involved broad stakeholder consultation, including with Caribbean youth networks, and social media interventions. In addition, initial findings were presented and shared at two high-level fora in the region: the Commonwealth Youth Ministers Meeting and the UN Development Programme (UNDP), UWI and Government of Trinidad-sponsored Caribbean Future Forum.

This vision was developed from a wide range of sources, including through a range of consultations from across the Caribbean region (outlined in Box A2.1). The process is illustrated in Figure A2.1.

Box A2.1 Development of the Caribbean Vision 2050

The vision for the Caribbean was developed using a widely consultative process, which included reviews of national strategic and development plans, in order to identify the elements that were common to all countries in the region and the CARICOM Strategic Plan for 2015–2019. The plans vary from short to long term, and they all present a situational assessment for each country that is then addressed through a strategic framework with a vision, goals, objectives and strategies. The commonalities that were identified were then interpreted as the key areas of focus – in terms of both assessment and strategies – across the region. Together with those from the CARICOM Strategy, the common themes emerging from the country plans were synthesised in order to develop the elements of Vision 2050 (see Appendix 2 for a synthesis of the review of national strategic and development plans).

The second element in the process of developing Vision 2050 involved eliciting the perspectives of a cross-section of Caribbean stakeholders on his/her vision for the Caribbean to 2050; the greatest challenges/threats to achieving this vision in his/her sector during the timeframe and how these can be surmounted; the extent to which any of the strategies for surmounting the identified challenges are already being implemented; and his/her views as to the potential benefits to regional co-operation in relation to addressing the challenges previously identified. Consultations were undertaken through various means:

1. A survey of the public and private sectors, as well as civil society and youth representatives in four Caribbean countries, in order to determine their views on some of the critical issues facing the region.
2. A meeting of Caribbean 'thought leaders': the Commonwealth selected a Caribbean Advisory Group to guide the development of the analytical and strategic work. The group, which covered economic, social and environmental disciplines, deliberated for a full day on the concept of and approach to building the resilience of Caribbean economies, offered its vision for the Caribbean
3. A Facebook page to solicit contributions to the strategies and vision.
4. A presentation of the initial findings of the study at the Caribbean Region Commonwealth Youth Ministers Meeting in Antigua on 29 April 2015.
5. Finally, the vision – as well as key elements of the strategic framework stemming from the imperative for change – was presented at a three-day future forum of approximately 300 regional and international stakeholders in Trinidad and Tobago in early May 2015. The session was highly interactive and provided substantive interactions and feedback, which enabled the further refinement of the framework.

Figure A2.1 Methodology used to develop Vision 2050

Appendix 3

Matrix of National Development Plan strategic elements for selected Caribbean countries

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Antigua and Barbuda	Working Draft 2008	Government of Antigua and Barbuda National Strategic Development Plan (NSDP) Framework 2008	The sustainable development of Antigua and Barbuda to create a sustainable economy through balanced, integrated development strategies	Improved standard in the quality of life, while ensuring social stability and integrity of the environment	Not stated	Not stated (document is a framework only)
The Bahamas		Not available				
Barbados	2005–2025	National Strategic Plan	A fully developed society that is prosperous, socially just and globally competitive	1. 'Inspired, exulting, free': Unleashing the Spirit of the Nation 2. 'Firm craftsmen of our fate': New Governance for New Times 3. 'Strength and unity': Building Social Capital 'These fields and hills': Strengthening the Physical Infrastructure and Preserving the Environment 4. 'Upward and onward': Enhancing Barbados' Prosperity and Competitiveness. 5. 'Strict guardians of our heritage': Branding Barbados Globally	Friendliness Confidence Steadfastness Pride of nationhood Industry Loyalty Faith in God Strength and unity Excellence Family values Independence Discipline	• Strengthening national identity • Reaffirming self-reliance, pride and adaptability • Building social cohesion • Ensuring social justice • Facilitating self-expression, creativity, personal development and self-actualisation (sample of objectives related to Goal 1)

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Dominica	Medium term	Growth and Social Protection Strategy (GSPS) 2008	Leveraging all human, natural and financial resources available to the country, in order to realise the vision of Dominica as a place characterised by economic success, and through policies of government geared to facilitating an environment within which private enterprise can flourish	Promoting sustained growth through: 1. Human resource development 2. Social sector development 3. Youth empowerment 4. Energy security 5. Environment and vulnerability management 6. Crime, national security and immigration	Not stated	1. Macro-economic targets 2. Public sector reform, including enabling environment for private enterprise and investment attraction 3. Sectoral strategies in agriculture, fisheries, tourism, industry/agro-industry/ business development, ICTs 4. Social: housing, cultural industries, the gender dimension 5. Implement the Commonwealth Plan of Action for youth 6. Develop alternative energy sources 7. Mainstreaming the green economy concept into planning and realising the organic island concept 8. Enhancing the justice system approach to crime and multisectoral approach to crime

(*continued*)

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Grenada	2007–2017	National Strategic Development Plan Grenada	The Spice Isle of the Caribbean, embracing a rich heritage that nurtures community and family values, with a united, educated, spiritual and hospitable people, thriving in a peaceful, democratic environment, transformed by innovation, creativity, enterprise and equal opportunity for a better quality of life	• An economically transformed country and people-centred development • A socially strengthened and cohesive society, supported by an educated, trained and creative human resource and centred on ethics and integrity • A culturally aware society with synergies between culture and economy • Improved governance and democracy that is conducive to a peaceful, safe and secure environment, with justice for all • A developed youth sector, capable of participating in and benefiting from national development • Gender equity is ensured in promoting human rights and inclusiveness • Environmental and physical development considerations integrally linked to national development • An enhanced tourism sector, optimising its contribution to the country's socio-economic development and benchmarked against the best international standards • An enhanced contribution of the agricultural sector to the national economy and to livelihoods • An improved contribution of agro-industries to national development • A more efficient construction sector, capable of responding to the requirements of reconstruction and national development • An enhanced economic infrastructure sector, supporting the country's development	1. Democracy 2. Spirituality 3. Ethics 4. Diversity, unity, inclusiveness 5. Good governance at the national, community and family levels 6. Stewardship of natural, human and physical resources 7. Sustainable environment 8. Productivity, competitiveness, work ethic 9. Innovation, creativity, enterprise, transformative development 10. Hospitality 11. Peace and security 12. Resilience 13. Respect for, promoting and recognising, talent, skills and achievements 14. Equal opportunity 15. Justice	1. Productivity and competitiveness through a knowledge-based economy, public sector reform and productivity improvements, development and upgrade of quality of products and services 2. Innovation, creativity and enterprise through training and curriculum upgrade to emphasise creativity 3. Strategic initiatives, e.g. expansion of tourism, development of higher education sector to generate foreign exchange, in addition to serving national needs; a viable sports industry, offshore health sector and implementation of National Export Strategy (sample of strategies for Goal 1)

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Guyana	2001–2010	National Development Strategy		• To attain the highest rates of economic growth that are possible • To eliminate poverty in Guyana • To achieve geographical unity • To attain an equitable geographical distribution of economic activity • To diversify the economy		
Jamaica	2009–2030	Vision 2030, Jamaica National Development Plan	Jamaica, the place of choice to live, raise families and do business	• Jamaica's economy is prosperous • Jamaicans are empowered to achieve their fullest potential • Jamaica's society is secure, cohesive and just • Jamaica has a healthy natural environment	**People centred:** 1. Transformational leadership 2. Partnership 3. Transparency and accountability 4. Social cohesion 5. Equity 6. Sustainability 7. Sustainable rural and urban development	1. A healthy and stable population 2. World-class education and training 3. Effective social protection 4. Authentic and transformational culture 5. Security and safety 6. Effective governance 7. A stable macroeconomy 8. An enabling business environment 9. Strong economic infrastructure 10. Energy security and efficiency 11. A technology-enabled society 12. Internationally competitive industry structures 13. Sustainable management and use of environmental and natural resources 14. Hazard risk reduction and adaptation to climate change 15. Sustainable urban and rural development

(*continued*)

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Montserrat	2008–2020	Sustainable Development Plan	A healthy and wholesome Montserrat, founded upon a thriving modern economy with a friendly, vibrant community, in which all our people, through enterprise and initiative, can fulfil their hopes in a truly democratic and God-fearing society	• An environment that fosters prudent economic management, sustainable growth, a diversified economy and the generation of employment opportunities • Enhanced human development and improved quality of life of all people • Montserrat's natural resources conserved within a system of environmentally sustainable development • An efficient, responsive and accountable system of governance and public service	• Respect for God, self and others • Resourcefulness and resilience • Commitment to excellence • Transparency • Accountability • Integrity • Justice and peace • Partnership and participation • Tolerance and diversity • Respect for the environment	• Development of appropriate economic infrastructure ... • Identification and facilitation of four sectors, namely agriculture, tourism, renewable energy, mining/ manufacturing (utilising materials from the volcano) • Implementation of initiatives to support the strengthening and development of the private sector • Installation of required ICT • Completion of development of a modern town centre at Little Bay (sample of strategies related to Goal 1)
St Kitts and Nevis	2003–05	Medium-Term Strategy 2003–05	Government of St Kitts and Nevis's vision for socio-economic development is to improve the quality of life for the people of the Federation by promoting sustainable growth and development within the context of economic diversification, human resource development, sound environmental management, a stable macro-economic and political environment and with equity and social justice	1. Sustainable fiscal position, improved efficiency and effectiveness in the delivery of public services 2. Integration into world trade 3. Maximisation of tourism contribution to GDP, foreign exchange and employment creation 4. Sustained economic growth and employment generation 5. Diversification of the economy 6. Sustainable development of water resources and reliable supply of electricity 7. Environmental management 8. Curriculum reform, promotion of ICT in schools and improved quality, access, management and governance in schools 9. Upgraded health infrastructure and disease surveillance and mechanisms to finance health 10. Poverty reduction	Not stated	Through: 1. Deficit and debt reduction 2. Improvement in trade and investment climate and private sector and non-governmental organisation participation 3. Improved competitiveness of tourism destination to facilitate the sector's expansion 4. ICT sector development 5. Increased production of the non-sugar agriculture sector and the role of the manufacturing sector in the economy 6. Reduction in land and coastal degradation, protection of watershed areas and use of alternative energy sources

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Saint Lucia	2007	National Vision Plan for all Quadrants (Physical Development)	To address the overall development of the island, and in particular the rural areas; opportunities need to be created on an island-wide basis and, particularly targeted to rural areas that have lagged in the development of the island	1. Increased sustainable tourism development growth 2. Incentives for Saint Lucia-wide economic development 3. Unique natural environment protected and enhanced 4. Viability and sustainability of human settlements guaranteed	Not stated	1. Improve airlift and market outreach 2. Capacity building to support tourism and technological development 3. Promote cruise-based tourism 4. Improved transportation linkages to major settlements and rural areas 5. Develop the database, local expertise and international co-operation to support sustainable environmentally sensitive development 6. Expand reliable and sustainable potable water supply system for the totality of the country
St Vincent and the Grenadines	2013–2025	National Economic and Social Development Plan	• High and sustained levels of economic growth • Reduced unemployment and poverty levels • Improved physical infrastructure and environmental sustainability • High levels of human and social development • A peaceful, safe and secure nation • A technologically advanced workforce • A deep sense of national pride and cultural renaissance • Regional integration • Enhanced global solidarity	• Re-engineering economic growth • Enabling increased human and social development • Promoting good governance and increasing the effectiveness of public administration • Improving physical Infrastructure, • Preserving the environment and building resilience to climate change • Building national pride, identity and culture		

(*continued*)

Country/ entity	Period	Document	Vision/general objective	Goals	Core values/guiding principles	Strategies
Trinidad and Tobago	2005–2020	Draft National Strategic Plan	We are a united, resilient, productive, innovative and prosperous nation with a disciplined, caring, fun-loving society comprising healthy, happy and well-educated people and built on the enduring attributes of self-reliance, respect, tolerance, equity and integrity	• Developing innovative people • Nurturing a caring society • Governing effectively • Enabling competitive businesses • Investing in sound infrastructure and environment		

Sources: Authors' analysis of the policy documents