MAKING REFORMS WORK IN THE CARIBBEAN:
A collective action approach to growth
Edited by Andrea Gallina and Sara Giannozzi

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PREFACE
Following years of low growth, high unemployment, high debt ratios, growing vulnerability to external shocks and poverty and increasing inequalities, many countries in the Caribbean region and its development partners have embarked on a critical effort to rethink their approach to growth. In my conversations with people from all walks of life, both inside and outside the Caribbean, from government officials to thought leaders and shopkeepers, I have been impressed by the clarity of vision regarding the need to take a pragmatic and inclusive stance towards reforming Caribbean economies, at a time when many islands are still struggling with the aftermath of the global financial crisis.

Since its launch in June 2012, the Caribbean Growth Forum (CGF) has provided a unique platform for hundreds of participants from the public and private sector, the civil society and the media, to join in an effort to better understand the challenges at hand, to define a new way forward and take action together to shape the future of the region. This powerful collective effort around economic reform and growth focused, during its first phase, on short- and medium-term catalytic actions in three core areas: Logistics and Connectivity, Investment Climate, and Skills and Productivity.

In addition, the CGF was meant to be a practical public-private platform for dialogue, to enable knowledge sharing, exchange of experiences and lessons among peers from the region with international institutions supporting the process. This cross-fertilization allowed for a large number of practical and actionable solutions to emerge; but also for the dissemination of critical technical knowledge to inform policymaking. "Making Reform Work in the Caribbean: a Collective Action Approach to Growth" builds on these conversations and the technical inputs developed since the launch of the Forum, to propose a roadmap for change in the Caribbean region.

The knowledge and analysis gathered in this volume, focused on locally identified challenges and solutions, will be used in support of the second phase of the Caribbean Growth Forum, which will focus on the roll-out of the reforms identified so far. While it is now critical for each country participating in the initiative to move towards implementation as agreed, what will also be critical for the success of this effort is to maintain vibrant public-private dialogues at the national and regional levels, while continuing to foster learning within each country and regionally. A lot more can be learned by working together to support the implementation of these development solutions and to foster a virtuous cycle of economic growth and shared prosperity in the Caribbean.

Only a genuine dialogue across all layers of the society will allow locally identified solutions to incorporate lessons learned in different contexts and bring the change necessary for growth and prosperity. Our hope is that this collection can be a testimony of these efforts, and a reminder for us all of the importance of collective actions in promoting this large regional reform agenda.

Sophie Sirtaine,
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The World Bank
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INTRODUCTION

ANDREA GALLINA¹, SARA GIANNOTTI²
THE CARIBBEAN GROWTH FORUM PROCESS AND ITS OBJECTIVES

After good growth performance and improvements in human development indicators from around 1950 through the 1980s, the erosion of trade preferences since the 1980s has contributed to a shift in production patterns, leaving most Caribbean countries without sufficient new activities to absorb the workforce and provide a higher standard of living. Many Caribbean economies have been virtually stagnant for the past thirty years, while other small island states have experienced rapid growth. The region is now resting on a tipping point and faces low growth; high unemployment, especially for youth and women; high debt ratios; high incidence of crime; and growing vulnerability to external shocks and climate change. In the aftermath of the global financial crisis, the challenges posed by high debt and low growth have become more acute, creating a renewed sense of urgency concerning the need to address the structural and policy obstacles to development and growth.

To concretely address the current challenges, a platform for multi-stakeholder dialogue on growth in the Caribbean was launched in June 2012 by policy makers, private sector, and civil society organizations of all Caribbean countries. Caribbean leaders wanted assurance that this platform would not be another series of “talk shops” on growth, and that it would instead be used to help quickly prioritize and implement shared solutions.

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2 Social Protection Specialist, Latin America and the Caribbean Region, The World Bank.
4 For the purpose of this volume the Caribbean region includes: Antigua and Barbuda, The Bahamas, Barbados, Dominica, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St Lucia, St. Vincent and Grenadines, Trinidad and Tobago, Belize, Guyana, Suriname, Haiti.
5 See Note by Monica Parra in this book.
6 According to the Caribbean Development Bank eleven Caribbean countries are among the top fifteen most indebted middle income countries, Caribbean Development Bank, 2013, p. 27.
7 UNDP (2012).
8 According to the World Bank (2014) “Since 1980, nine countries in the Caribbean and Central America have experienced a disaster event with an economic impact greater than 50 percent of their annual gross domestic product (GDP)”, p.8.
The Caribbean Growth Forum (CGF) was thus designed to respond to these concerns: to be both a forum of dialogue to identify needed reforms, and a catalyst for the implementation of agreed reform priorities, creating the needed accelerators to make reforms happen, while keeping in mind the political economy factors that have impeded reforms in the past.

Since inception, the CGF process has been solidly grounded on few core principles: (i) tailoring: the approach is based on locally defined problems and solutions (home grown); (ii) action-orientation: prioritization and sequencing of reforms (e.g., combining gradual reforms with longer term structural changes) and their translation into clear, achievable and measurable targets, dashboards and roadmaps for implementation; (iii) transparency: making both targets and the process public to increase participation and shared commitments, thus creating a routine culture of public reporting to track progress openly; (iv) flexibility: to ensure that the process allows for adjustments if targets are not reached and to create space for innovation; and (v) accountability: infusing a sense of shared responsibility across the coalition that is supporting change, thus moving from a blaming culture to a culture of finding solutions by doing; and, eventually, anchoring the process around a small group of responsible government officials and support them in delivering policies.

MANY COUNTRIES WITH SIMILAR CHALLENGES, BUT ALSO SOLUTIONS

The first Phase of the CGF (from its official launch in June 2012 to the regional event in The Bahamas in June 2013) saw strong traction and momentum, built in record time, with the roll-out of CGF National Chapters in 12 countries, and broad-based and consistent stakeholder participation throughout the process that lasted several months. This has led to the formulation of 12 Action Plans which contain 385 agreed national and regional priorities divided in the three pillars of the CGF: Logistics and Connectivity; Investment Climate and Skills and Productivity.

Not surprisingly many of the challenges to growth that have emerged by these dialogues taking place almost in parallel in 12 countries are similar in many of them, and so are their proposed solutions.

In the area of Logistics and Connectivity, the main challenges stakeholders identified included the bureaucratic obstacles to the movement of people and goods within the region, and the absence of reliable and cost effective ferry services. In the Eastern Caribbean countries the need to address monopolies in the maritime transports was also tackled by proposing the establishment of a Maritime Transport Regulatory Agency that would monitor rates and charges by shipping lines.

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9 The CGF was also conceived keeping in mind that the shift in Caribbean economies performance is not only due to structural factors but also to policy failures and resistance to change. There is evidence in the Caribbean academic literature showing that implementation of key reforms to improve macroeconomic sustainability, competitiveness and growth have been lagging behind, partly because of political economy issues (Persaud, 2011). The literature also suggests that the main challenges to the implementation of pro-growth reforms in the region can be linked to a few stylized facts: small, highly-personalized societies in which political sympathies and loyalties of individuals tend to be widely known, with career public servants traditionally blocking reforms led by politicians of the opposite political spectrum (Stewart, 2007); strong vested interests in the private sector, with the presence of a domestic and foreign private sector that has developed competitive advantages based on concessions and exemptions (Kidu, n.d.); small size, which, among other things, has provided room for corruption through nepotism and patronage (Sutton, 2008); a weak civil society and media sector, lacking the necessary autonomy for advocacy (Payne & Sutton, 2007); a public service culture that mirrors the class, racial, and ethnic divides in some of the countries (Bissessar 2001); an attitude toward work centered on both a reluctance to delegate by senior officials, and for those lower down to take responsibility (Sutton, 2008); public sector job promotions based on seniority rather than merit (Bissessar, 2002); and, finally, the presence of a widespread mistrust between public and private sector, which contributes to lower mutual expectations and scope for engagement. In his book "Power Politics and Performance" Winston Dookeran (2012) has elaborated on the term 'anti-growth coalitions' to emphasize the adverse impact of these Caribbean 'distortions' on growth and on improvements in living conditions for the Caribbean people as a whole.

10 By focusing on prioritizing and sequencing the Action Plans resulting from the CGF are aligned with the National Development Strategies, Growth and Poverty Reduction Strategies and other Programmatic Documents in each country.

11 Participation to the national dialogues involved more than 2,500 people and included a wide range of stakeholders, from small and micro enterprises, to large hotel chains, to indigenous people, community based organizations and policy makers and civil servants at all levels.
Interestingly, proposals for solving these issues came from small exporters, which are likely to suffer more the lack of competition among the international shipping lines that operate in the region. Trade facilities and customs have also emerged across the region as key areas in need of reforms. In particular, customs inefficiency was highlighted in most countries as an important bottleneck to trade and competitiveness, not only in terms of quality management system for customs but also in terms of transparency and simplification of procedures and tariffs. While ports infrastructures are not considered a problem, their functioning is considered a major impediment and therefore the need to improve operational efficiency, introduce standards for logistics services, and Electronic Single Windows to lodge standardized information on trade and transport was raised in several countries. In the deliberations on logistics and connectivity the need to develop a modern legal framework for concessions were also highlighted in several countries.

Country specific challenges in this pillar were also identified: for example in the Dominican Republic a pressing issue is to improve trade facilities with Haiti, both in terms of infrastructure but also in terms of security and phytosanitary program to facilitate exports and imports with Haiti. Similarly in Belize, the main logistics problems are linked to the lack of rural infrastructures and lack of connectivity between the capital city and the rest of the country. In Jamaica the main concern was the need to transform the existing port infrastructure into a logistic hub that could serve as a trans-shipment hub for the Caribbean. Also in Jamaica, increasing the capacity of customs officers and brokers, or establishing weighing stations, were some of the proposals agreed upon in the dialogues.

The logistics and connectivity pillar working groups also addressed challenges related to ICT, in terms of connectivity, regulation, affordability, and also skills and capacity. The need to devise modern ICT legal frameworks emerged in almost all countries as a key priority. Another key area that was prioritized in this pillar is energy: solutions proposed ranged from i) the creation of economic and fiscal incentives for the use and development of renewable energy, ii) the development of energy efficient standards for all buildings, and iii) the need to promote and build capacity to undertake energy audits. In the case of the Dominican Republic, it was also proposed to launch a nation-wide electricity forum that would lead to the signature among all social parties of an Electricity Pact, as part of the three pacts of the National Development Strategy.

Regarding the Investment Climate pillar, the discussion focused mainly on the regulatory frameworks and the need to improve Doing Business indicators. The need to create national investment strategy and promotion agencies was also highlighted in many countries, including the creation of single stop shops and the streamlining of key legislations for investors. The need to increase access to finance for small businesses, to promote better access to SMEs in state procurement and to enact Small business Development Acts is another common topic. In terms of access to finance, the consensus lies in several countries on the need to establish secure transactions and collateral registry, or establishing credit bureau.

Country-specific issues in the Investment Climate pillar included in Belize, Suriname and the Dominican Republic the need to improve transparency, public procurement, competition policies and more accountability in designing concessions frameworks. In the Dominican Republic the debate around taxes was seen as a small step towards launching a National Fiscal Pact; in the OECS countries it was more an issue of streamlining incentives and eliminate old incentives to make room for new ones more attuned to the need to develop new industries or use renewable energies for example, while in Jamaica the discussion focused a lot on tax simplification.

Probably the Skills and Productivity pillar is where most commonality exists in the region in terms of challenges and solutions to address the "great mismatch" between skills available and the demand of the market. In particular the lack of soft skills dominated the discussion everywhere, but also the need to strengthen the tripartite frameworks and national productivity councils with
the aim to have national platforms for discussing and implementing programs for soft skills and vocational training. The main concern is how to quickly create the conditions, especially for the youth, to enter and remain into the labor market. The promotion of education program for entrepreneurial skills, especially for small enterprises, and continuous education programs attuned to evolving business needs has been identified as well as critical areas of intervention for both education and active labor market policies. It is also important to note that one of the main issues raised by the working groups in this pillar is the absence of solid data upon which to build effective and strategic planning. While true across the region, this is especially evident in the areas of labor market (e.g., enterprise surveys, skills profiling) and poverty. As recognized in several countries, policy development in the areas of labor market, skill development, and institutional training would benefit from a more solid evidence-base. In this pillar the discussion also focused on the need to redefine a better integration between tourism and farming, with the aim to boost productivity and reduce import dependency. This concern was particularly raised by the small hotels owners associations and by the farmers’ cooperatives.

In itself, the CGF process has now already allowed for the confirmation of “what” is at stake and has shed some light as to “how” to tackle the challenge of needed reforms in the Caribbean. After listening to and participating in the CGF national dialogues, the authors of the notes included in this volume have intended to provide the evidence and analysis to better assist policy makers, private sector, civil society representatives and development practitioners on “how” to address the old and new challenges facing the Caribbean today.

THE FORMAT AND CONTENT OF THE BOOK

The content and format of this book was chosen in order to make relevant knowledge accessible to a wider audience, while beginning to fill Caribbean-specific knowledge gaps on areas of particular interest for the CGF and engage stakeholders discussing technical solutions. The policy and technical notes contained in this volume are written in a non-prescriptive format with the idea of inspiring action and animating national dialogues on growth, both within and beyond the CGF initiative. In most cases, the notes build on a wealth of ongoing analytical work that contains greater details than can be found here.

In particular, in its contribution to the conversation on air connectivity, Chapter 1 makes the case for a coordinated regional air policy in which OECS islands see themselves less in competition with one another, and more in need of closer regional cooperation to overcome both the small size of their economies and their isolation. While the focus is on the OECS, many considerations apply to the Caribbean as a whole.

Chapter 2, in turn, looks at recent African experiences with port reform to highlight the importance of a comprehensive approach that addresses the legal/regulatory and institutional underpinnings of the sector and is not limited to infrastructure alone. This is very much in line with many of the proposals coming from the CGF working groups, which have been calling for institutional strengthening to address logistics and connectivity challenges. A case in point is the issue of customs efficiency. Despite the openness of Caribbean economies, customs performance in the region is comparatively low, as shown in Chapter 3, and this inefficiency affects the region’s competitiveness. To overcome this challenge, many countries currently seek to modernize port infrastructure and ICT systems. However, if they do not pay sufficient attention to the institutional reforms that are needed to complement these modernization efforts, they

\[\text{12 For ease of reference, the notes are presented following the three broad themes of the Caribbean Growth Forum (e.g. Logistics and Connectivity, Investment Climate and Skills and Productivity), though this is a mostly artificial division of topics given how inter-related the issues are.}\]
risk missing all the benefits. Proposals to bring down costs and increase use of ICT, to improve the regulatory environment for telecoms investments, as well as to provide avenues to finance ICT start-ups through venture capital were common across countries. Chapter 4 describes the state of ICT development in the region and the significant opportunities arising from increased use of ICTs to accelerate and solidify economic and job growth objectives across all sectors and services. According to this Note an improved connectivity and linkages to markets, trade facilitation and ICT are essential if the Caribbean is to fully reap the benefits of participating in globalized markets. At the same time, a lot of discussion has revolved around what can be done to create a better environment for private sector development overall. Reducing the cost of doing business, increasing access to capital, strengthening institutions and legislation that encourage investments, and facilitating access to government services and information through e-government applications were considered key areas where immediate action could go a long way.

Another element for the region to consider is the impact of climate change on infrastructure and production, since it will directly affect connectivity and growth. Chapters 5 and 6 look more closely at tools and options to increase resiliency of infrastructure and service provision, as well as ways to improve risk management in key productive sectors such as agriculture, through market-based mechanisms that shift some of the risk away from the public sector alone. A more systematic approach to risk would greatly benefit Caribbean countries, with their high exposure levels and limited public resources.

One of the elements driving up the cost of doing business in many Caribbean countries, and holding back potential investments, is the high cost and low reliability of energy. Chapters 7 and 8 look at the economic impact of high and volatile oil prices in a context of high oil dependency; and at options to diversify power generation in the Caribbean, such as through the development of geothermal energy. Tax incentives, for example, are commonly used in the Caribbean to support growth and employment, but experience has shown that they do not always achieve the investment objectives they are initially designed for. Moreover, they typically involve a host of efficiency, equity, fiscal, and political economy issues, potentially slowing growth and reducing competitiveness. Chapter 9 contributes to this dialogue by analyzing the issues associated with the use of tax incentives and reviewing the challenges faced by the region, in terms of controlling tax expenditures. Chapters 10 and 11, in turn, look at options for leveraging capital. Faced with tight budget environments and large public debt, many governments in the region are reaching out to the private sector to leverage scarce public resources. Public-private partnerships have the potential to mobilize important private sector resources to meet existing infrastructure needs. In addition, the Caribbean diaspora is sizeable, well-educated, affluent, and interested in engaging even more “back home”. It can also play a role in jumpstarting venture capital engagement from the rest of the world, showing that the Caribbean has viable high growth enterprises.

Finally, it is important to keep in mind that the labor market, together with the economic landscape of the Caribbean, is changing fast. The manufacturing and agriculture sectors, which have historically been the main drivers of economic growth and employment, are quickly giving way to services. The discussions in the CGF working groups have reflected growing concerns that much of the training, particularly at the tertiary level, is too academic or theoretical and not geared towards supporting this change. Training is often viewed as not being sufficiently demand-driven, a problem that is often related to the absence of strong public/private sector partnerships in this area. Participants called for curriculum upgrades, improvements in existing certifications and also a rekindling and “re-branding” of Technical and Vocational Education and Training (TVET), which often suffers from a bad reputation in the region, as well as the establishment of tri-partite –private sector, public sector and trade unions- Productivity Councils.
The weakness of labor markets and the mismatch between private sector needs and the educational system require a renewed focus to help improve competitiveness and foster job creations. Chapter 12 highlights the social and economic cost of ignoring the challenges faced by youth in finding employment, and points to the need for social protection systems that support labor market policies. In particular, combining programs that aim at developing skills and bringing together employers and job seekers offer the greatest potential rewards. Chapter 13 describes international research showing that the subject matter learned and skillset developed in the classroom are better predictors of economic growth compared to the simple number of years in school, and that a multi-pronged approach between the public and private sector is required to achieve effective and high quality skill development. Chapter 14, on the other hand, sheds light on the threat posed by non-communicable diseases (NCDs) to productivity, an issue that is often not sufficiently exposed. The prevalence of NCDs in the Caribbean has impacts on labor market outcomes, including significant productivity losses due to absenteeism, disability, reduced functionality, and reductions in the average number of years of worker output.
CONCLUSIONS AND WAY FORWARD
The CGF approach, which brings together public and private actors, is seen by many as an innovative way to overcome current constraints in the Caribbean with a view to exchange experiences, and discuss challenges and solutions among peers. In contrast to past approaches, the CGF approach aimed to generate adaptation and acceptance of the changes proposed and build consensus around them. The process required opening up new communication channels between various stakeholders, for which a high degree of commitment by policy makers was needed. By creating the space to broaden the policymaking process to wider participation, the CGF fostered the finding of common grounds on concrete steps forward. With support from international partners, the CGF also helped to tap global resources and share knowledge on specific technical issues.

The CGF hinges on the creation of national and regional social coalition of reform-minded stakeholders. The CGF recognized early on that coalition-building exercises are not blueprint solutions. They require a proper understanding of the factors that underpin the low-level equilibrium that characterizes reform weary systems. Coalition building is also a costly and lengthy exercise. Too often in the past, consultations on policies have been used as a substitute for real participation and long-term partnerships. The CGF by contrast has engaged voices that were not always heard in the past to increase the legitimacy of the reforms and build the consensus necessary to carry out public policies and increase accountability in-between election cycles.

Going forward, the CGF is focusing on the implementation of critical reforms identified through the national and regional dialogues, while continuing to feed the conversations at the national and regional level on how to address pending challenges with more analytical work. New research and analysis will help fill in major knowledge and information gaps and promote the innovation needed to find alternative solutions to the identified challenges.

As the growth reform agenda in the Caribbean unfolds, more difficulties will unavoidably arise, and new opportunities for quicker, participative, transparent, and evidence-based implementation of policies will emerge. The CGF process is providing an alternative delivery methods that can help address these challenges and shape a new social contract for the Caribbean. The delivery challenge is indeed more than just passing laws or drafting policies, it means making changes tangible for people and translating them into clear measurable results. It is difficult, but not impossible, and the Caribbean is taking exciting steps towards this objective.

With the CGF, Caribbean governments have initiated a structured, transparent and accountable process engaging all stakeholders with the objective of accelerating reform and change, to promote private-sector led growth. The stakes are high, as the process could be crucial to breaking the traditional sub-optimal equilibrium that has been established. And it is the genuine commitment to change and to learn from both successes and failures among partners that has given the CGF such credibility.

REFERENCES


AIR TRANSPORT IN THE OECS: FLYING SOLO?

Heinrich C. Bofinger, Florencia Millan Placci, and Cecilia Briceño-Garmendia*
ABSTRACT

Most OECS countries exchange goods and services with the rest of the world via air and maritime transport, increasing transportation and infrastructure costs, and increasing vulnerability from disruption due to natural disasters. However, the cost of developing necessary infrastructure such as ports and airports is very high compared with the small size of most of these countries. Regional cooperation could take advantage of the economies of scale of such investments. This is particularly important for air transport, since countries in the region rely heavily on tourism, and studies show that stay-over tourism presents a greater growth and development opportunity compared to cruise visitors. Regional cooperation is particularly important for inter-island communication, where a spoke and hub system could greatly improve distribution of tourists.

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INTRODUCTION

OECS countries face two critical barriers for developing their infrastructure and connectivity: their conditions of island states and their geographic location in the Caribbean. Exchanges of goods and services with the rest of the world are limited to air and maritime transport modes, logistics costs are generally more expensive, and they face a disproportionate risk of natural disasters. This all translates into a cost premium for developing infrastructure, and higher transport services. Moreover, the OECS islands are small states characterized by small market size and this imposes an important limitation for developing large infrastructure assets, such as ports and airports. The long life cycles that characterize these types of assets and the important upfront capital investments required—even greater given the climate resilience required in this region—make them suited for larger markets in which it is possible to reap the benefits of the economies of scale proper of such investments. In the case of OECS countries, such economies of scale can only be developed through regional cooperation due to the size of their markets and economies.

Moreover, with the collapse of the region’s agricultural exports in recent decades, the tourism sector has emerged as a key economic pillar, contributing up to 12 percent of all jobs and about 14 percent of the region’s GDP in 2011. In the case of the OECS countries, in their condition of island states, tourism and air transport are invariably intertwined. Therefore, this note will take a look at the air transport sector and the implications for inter-island connectivity and regional coordination as the OECS countries aim to fully develop their potential in tourism, a crucial component of their economic growth strategies. The note will briefly outline how under-development of stay-over resort tourism relative to cruise ship tourism represents a growth and development opportunity, and that the challenge looking forward lies not only in more investments in assets, but rather in developing better and more coordinated hub-and-spoke systems. The note concludes that regional coordination for infrastructure investments and systems is one of the key elements needed for OECS countries to succeed in speeding up growth.
AIR TRANSPORT: A VITAL CHANNEL FOR THE TOURISM INDUSTRY

At the moment, cruise visitors, who are between 2.5 and 3 times more numerous than stay-over visitors, dominate in the category of international tourist arrivals in the OECS. As a matter of fact, the growth and development of tourism throughout 2000-2011 is largely attributable to the increase in cruise-ship passengers (Figure 1a, dashed line). During the same period, the numbers of stay-over visitors remained stable at about 1 million per year (Figure 1a, solid line). This is in contrast to what is observed in the main Caribbean destinations such as Jamaica, Bahamas, and Aruba,¹ where stay-over visitors dominate international tourism.

This difference has important economic implications, as cruise ship visitors do not offer the same revenue opportunities as stay-over resort visitors do. Passengers of a cruise ship consume by going on local excursions, and going shopping at the country being visited. Stay-over visitors spend much more on hotels, restaurants, excursions, transportation, and shopping per stay. It should not come as a surprise that between 2000 and 2011, while the number of international cruise-ship passengers increased about 66 percent (40 percent if we include all international visitors) the income generated by all passengers measured in terms of traceable spending increased only about 25 percent from approximately US$950 million in 2000 to US$1,180 million in 2011 (Figure 1b). Anecdotal evidence indicates that average per head spending of visitors arriving by cruise ship was around US$ 50-120 during the global economic downturn, whereas stay-over visitors typically spend more than US$ 1,000.

Figure 1: Eastern Caribbean Countries International Tourism

(a) Stay-over and cruise ship passengers

(b) Total visitor expenditure

![Graph showing tourist arrivals and expenditures](image)

Source: Authors’ calculations based on ECCB data.

¹ The leaders are Dominican Republic, with 4.306 million arrivals during 2011, Cuba, with 2.688 million, Jamaica with 1.952 million, Bahamas with 1.344 million, Aruba with 871 thousand and Barbados with 568 thousand. Together, these countries host 56% of the tourists that arrive internationally to the Caribbean. The first 3 countries, Dominican Republic, Cuba, and Jamaica account for 43% of the tourist arrivals in 2011 (WTO. 2012).
The fact that OECS international tourism is currently skewed towards cruise-ship passengers creates an opportunity waiting to be grabbed, and has important implications for air connectivity. Even with a relatively small share of international passengers in stay over (one third of total in 2011), the overall contribution of tourism to the economy is quite significant, ranging from 24 percent in Grenada to 74 percent in Antigua and Barbuda (WTTC, 2012). This is much higher than the 14-16 percent that tourism contributes to the overall economies of the leading Caribbean destinations. If and when stay-over trends improve, the local economies can benefit from higher demand from items typically consumed by stay-over tourists such as traditional crops (including mango, pineapple, and papaya); fresh produce; fish and seafood; services, including those provided at yachts and marinas; and hotel receipts linked to services and goods; among other things. The main way for higher-revenue tourists to arrive is through airlift, making air transport the vital pipeline for hotel arrivals. Focusing on increasing stay-over tourism therefore implies tackling the intraregional and interregional air connectivity of the OECS islands.

Given the physical infrastructure layout, many of the islands rely on other countries and intraregional traffic to connect with the rest of the world. The OECS islands are connected by two types of air transport systems, one linking islands among themselves, and another connecting them to longer-distance destinations. The inter-island system is served predominantly by one carrier, LIAT. A separate system links the OECS region with the origin of its arriving tourists and it is served by international (no-OECS) carriers. Currently, the two systems are poorly interlinked.

The inter-island system is wrought with inefficiencies and mixed connectivity. The Inter-island air service operates in a challenging environment in which for some pairs of islands there is barely a flight connection in one or two days. Table 1 shows how difficult it might be to visit St. Kitts from another neighboring OECS country. It can take 4-9 hours or even overnight, and up to two connections. St. Vincent faces a similar situation. This situation represents an enormous cost for inter-island connectivity but it also creates enormous hurdles for international tourism. The main inter-island carrier LIAT currently does not interline with any of the other larger carriers, so it cannot really contribute to the efficient distribution of tourists amongst the islands. Moreover, LIAT’s reliability in recent years is being challenged by its inability to recover costs. This is having an important impact on maintenance. Schedule integrity is often compromised due to the breakdown of equipment. Since LIAT is a de facto monopoly, such unreliability means that many OECS islands are not only poorly connected but the existing connections work erratically and unpredictably.

The lack of reliability of the inter-island air service creates incentives for islands to invest in their own air infrastructure in individual bases to connect them with the rest of the world, rather than cooperate to develop a functional hub-and-spoke system of inter-island connectivity. Thus, the system connecting OECS with the rest of the world depends on the ability of each individual island infrastructure to accommodate large aircrafts. In general, the OECS region has two important hubs: Antigua in the north, and Barbados in the south. Trinidad also serves as a connection point. However, four of the six OECS islands under review—Antigua, Grenada, St. Kitts and Nevis, and St. Lucia—also have runways that are capable of handling wide-body aircraft. In the current structure of routes, this means that each of them receives their own direct or semi-direct long-distance flights bringing passengers to their island instead of relying on the inter-island connectivity system anchored in two hubs. Other OECS countries are starting to follow this model.

\[\text{As reported in interviews by some LIAT officials, as many as 39 out of 112 daily flights are not profitable.}\]
OECS islands are increasingly locking themselves in over-dimensioned infrastructure investments to bypass a dysfunctional inter-island system. St. Vincent is building a brand new greenfield airport with a 9,000 foot runway and a 1.4 million passenger annual capacity terminal hoping to support its tourism development in the longer term. The expected opening will be in 2014, with the majority of the earthworks already completed. Dominica is also considering options for a new airport or extending its main runway into the ocean, and recently completed additional infrastructure investments to increase terminal capacity. Both Grenada and St. Lucia have considerable excess capacity in their terminals (with utilization rates below 50 percent), significantly raising their overheads. St. Vincent had less than 200,000 passengers in 2012, yet the new terminal being built will have a capacity of 1.4 million passengers.

This ‘decentralized’ investment decision-making process is creating a public sector conundrum: to unlock the tourism sector, OECS countries need reliable air connectivity with the rest of the world that, in the absence of a reliable inter-island system --for now dominated by a monopoly that has reached capacity— leads countries to think individually and invest by themselves in expensive infrastructure that could be designed more efficiently if they considered the region as a whole. Moreover, once a country has locked-in expensive long-life assets such as airports, ensuring that tourism takes off becomes even more critical in order to guarantee the economic returns of such investments. This situation creates additional incentives for OECS countries to engage in interventions that aim to secure each individual country a minimum flow of tourists. Bilateral agreements and subsidies to airliners, in particular, have become a common practice.

Aiming to support a sector that is essential for their economies and develop a secure flow of tourists, some of the OECS countries provide subsidies to air transportation. Throughout the Caribbean, even in highly successful resort destinations such as Jamaica, major airlines negotiate agreements with island governments that protect them in the case of a downturn. The agreements are generally of two types: Marketing Support Agreements (MSA) and Minimum Revenue Guarantees (MRGs). In MSAs a country makes funds available to an airline for marketing purposes. In the case of MRGs, a government guarantees that if a specified load factor or volume over a given period is not achieved it will pay for (i.e. “take delivery”) of the unwanted capacity. In 2012 the net fiscal effect of these agreements amounted to between 0.12 and 0.2 percent of GDP, or between 0.6 and 1 percent of tax revenues, and between 0.1 and 0.3 percent of public debt (Bofinger and Millan, 2013). Individual ministries see these agreements as expensive items on their budgets. Also, the overall question can be raised as to who is really paying for these benefits, which are ultimately an indirect subsidy to the hotel industry that captures stay-over visitors. Since funding for most of these agreements comes from overall tax revenues, the agreements are financed with funds outside the tourism sector that could arguably be allocated to other uses including education, health or any other social cause.
CONCLUSIONS

The OECS has a high concentration of international airports within short distances. Most of the islands are receiving international tourists directly from their countries of origin instead of building a hub-and-spoke system that would optimize the regional investment in expensive air transport infrastructure. The individual -as opposed to coordinated- decision-making not only makes infrastructure investment more expensive and inefficient for the region but also creates enormous pressures for each government to secure a share of the tourist market individually. To neutralize the unpredictability of those tourism streams, and therefore of the load factors on the aircraft delivering the service, OECS countries have entered into individualized agreements with airlines in order to ensure connectivity. The cost of these agreements can be up to 1 percent of the GDP, but the political tag is significantly higher as subsidies are perceived as unnecessary and expensive items in the budget.

Moreover, the negotiation of these agreements raises the question of how much the OECS could gain by acting as one block in negotiating with airlines. It also underscores the importance of establishing a more efficient hub-and-spoke system for treating tourist arrivals. A system of two hubs, one in the north (Jamaica perhaps) and one in the south (Barbados or Trinidad), was suggested as a possible solution in recent meetings with the Caribbean Hotel and Tourism Association. This would pool most arriving passengers into more sustainable load factors from long-haul flights, and could also create the density needed to make the inter-island transport system more sustainable, with benefits spilling over beyond tourism per se. A hub system would most likely provide more flexibility in matching supply with demand during high as well as low season, when inter-island business and Government travel drive the demand.

Coordination is not an easy feat, but if the OECS wants to go forward with a regional policy it will be necessary for the islands to see themselves less in competition with one another: they will need to cooperate with each other to overcome the small size of their economies and their isolation.

It is time for OECS countries to stop flying solo.
REFERENCES


THE CHALLENGES TO SMALL CARIBBEAN PORTS: ARE THERE LESSONS TO BE LEARNED FROM RECENT PORT REFORMS IN AFRICA?

Gylfi Palsson
ABSTRACT

Although ports are crucial for the economic growth and prosperity of the smaller Caribbean islands, they are often criticized for their inefficiency, mismanagement, delays, high costs, and political patronage. Furthermore, doubts have been raised, due to their small size, as to whether they can attract the kind of investment from professional private terminal operators, under a landlord port management model, seen as necessary to improve their performance. This policy note presents some experiences of successful port reforms in Africa. It concludes that, generally speaking, reform most often requires comprehensive actions addressing legal, institutional, labor and Public Private Partnership (PPP) aspects. Furthermore, the highest possible level of political commitment is necessary, authorities must develop a thorough understanding of the root causes of port inefficiencies and design appropriate reforms, and stakeholders should be consulted. If ports are overstaffed, labor issues will also need to be addressed. In addition, the design of the concession should take into account not only the requirements of the port but also the realities of the market. Finally, well-designed, transparent and competitive transaction processes lead to better outcomes.

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INTRODUCTION

Smaller islands in the Caribbean are faced with a very particular challenge with respect to their ports: They are the gateways in and out of the country and a basic pillar for the economic wellbeing and future of the country, and yet the ports are often the focus of sometimes-justifiable criticism for inefficiencies, mismanagement, delays, high cost and in some cases maybe even political patronage. Furthermore, the traffic through the port is in the global scheme of things very small, which raises doubts as to whether the ports can attract what is often viewed as the magic solution for improving performance - concession of port operations under a landlord port management model to professional private terminal operators.

This paper examines some issues that these countries might want to examine to obtain ideas for addressing the specific challenges facing these kinds of ports, as well as some useful experiences of other ports to implement, or avoid.
PORT REFORMS IN AFRICA

The most recent port reforms in Africa have been comprehensive, using diagnostics and analysis to arrive at a holistic understanding of the challenges of the sector. This has led to port sector reform approach that tries to address the legal/regulatory, institutional and social/labor underpinnings of the sector; and is often accompanied with measures aimed at increasing the role and responsibility of the private sector in port operations. In some cases, concessions were authorized for relatively small terminals.

Drawing on those experiences in Africa – both successes and in a handful of cases where efforts were not sustained long enough to obtain results- this brief paper highlights some of the pertinent aspects of port sector reform: from the time it is realized that serious change is needed in the sector until the time when the necessary changes are implemented. Some of these may be relevant to the experience in the Caribbean port sectors.

A series of epiphanies: Many African ports experienced extended periods where performance of the sector was gradually declining. Often, these declines were accompanied by rising concerns and demands for improvements, and gradually developed into a political issue. The high costs of certain ports were occasionally an issue, but more generally it was the declining performance of the overall sector, causing shipping lines to raise liner tariffs in response to longer wait and berth times in some instances, and even to leave containers to catch up on schedules in some cases. Other problems included customers who had to wait long periods until their containers could be processed, and the absence of efficiency improvements, due to a lack of investment in basic infrastructure. In sum, the lack of proper management was creating chaos in port operations. The result was always the same: less and more-costly port and maritime service for the country, which created a self-imposed and completely avoidable barrier to the country’s trade.

Change in any organization is difficult – often in ports it is made even more difficult because of the public service function of ports, public perception of ports as jewels of the economy, and pervasive political influence on management as well as strong union role. It is therefore understandable that as criticism of port performance increases and goes beyond complaints by the port community, political efforts are made to find the one or two actions that will turn the situation around. Sadly, the roots of the decline of the ports are almost always deep and systemic and require a long term, comprehensive, solution.
It is only when the realization starts taking hold among the various stakeholders that something fundamental needs to be done about the situation in the port – a broad understanding that things need to change – that the country condition for starting to address the problem is in place.

The final and concluding epiphany takes place when political authorities at the highest level give their support for a fundamental change in the port sector. The experience of port reform in African has one constant: where a high level of political commitment to reform of the sector was in place, reform succeeded; where strong political will was lacking, the port sector reforms did not succeed.

Diagnostics and Reform Design: Frequently, at the same time that the need for comprehensive port reform is being digested among stakeholders, diagnostics of the port issues take place, which help to develop and design proper reform. In other cases these diagnostics work only takes place after political decision to change has been made - depending on the political space and circumstances at the time.

These diagnostics, often conducted by specialized consultants, normally examine various possible port models to emulate, review and recommend changes to the legal and regulatory framework, organizational structure and role of port authorities; establish benchmarks for human resource requirements and evaluate existing levels of labor and skills, what skills would be required under optimal situation and how to address any discrepancies.

During both the diagnostic and reform design phases, a good practice is to undertake a number of consultations with stakeholders. These not only improve the quality of the diagnostics, and thus of the reform, but also inform stakeholders and jump-start the process of eventual implementation of the reform. However, authorities are often reluctant to undertake such consultation. In order to resolve this impasse, the Sierra Leone Port Authority essentially asked the World Bank to be the honest broker in the initial discussions with the port labor unions.

In the experience of African countries, nearly without exception, part of the reform solutions have included the introduction or restructuring of private sector involvement in port operations, in one capacity or another. As a general rule, concessions should be decided in the last stage of implementation: in Nigeria handover of concessions were delayed about 6 months because the government had not concluded negotiations, including agreements on compensation for redundancies, with the labor sector.

Box 2: Nigerian Presidential Decision

Under World Bank funding (PPIAF) comprehensive policy and planning recommendations for reform of the Nigeria port sector were prepared in 2002, and extensively discussed at political as well as technical level. However, the reform was put on hold for the following two years while the country went through a presidential election. President Obasanjo, newly reelected, decided in 2004 that Nigeria needed to revamp its port sector – at the time generally recognized around the world as one of the worst performing ones. In the following 30 months or so, the government drafted a new port bill; restructured and reformulated the Port Authority; carried out redundancies with compensation affecting 25,000 staff and casual labor; and awarded concessions for the operation of 26 port terminals. The lesson is that with good analytical underpinning and unwavering political commitment, challenging port reform can be implemented quickly even when confronted with competing interests.
By the end of this diagnostic and reform design phase, authorities need to have a clear set of objectives for the reform.

Legal, Regulatory, Institutional and Labor Reform: In many of the African countries that have undertaken reform, the original legislation, a Port Act, dated to the period immediately following independence in the sixties. Frequently the original legislation envisioned a port authority service model, where the public port authority was responsible for delivery of all port operations, and where the legal authority to outsource or concession part of the operation did not exist or was difficult to interpret.

As countries began to fully understand the different choices of port models, they each ended up pursuing the landlord model – as is the case worldwide. In the main, under the landlord model a port authority constructs and owns the basic port infrastructure, and controls marine services, while the private sector, under leasing, concession or usufruct agreements, operates that infrastructure and is responsible for providing equipment and constructing the superstructure.

On the basis of that model, new legislation was drafted or existing legislation updated and amended. The role and responsibilities of the public sector, to be executed through a public port authority, was decided on and incorporated into the legislation. Authorities attempted to integrate a requirement for a commercially oriented institution into the legislation, for instance in the selection, terms and responsibility of a port authority board; in the establishment of regulations governing the selection of Managing Directors; and in requirements for openness of financial information, issuance of annual reports and their availability to the public.

In some cases, pre-reform ports were excessively overstuffed - in some cases by factors of up to 6 to 7 times what benchmark staffing would be. Obviously, such overstaffing had to be addressed as part of a reform. An added dimension sometimes was overly generous conditions of service (including pension obligations) that made cost of redundancies exorbitant and indeed beyond capacity of port authorities and governments to finance. As a consequence, extensive negotiations with labor unions and eventual settlements were necessary. In the end, labor unions came to understand that reform was needed and how it would affect them. One labor leader stated to the writer of this paper after a 5 hour long discussion with a group of about a dozen Nigerian union representatives: “We know the reform will go through. We just want to hold out for the best deal possible”.

Box 3: Layoffs

The Liberian Government faces enormous challenges in rebuilding its basic infrastructure after decades of damage and neglect due to civil war. The 600 meters of berths at the main terminal in the Freeport of Monrovia were not only approaching the end of their useful life (built in 1946); they were literally collapsing, with parts rendered non-operational due to failing strength integrity. The port throughput was only one million tons. In designing the “width and breadth” of the concession the Government eventually decided to go as far as possible in moving operational and investment responsibility to a concessionaire. Following a well-planned process aimed at maximizing the benefit to the country, a concession was awarded to APM Terminals, for (i) terminal operations including container and general cargo and (ii) tug and pilot service. The investment obligation included all terminal equipment, new tugs and pilot boats and construction of a new 600 meter quay. Reportedly, the investment alone was valued at US$120 million. The lesson learned is that a well elaborated and smart concession design can bring great benefits even to a small port.
Well-designed redundancy packages include not only payments to workers who are made redundant, but may also include counseling and training, education grants, microcredits to establish new small enterprises and other measures designed to reduce the risk that the redundant labor falls into poverty.

The Holy Grail: The legal, institutional and labor reform can be thought of as putting in place the needed framework for well-operated ports; sometimes accompanied by restructuring existing private sector involvement in port operations or in most cases introducing the private sector into port operations hitherto conducted directly by the port authority.

When formulating the approach to concession of operations, it is important to take into account the existing and expected future rate of growth of a port, as well as its transshipment potential. For instance, a port with 400,000 TEU through-put could be expected to sustain two competing concessions (depending of course on port space and configurations). A relevant question for smaller Caribbean ports would be whether there is a lower limit on throughput where it becomes impossible to attract a traditional concession.

The unfortunately ambiguous answer is that it depends. In the end, a concessionaire looks at the expected profitability of operating a terminal. In that evaluation the combination of volume of traffic, applicable tariffs and perhaps other factors such as a vested interest in quicker service for the concessionaire’s own vessels come into play.

The throughput of some of the terminals with the smallest volumes operated as concessions in Africa over the past 10 years has only been about 50,000 TEU. But the very recent example of such a concession, in Liberia, may indicate that the volume of traffic can be even lower and still attract interest and competition for terminals by competent operators - even in a country still considered high risk because of recent conflict. Significant investment and operational obligations were placed on the concession – indeed far beyond what normally is seen in port concessions. Yet, through careful formulation of the concession, market sounding, tariff adjustments, and an exceptionally well-prepared concession process, this concession was successfully implemented and has now been in operation for just over 2 years (see text box “The Monrovia Concession”).

While concessions in larger ports follow familiar path, there is no infallible formula or approach to concessions of smaller ports. While the design of the concession would be oriented towards the particular needs of a port, each concession also needs to take into account the potentially limited interest of the market. It can be helpful to use the technique of market sounding, where the preliminary design of the concession parameters are presented to a number of potentially interested terminal operators, and the final design of the concession is adapted, on basis of their response.

Box 4: The Monrovia Concession
The Liberian Government faces enormous challenges in rebuilding its basic infrastructure after decades of damage and neglect due to civil war. The 600 meters of berths at the main terminal in the Freeport of Monrovia were not only approaching the end of their useful life (built in 1946); they were literally collapsing, with parts rendered non-operational due to failing strength integrity. The port throughput was only one million tons. In designing the “width and breadth” of the concession the Government eventually decided to go as far as possible in moving operational and investment responsibility to a concessionaire. Following a well-planned process aimed at maximizing the benefit to the country, a concession was awarded to APM Terminals, for (i) terminal operations including container and general cargo and (ii) tug and pilot service. The investment obligation included all terminal equipment, new tugs and pilot boats and construction of a new 600 meter quay. Reportedly, the investment alone was valued at US$120 million. The lesson learned is that a well elaborated and smart concession design can bring great benefits even to a small port.
Authorities need to conduct an open discussion about the concession design and about what functions of the port will be operated as a concession, as well about the objectives of the concession: whether the intent of the concession should be to get the greatest value for the concession, to drive down overall costs, to obtain the highest-possible level of efficiency, to attract investment, to attract know how, or to obtain some combination of these goals. Furthermore, what type of concessionaire is desirable and what type of profile should the concessionaire have?

The concession process normally follows a path where due diligence for the concession is undertaken, resulting in a series of reports and opinions on aspects that may affect the concession, such as legal and regulatory, operational, technical and engineering, equipment, institutional, human resources/labor, environmental and financial aspects, and on the creation of a financial model which will help in refining the concession design and tariff issues. On basis of the concession design and informed by issues discovered and exposed in the preparation of the due diligence, a formal request for expression of interest is issued, sometimes accompanied by a brief Information Memorandum. On basis of the responses and within the established parameters of the request for Expression of Interest, a shortlist of terminal operators will be invited to submit a proposal for the concession on basis of a Request for Proposals. To the extent possible, selection criteria need to be quantitative so as to ensure transparency in the process.

In one case in Africa, the period of proposals built in two rounds of comments on a draft contract that would eventually govern the concession. This resulted in an important drop in the number of issues that eventually needed to be addressed during the negotiation process and – importantly – addressed through open consultations with competing terminal operators the technical, operational and procedural details of the concessions. This turned out to be an exceptionally successful addition to the process.

An inevitable issue raised in the process in the concessions in Africa is the question of how to accommodate economic regulations. For the most part independent economic regulatory agencies to which the concession contracts can refer issues related to tariffs do not exist in Africa. For the most part, the contract itself plays the role of economic regulation, since it contains clauses that describe how to resolve these issues. In one case the government initiated steps to establish an independent transport commission to regulate all transport tariffs.

There are a handful of lessons to be drawn from the African port reforms of the past years that reform minded stakeholders in the Caribbean may want to keep in mind.

- Generally speaking, there are no silver bullet solutions. Proper reform most often requires comprehensive actions addressing legal, institutional, labor and PPP aspects.
- Without the highest possible level of political commitment, chances for successful reform are compromised.
- Authorities must develop a thorough understanding of the root causes of port inefficiencies and design appropriate reforms.
- Stakeholders should be consulted in the design and implementation of reforms to improve and facilitate the process of change and final results.
- If ports are overstaffed, labor issues need to be addressed; eventual solutions should include measures to try to ensure that the workers who are made redundant have the opportunity to find new jobs.
- When it comes to concessions of small ports, the design of the concession should take into account not only the requirements of the port but also the realities of the market.
- Well-designed, transparent and competitive transaction processes lead to better outcomes.
TRADE FACILITATION IN THE CARIBBEAN: THE CASE OF CUSTOMS PERFORMANCE
ABSTRACT

Although the Caribbean countries have very open economies, in terms of their dependence on trade and investment flows, this policy note argues that their customs performance is low, both compared to best practices, and to practices in Latin American countries. Using data from the Customs Assessment Trade Toolkit, it shows that customs processes in the region do not meet adequate standards in terms of speed, predictability, and transparency, in part because they fail to take sufficient advantage of ICT. This note concludes with some policy recommendations, including: Reducing dependence on tariffs for the government’s total revenue, clarifying the role of the customs offices, promoting regional agreements to consolidate customs processes, establishing alliances with the private sector to improve procedures. It also proposes a number of institutional reforms to enhance the performance of customs systems, including prioritizing the completion, implementation and dissemination of SOPs, promoting continual improvements by strengthening strategic thinking, ensuring that ICT information is available to the decision-makers, establishing the procedures and the incentives to fully appropriate the potential of ICT systems, and introducing productivity incentives to promote better performance.

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INTRODUCTION

The Caribbean countries\(^3\) have highly open economies (World Bank & OAS, 2009). The trade of goods and services and the inflows from Foreign Direct Investments (FDI) represent large proportions of their Gross Domestic Products (GDP), especially in English Speaking Caribbean (ESC) countries\(^4\). Therefore, the proper functioning of the channels that connect them to the rest of the world, including customs offices, is essential to the performance of their economies.

However, this note will show that, despite their integration into the world economy, customs performance in the Caribbean countries is comparatively low. This note presents data from the Customs Assessment Trade Toolkit (CATT), which provides empirical evidence that customs processes do not meet adequate standards in terms of speed, predictability and transparency. This inconsistency is partially explained by the fact that actual operational practices fail to make effective use of Information and Communication Technologies (ICT) systems.

\(^3\) In this report the Caribbean refers to the World Bank definition for this region, which includes these 15 countries: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago.

\(^4\) In this report the English Speaking Caribbean (ESC) includes 12 countries: Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines and Trinidad and Tobago.
This policy note is organized as follows. The following section presents evidence on the economic profile of the Caribbean countries to show their high integration to the world economy. Trade and Foreign Direct Investments are the key aspects being considered in this regard. The next section discusses the role of customs systems for economic development. It analyzes the performance of the Caribbean customs offices in a number of aspects (clearance times, predictability, and transparency) that the literature has identified as critical to promote competitiveness and development. This analysis relies on data produced by the CATT, an integrated monitoring tool that considers the evidence provided by local teams and compares it against good practices in the field (See Box 1, used by the World Bank since 2011). The data is defined in accordance to international best practices recommended and promoted by international organizations such as the World Customs Organization (WCO) and the World Trade Organization (WTO). Thus, the CATT is a source of objective evidence about the performance of the customs systems.

This analysis is expanded in the following section by focusing on how the use of ICT can improve customs performance in those aspects, followed by a summary of the lessons learned by the analysis of these data. Finally, the conclusions section presents some policy recommendations to deal with the inconsistency between high economic openness and low customs performance in the Caribbean countries.

**Box 1: CATT’s methodology in detail**

Operationally, good practices are incorporated into the CATT through the definition of 120 indicators that measure the gap between the current situation and good practices, scoring it from zero to 100%. Once indicators are measured, they affect seven intuitive dimensions (processes orientation, strategic thinking, control, efficiency, effectiveness, facilitation, and transparency), which are likewise measured from zero to 100%. Finally, these seven dimensions are aggregated into two high level dimensions: performance and practice. This aggregation process enables the CATT team to present assessments outcomes through a bi-dimensional figure which, in ranks of 25 percent points, classifies customs in four categories: world class at the top, contender in the second quarter, progress in the third quarter, and underperforming at the bottom.

**PROFILE OF THE CARIBBEAN ECONOMIES**

Trade represents 44% of the GDP of the entire Latin American & Caribbean (LAC) region, but for the Caribbean countries this value is substantially higher. This is especially true in most ESC economies: for Guyana, Antigua and Barbuda, Belize, Barbados, St. Lucia and Trinidad and Tobago, trade represents over 100% of GDP, and for The Bahamas, St. Vincent and the Grenadines and Dominica, the figure is almost that high. (See Figure 1).
In most Caribbean countries, this strong trade activity involves mainly exports of services (such as tourism) and imports of goods. The receipts from tourism only represent 6% of the LAC exports, but for many ESC countries (The Bahamas, Antigua and Barbuda, Grenada, Jamaica, St. Lucia, Barbados) this figure exceeds 50%. And while imported goods only constitute 19% of LAC’s GDP, this proportion is substantially higher for every Caribbean nation.

For several ESC countries, like Guyana, Antigua and Barbuda, Belize, St. Vincent and the Grenadines, St. Lucia and Barbados, the imports of goods even exceed 50% of their GDP. This fact underscores the importance of customs performance for their economies.

Figure 1: Trade as % of GDP (2011)

Intra-regional trade is low and concentrated on oil. All countries buy at least 60% of their imports from outside the region, and some of them (like Trinidad and Tobago and Belize) obtain almost all of their imports from outside the Caribbean. This lack of intra-regional trade is explained by the absence of complementarity and by the low competitiveness of their economies (CARICOM, 2010). The United States is by far the main trade partner of the Caribbean, denoting the influence of the US economic cycle on these countries’ performance.

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6 Unlike the exports of goods (which only represent, on average, 19% of the total exports in the Caribbean countries), the exports of services are not registered and controlled by customs systems. However, to provide these services companies (like hotels) usually need to import goods, which again highlight the relevance of the customs offices for their economies.

7 The low degree of regional integration can also be influenced by the cumbersome customs procedures in these countries, which can act as an entry barrier for smaller, regional companies.
The Caribbean economies also rely heavily on Foreign Direct Investments. Net inflows of FDI represent less than 3% of the LAC’s GDP, but this figure is higher for most Caribbean nations (Trinidad and Tobago, Haiti, Jamaica and Suriname are the exceptions). For small economies, like the ones of St. Kitts and Nevis and St. Vincent and the Grenadines, FDIs exceed 15% of GDP (Chart 5 in the Appendix). Thus, we can observe how open the Caribbean countries are by combining the two dimensions of trade and FDIs as proportions of GDP (Figure 2). When compared to the LAC region as a whole, the Caribbean countries, and especially the ESC nations, depend substantially more on trade and on foreign investment.

Their fiscal situation is also dependent on trade, due to their reliance on tariffs for the collection of revenue. Although several countries have reduced their dependence on international trade taxes in the last few years, such taxes still constitute a higher share of total revenue in the Caribbean than in the LAC region as a whole. In The Bahamas, taxes on trade exceed 50% of all government revenue, and this figure is approximately 25% in Belize and Grenada (Chart 6 in the Appendix). This is partly explained by the fact that all Caribbean countries have higher mean tariff rates than the LAC region taken as a whole, with particularly high rates in The Bahamas, Barbados, Antigua and Barbuda, Suriname, St. Kitts and Nevis and Trinidad and Tobago (Chart 7 in the Appendix). This high reliance on trade taxes may reinforce a perception of customs offices simply as revenue-collection agencies, instead of seeing them as key actors for the smooth functioning of trade.

THE ROLE OF CUSTOMS IN ECONOMIC DEVELOPMENT: SIX CARIBBEAN CASES

There are two obvious channels by which customs interventions impact the economy directly. First, the pass-through effect of duties, taxes, and transaction costs over domestic prices, which is of particular importance in terms of the cost of living in countries where most goods are imported. And second, through revenue collection, a key feature in countries with a narrow fiscal base. Nevertheless, the impact of customs systems on the economy is broader since they affect the capacity of a country to attract investors, increase competitiveness, and boost exports.

Over time, three factors have been identified as critical for customs administrations to promote economic competitiveness and development: clearance times, predictability and transparency (International Chamber of Commerce, 1999; OECD, 2009; Shujie and Shili, 2010). Delays at the border and to the lack of transparency and predictability cause economic losses that can even exceed the costs.
of tariffs (Engman, 2009). In small and open economies that rely heavily on trade and foreign investment, like those of the Caribbean countries, these dimensions are especially relevant for their economic development⁸.

The first factor, clearance times, requires minimizing the burden associated with customs procedures, by simplifying the operations involved in the movement of goods across borders. The notion of “trade facilitation”, with its emphasis on the reduction of time-consuming and unnecessary operations (Grainger 2011), is similar. It has been shown that delays at the borders significantly reduce international trade (de Jong and Bogmans, 2011). Nowadays, when not only the trade of goods but also their production is global (Maskin, 2010), ensuring “just in time” delivery of inputs, capital goods, and goods is especially critical to ensure efficiency and competitiveness. Delays are costly to investors, so they prefer to locate in countries with quick customs procedures. Furthermore, a country’s exports can also be significantly increased by a reduction in clearance times (Djankov, Freund and Pham 2010).

The CATT assessments in the Caribbean¹⁰ show that the indicators related to clearance times are underperforming in comparison with good practices, as well as with the average for Latin America. In addition, their negative effect on the economy is aggravated by the fact that nearly 100 percent of entries are subject to physical examination¹¹. The following table presents a summary of the measurements of clearance times in six diverse Caribbean countries¹².

### Table 1. Caribbean customs performance in clearance times¹³

<table>
<thead>
<tr>
<th>CATT indicators</th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of imports released in less than 24hs</td>
<td>36%</td>
<td>29.43%</td>
<td>14.51%</td>
<td>75.92%</td>
<td>NA</td>
<td>0.47%</td>
<td>82.67%</td>
<td>70%</td>
</tr>
<tr>
<td>Average number of days to import</td>
<td>5.55</td>
<td>NA</td>
<td>12.11</td>
<td>1.76</td>
<td>NA</td>
<td>3.19</td>
<td>2.55</td>
<td>Closest to 0</td>
</tr>
<tr>
<td>% of imports processed in advance to goods arrival</td>
<td>0%</td>
<td>3.43%</td>
<td>NA</td>
<td>1.24%</td>
<td>0%</td>
<td>NA</td>
<td>13.05%</td>
<td>50%</td>
</tr>
<tr>
<td>Average time for imports’ physical inspections (hours)</td>
<td>37.68%</td>
<td>66</td>
<td>NA</td>
<td>128</td>
<td>NA</td>
<td>40.13</td>
<td>27.21</td>
<td>8 hours</td>
</tr>
</tbody>
</table>

⁸ In this policy note we are not considering the impact that trade can have on a country’s inequality levels (see Kremer and Maskin 2006). However, for countries with already open economies, poor customs performance (which increases transaction costs for imported merchandise) can disproportionately affect lower income individuals, who destine a larger share of their income to the consumption of goods.

⁹ Logistics performance is critical in a context where central banks have limited power to increase countries’ competitiveness by depreciating the local currency.

¹⁰ The CATT, used by the World Bank since 2011, is an integrated monitoring tool that considers the evidence provided by local teams and compares it against good practices in the field (See Box 1). These are defined in accordance to international best practices recommended and promoted by international organizations such as the World Customs Organization (WCO) and the World Trade Organization (WTO). Thus, the CATT is a source of objective evidence about the performance of the customs systems.

¹¹ During the CATT assessments it was shown that Customs officers often reroute entries selected for green lane (i.e. immediate release) to red lane without registering decisions and outcomes in the system.

¹² The table presents a selection of the main CATT indicators related to clearance times. The same procedure was applied in Tables 2 and 3. Countries are not indicated due to the reserved nature of CATT data.

¹³ Names of countries are not disclosed because assessed countries did not provide their permission to disclose it.
The second factor, predictability, is also critical to improving a country’s competitiveness. In general, institutional uncertainty has been found to significantly reduce trade by increasing transaction costs (Büge 2010). In the case of customs offices, erratic or unreliable procedures increase costs by requiring the maintenance of large “safety stocks” on the part of businesses. These costs are eventually transferred to the consumer, and therefore can be regarded as a hidden tax (and without the government collecting any revenue from it). Moreover, when businesses are uncertain about how the customs will decide, they may even be discouraged from operating in a certain country. On the other hand, when formal processes are followed and delivery is consistent and predictable, costs are reduced and competitiveness is enhanced.

**Caribbean customs offices are performing poorly in terms of predictability, as shown in Table 2.** In fact, almost none of the indicators associated with predictability (in the sense that they show that traders perceive them as consistent and regular) present positive values in any of the countries.

### Table 2. Caribbean customs performance in terms of predictability

<table>
<thead>
<tr>
<th>CATT indicators</th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existence of a single window mechanism for clearing import goods</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Implementation of the Authorized Economic Operators Program (WCO)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Legal processes are handled by specialized courts</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Existence of a maximum allowable time for clearance procedures</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Source: CATT.*
The third critical factor, transparency, is associated with the two previous ones. Traditionally, longer trade times are associated with higher levels of trade-related corruption because traders have an incentive to make side-payments to speed up procedures (Shepherd, 2010). Lack of predictability is also tied to a higher risk of corrupt behavior, because it creates an uncertain context under which those practices can occur. Arbitrary decisions in the valuation or inspection of goods can disrupt logistical flows and increase transaction costs, leading again to the imposition of a hidden tax on the final value of the products. The presence of corruption also reduces the flow of foreign direct investments (Wei, 1997). Providing traders with clear and accessible information on the required documentation, for example, contributes to ensure transparency in the process.

Caribbean customs are also underperforming in terms of transparency, as shown in Table 3. Most countries do not publish adequate and accessible information, and do not conduct regular surveys about corruption perceptions.

Table 3. Caribbean customs performance in terms of transparency

<table>
<thead>
<tr>
<th></th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publishes changes in law, new regulations and programs</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Measures the corruption perception by using surveys or equivalent systems</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Allows users to view the status of imports/exports declarations online</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Publishes tariff classification and valuation rules</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Source: CATT.

The economic literature argues that the three factors covered in this section (clearance times, predictability and transparency) can be improved by the adoption of technologies that make customs procedures shorter, more consistent and less arbitrary. The next section will analyze in greater detail how these six countries have been implementing ICTs in their customs systems.

CUSTOMS PERFORMANCE IN THE REGION

Beyond clearance times (i.e., facilitation), predictability (i.e., process orientation) and transparency, the CATT measures the dimensions of strategic thinking, control, efficiency, and effectiveness. Since the CATT is evidence based, a proper implementation of ICT systems
is a core aspect to measure indicators and dimensions properly, as information coming out from ICT systems will show how customs operations perform. Nevertheless, proper implementation is not only about the existence of information systems but rather about the effective complementarity between the use of ICT systems and operational practices.

ICT systems are supposed to help customs offices enhance their management and development, as well as enhance their countries’ competitiveness, by improving three critical factors: clearance times, predictability, and transparency. The idea that ICT systems should help customs offices to perform more effectively and efficiently is widely shared\(^1\). For instance, ICT systems are crucial for systematizing customs operating procedures, and also for providing to stakeholders with more transparency concerning the enforcement of these procedures, by making customs decisions more predictable, avoiding in-person interactions. Information systems also support data analyses that allow customs to implement risk management systems to strengthen control and facilitate trade. Figure 3 shows how an ICT system can support customs operations.

Figure 3: ICT system basic structure and its expected outcome on competitiveness

Implementing ICT systems has become one of the few modernization aspects that seem to have a general consensus among practitioners. Nevertheless, as this note shows, modernization of customs offices goes beyond implementation of ICT systems. ICT systems become a powerful tool only when they are complemented effectively with good practices and a set of economic incentives (not necessarily monetary incentives)\(^1\).\(^1\)

\(^1\) Many international organizations including the World Bank, the Organization for Economic Cooperation and Development (OECD), the World Customs Organization (WCO), and the World Trade Organization (WTO), as well as regional development banks such as the Inter-American Development Bank (IDB), the Asian Development Bank (ADB), and the European Union (EU) have recommended the use of ICT systems to improve customs processes, facilitate trade and therefore enhance countries' competitiveness. See Lewis (2009).

\(^1\) There are some basic necessary conditions that have to be in place before, during and after implementation of any ICT system. First, a strong political will to implement ICT changes is crucial; second, it is necessary to identify a champion to lead the process, explain its benefits and deal with people opposed to the changes; third, customs staff needs to be made aware of the cultural change associated with going from a culture of physical records on paper to a culture of virtual records and electronic entries; fourth, the availability of financial resources to complete implementation of the ICT systems and to provide staff the necessary training to facilitate its use and maintenance, must be ensured; fifth, a legal reform has to accompany the implementation of ICT systems to provide support and sustainability to the changes; and sixth, the implementation of the ICT systems has to be part of a broader technology plan in which a clear vision is outlined for the different phases of its implementation and its role within the strategy plan of the institution is explained. The analysis of these conditions is beyond the scope of this technical note.
When we examined the level of integration and sophistication of ICT systems in Caribbean countries through the analysis of the results of selected CATT indicators, we found that, in the six countries assessed, only one of them does not have an integrated information system working. Most of these countries are using one of the three versions of the ASYCUDA (Automated System for Customs Data) developed by UNCTAD. Table 4 presents the main features of the core Customs information systems’ implementation in the selected Caribbean countries.

As table 4 shows, critical aspects for customs control and performance have not been implemented properly. The most illustrative case is the low percentage of cargo manifests that are submitted to the customs office electronically before the cargo arrives at the customs office even though most of the systems are capable of accepting cargo-manifests electronically. The lack of this good practice implies that it is hard to implement facilitation measures based on risk assessment. In addition, critical modules such as transit and warehouse (including the control of abandoned goods) have not been activated. This situation further weakens the ability of customs administrations to provide facilitation measures based on effective control mechanisms.

Why have the customs offices not activated such modules? A possible answer is the lack of a Standard Operating Procedures (SOP) Manual formally approved and disseminated, as well as other important measures and practices to ensure quality of services. SOPs constitute the backbone of any Customs office. Without SOPs there is the risk of improper use of ICT due to the fact that no “straitjacket” exists to make the activation of the overall modules mandatory. SOPs also make customs decisions more transparent and predictable. The CATT evaluations found that Caribbean customs offices follow international standard regulations on issues such as tariff classification, valuations, rapid release guidelines, etc.; however, none of them were applied properly. Therefore, in some cases, the issue is not the procedure, which may already exist, but its implementation and enforcement. In order to tackle this issue, economic and legal incentives have to be in place to make customs officers fully accountable. Some examples of incentives include strengthening links between work-oriented training and career development; introducing monetary and non-monetary incentives; systematic and transparent rotation policies; HR systems with complete performance records, and regulations that allow customs management to take disciplinary actions.

Table 4: CATT Results on ICT indicators

<table>
<thead>
<tr>
<th>CATT Indicators</th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA (%)</th>
<th>Overall Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Border Offices with Communication services 24x7</td>
<td>0</td>
<td>92.3</td>
<td>100</td>
<td>92</td>
<td>42.86</td>
<td>100</td>
<td>90.11</td>
<td>100</td>
</tr>
<tr>
<td>Level of integration of core customs IT systems</td>
<td>Total</td>
<td>Mostly integrated</td>
<td>Total</td>
<td>Partial</td>
<td>None</td>
<td>Mostly integrated</td>
<td>Mostly integrated</td>
<td>Total</td>
</tr>
<tr>
<td>Transmit and receive data electronically using EDI</td>
<td>None</td>
<td>None</td>
<td>Manifest + declarations</td>
<td>All</td>
<td>None</td>
<td>All</td>
<td>75%</td>
<td>All</td>
</tr>
<tr>
<td>Access to institutional email, intranet and internet (% staff)</td>
<td>47.18</td>
<td>100</td>
<td>100</td>
<td>17</td>
<td>0</td>
<td>11.73</td>
<td>93.76</td>
<td>100</td>
</tr>
<tr>
<td>% Administrative processes controlled by any software</td>
<td>25</td>
<td>NA</td>
<td>37.5</td>
<td>54.54</td>
<td>11</td>
<td>37.5</td>
<td>52.86</td>
<td>100</td>
</tr>
<tr>
<td>CATT indicators</td>
<td>Country 1</td>
<td>Country 2</td>
<td>Country 3</td>
<td>Country 4</td>
<td>Country 5</td>
<td>Country 6</td>
<td>LA</td>
<td>Good Practice</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------</td>
<td>---------------</td>
</tr>
<tr>
<td>% of cargo manifests presented to the Customs office in electronic format</td>
<td>100</td>
<td>NA</td>
<td>100</td>
<td>100</td>
<td>0</td>
<td>3.14</td>
<td>86.39</td>
<td>100</td>
</tr>
<tr>
<td>% of cargo manifests submitted to the customs office electronically in advance</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>18.03</td>
<td>0</td>
<td>0.44</td>
<td>67.22</td>
<td>100</td>
</tr>
<tr>
<td>Operates a computerized systems for transit control</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>25% Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Customs office can generate reports of all transport documents considered abandoned</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>25% Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Average days goods considered abandoned remain in that state before being disposed of</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.27</td>
<td>NA</td>
<td>NA</td>
<td>229.3</td>
<td>1</td>
</tr>
<tr>
<td>Uses selectivity based on automated compliance measurement and risk-assessment and profiling systems</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>50% Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>% of economic operators with risk profiles defined</td>
<td>NA</td>
<td>3.4</td>
<td>NA</td>
<td>2.1</td>
<td>NA</td>
<td>NA</td>
<td>52.71</td>
<td>100</td>
</tr>
<tr>
<td>% of economic operators with HIGH risk profiles</td>
<td>NA</td>
<td>3.4</td>
<td>NA</td>
<td>0.074</td>
<td>NA</td>
<td>NA</td>
<td>10.04</td>
<td>Closest to 0</td>
</tr>
</tbody>
</table>

*Source: CATT*

**With respect to control mechanisms, the effect of ICT systems has been also limited.** The CATT evaluations show that only three of the six countries have a database containing information of all customs declarations for the purpose of risk assessment. However, none of them systematically conduct risk assessment analysis, and none use modern customs control practices for selectivity control and risk assessment based on risk profiling.
Despite a tendency to inspect a high percentage of all declarations, the rate of detection of improperly declared goods in the inspections is very low (less than 1% for two countries and 12% for the outperformer country, which is still a low rate). This is clearly a signal that the inspections are not well targeted, and are, in fact, the most visible outcome the high discretionary power of customs officers. Such a high rate of inspections leads to high transition costs for the trading community. This is likely the response to a widely accepted overtime practice that sets out a distorting incentive structure.

Customs overtime payments are applied all across the Caribbean. These compensations are paid by Customs brokers on behalf of importers/exporters to a customs officer who performs physical examinations at the importer/exporter’s premises. Brokers will request the service by 3:00 pm and once the working hours are finished at 4:30 pm, the assigned inspector will carry out the inspection in the importer’s premises. Transport costs are covered and overtime compensation is based on an hourly rate. As the paper work is completed, the overall compensation amount is deposited in a specific customs account. By end of the month the overtime compensation is paid (by a private party) in conjunction with the due salary (paid by the Government) after corresponding taxes are subtracted. These additional compensations are very attractive, and are pursued by Customs officers to top up their salaries and considered part of the aggregate income of customs officers for all financial transactions including mortgage applications.

Tensions between customs officials and the trading community can arise because of the lack of an effective feedback mechanism.\(^\text{17}\). Table 5 summarizes the situation of good practices that should complement ICT systems in these countries:

**Table 5: CATT results on Indicators of Good Practices**

<table>
<thead>
<tr>
<th>CATT indicators</th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedures Manual</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Applies the WCO Harmonized System Convention</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Applies the WTO Valuation Agreement</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Implements a Single Administrative Document (SAD)</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>Applies the WCO Immediate Release Guidelines</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>50%</td>
<td>100%</td>
</tr>
<tr>
<td>Defines special procedures for express cargo (Courier)</td>
<td>NA</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

\(^{16}\) Also in some cases overtime payments are used by the Port Authority as well.

\(^{17}\) This is also extensive to the internal feedback mechanism.
<table>
<thead>
<tr>
<th>Effective Feedback Mechanisms</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanisms to capture process feedback from internal users</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>75% 100%</td>
</tr>
<tr>
<td>Mechanisms to capture process feedback from external users</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>75% 100%</td>
</tr>
<tr>
<td>Conducts customer satisfaction surveys for external trade operators</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>75% 100%</td>
</tr>
<tr>
<td>Conducts employee satisfaction surveys regularly</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>100% 100%</td>
</tr>
<tr>
<td>Procedures available on the Customs web page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CATT indicators</td>
<td>Country 1</td>
<td>Country 2</td>
<td>Country 3</td>
<td>Country 4</td>
<td>Country 5</td>
<td>Country 6</td>
<td>LA</td>
</tr>
<tr>
<td>% of core customs procedures and legislation available on the Web page</td>
<td>0</td>
<td>15</td>
<td>33.34</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>99</td>
</tr>
<tr>
<td>Makes tariffs and duties available on the web page</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>100% 100%</td>
</tr>
<tr>
<td>Customs has an on-line support system for external trade operators</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>50% 100%</td>
</tr>
<tr>
<td>Customs has an on-line statistics and reporting system for external users</td>
<td>0%</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>50% 100%</td>
</tr>
<tr>
<td>Complaints Office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existence of a complaints office within the customs office</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>50% 100%</td>
</tr>
<tr>
<td>Complaints lodged per month by external operators per thousand employees</td>
<td>Country 1</td>
<td>Country 2</td>
<td>Country 3</td>
<td>Country 4</td>
<td>Country 5</td>
<td>Country 6</td>
<td>LA</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.8</td>
<td>NA</td>
<td>2.33</td>
<td>14.72</td>
<td>14.72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appeal Mechanisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of judicial processes that were resolved in favor of Customs (one year)</td>
</tr>
</tbody>
</table>

| Average time to resolve legal process (months) | NA | 5 | NA | 24.6 | 1 | 1.08 | 51.80 | 6 |

| % of administrative processes that were resolved in favor of the Customs | NA | 11.03 | NA | 0 | 70.58 | 98.61 | 66.17 | 70 |

| Average time to resolve an administrative appeal (days) | NA | NA | NA | NA | 68.94 | 39 | 184.6 | 15 |

Source: CATT.

Finally, a critical aspect is that customs in the region cannot envision better scenarios in the future to ensure continual improvements. The CATT data evidenced that ICT systems have been implemented only for revenue purposes, as tax and duties collection is the only strategic goal that government authorities pursue with respect to customs. Most countries lack a strategic plan, a long term technology plan or a modernization plan, and only half of them identify quantifiable performance measures. Optimizing performance, therefore, has not been a central priority. Table 6 shows the main results regarding strategic thinking:

**Table 6: CATT results on Strategic Thinking indicators**

<table>
<thead>
<tr>
<th>CATT indicators</th>
<th>Country 1</th>
<th>Country 2</th>
<th>Country 3</th>
<th>Country 4</th>
<th>Country 5</th>
<th>Country 6</th>
<th>LA</th>
<th>Good Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs office applies Balanced Scorecard or equivalent methodology</td>
<td>NA</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>75%</td>
<td>100%</td>
</tr>
<tr>
<td>Customs office has a documented and approved strategic plan for at least 5 years</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>Strategic plan identifies quantifiable performance measure for targets</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>75%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Customs has a documented long term technology plan | 0% | 0% | 0% | 0% | 0% | 0% | 25% | 100%

Customs has a reform and/or modernization program | 100% | 0% | 0% | 0% | 0% | 0% | 75% | 100%

% of workforce trained in their areas of responsibility | NA | 38.5 | 82.1 | 31.96 | 0 | 56.8 | 53.7 | 100%

Source: CATT

The CATT allows us to graph the overall performance of these six Caribbean countries compared to a group of selected Latin American countries\(^\text{18}\). As Figure 4 shows, the Caribbean countries are underperforming in both of the dimensions (performance and practice) into which all of the indicators are grouped. None of the Caribbean customs reaches the “contender” category (50% of good practices). Figure 4 summarizes our previous analysis of Customs performance in these countries.

**Figure 4: CATT results comparisons between Caribbean and Latin-American countries**

![CATT Results Comparison](chart)

Source: CATT

\(^{18}\) Countries were selected to be a representative sample for Latin America regarding the size of the country (i.e. big, middle, and small).
LESSONS LEARNED

This report has presented evidence on a number of aspects related to the Caribbean countries’ customs systems. This section systematizes the note’s key messages:

The Caribbean economies are highly open, but their customs systems are not up to the challenge. Almost all Caribbean countries, and especially the ESC countries, rely heavily on trade and foreign direct investments for the functioning of their economies. However, one of the key channels through which both of these occur, the customs offices, performs poorly in terms of clearance times, predictability and transparency. The CATT data shows that elapsed times are long, processes are not consistently followed and required information is not easily accessible to the traders.

This inconsistency affects the competitiveness and development of these countries. There is a large body of evidence that shows how these factors impact a country’s competitiveness. Long clearance times impose costs on trade and discourage foreign investment. Inconsistent procedures require the maintenance of large “safety stocks”, something that may not be possible for new entrepreneurs or for smaller companies. Lack of transparency, in addition to acting as a hidden tax, unfairly discriminates against those who play by the rules. The combination of all these factors increases transaction costs and greatly affects the performance of the economy, especially in countries (like those of the Caribbean) where trade plays such a critical role. Due to the large share of imported goods in local consumption, consumers’ purchasing power is also affected by these extra costs. Higher prices disproportionally affect lower income households that destine a larger share of their income to the purchase of goods.

Customs offices may be performing additional functions, which, in a context of scarce resources, can distract them from performing their core functions. In some of these countries, customs are working to facilitate the inflow of foreign investments by, for example, implementing tax and duty exemptions for investors. In a globalized context in which not only trade but also production is global (Kremer and Maskin, 2006), this is an important role, especially in the Caribbean countries, since they rely on foreign investments to develop the tourism industry. However, resources used for this task are diverted from the customs core function of controlling the flow of goods in a timely and appropriate manner. This can partly explain their low performance in the areas previously discussed.

The main strategic function that customs offices appear to be doing well was that of collecting tax and duties, while important functions such as policy advisor, trade facilitator and security provider appear to be neglected. Although the role of Customs as revenue collectors contributes to fiscal stability, focusing solely on revenue collection has distorted other core Customs functions (Shujie and Shili, 2010). Customs offices in the region cannot effectively fulfill their role as policy advisors, since they cannot support policy decisions by providing accurate and on-time trade statistics; as policy implementers, they lack standard operating procedures to make their decisions predictable; as trade facilitators, they lack effective facilitation measures; and as security providers, they lack risk management systems based on electronic submission of cargo information in advance and risk profiling of authorized operators.

In this sense, poor customs performance can act as an entry barrier to new competitors, reinforcing the region’s lack of economic diversification and dependence on a few industries.
The main strategic function of trade facilitator is affected by the practice of overtime. Since this practice creates an incentive structure that links physical inspections with salaries top-ups, customs managers might find it difficult to break the indicated link and implement effective trade facilitation measures. An effective solution may be beyond the customs sphere due to the salary implications of such a solution, especially in a tight fiscal situation, which these days is common in the Caribbean. Nevertheless, countries need to think about ways to address the issues created by this practice. Promoting a broad policy dialogue about it might be a good starting point.

Modernization efforts are should not be limited exclusively to ICT implementation. Most of the Caribbean countries have been implementing ICT systems, or are in the process of upgrading previous versions or seeking new integrated solutions. However, the CATT data show that, to develop a world-class customs office, government authorities need to pay attention to the adoption of good practices in several key dimensions that complement the use of ICT systems. ICT adoption is a requisite for a modern customs, but these systems need to be supplemented by improvements in other aspects too. In particular, the absence of strategic thinking (in the form of plans, modernization programs or even quantifiable indicators of performance) hurts their ability to make most of the technological tools being adopted.

CONCLUSIONS

Caribbean countries can apply a number of the lessons provided in this study to improve the performance of their customs systems in all their core roles (policy advisor, policy implementer, trade facilitator and security provider). Implementing these changes, which are all feasible and realistic, would boost the competitiveness of the Caribbean economies and solve many of the problems detected in this report. These recommendations can be divided into two groups: (a) policy changes and (b) institutional reforms.
The main policy changes that these countries could adopt include:

- **Reduce the dependence on tariffs for the government’s total revenue.** The high reliance of Caribbean countries on trade taxes reinforces the idea that customs offices are just revenue-collection agencies. Thus, their officials have incentives to concentrate on raising revenue, instead of focusing on their key role in trade facilitation. A reduction in tariffs (compensated for example by greater emphasis on internal consumption taxes) would also reduce the incentives to smuggle goods or to bribe customs officials. This increase in transparency would lower the transaction costs involved in trade, benefiting the Caribbean producers and consumers.

- **Clarify the role of the customs offices.** Customs offices in the Caribbean usually deal with issues that should be the responsibility of the tax collecting agency. For example, they have to implement the numerous tax exemptions designed to attract foreign investment. But these added responsibilities divert resources from their core functions and hurting their performance. Relocating these tax enforcement responsibilities to the appropriate government agencies would allow the customs offices to focus on their essential mission.

- **Promote regional agreements to consolidate customs processes.** The Caribbean is composed of multiple islands, most of them with small populations. Establishing a common entry port (a hub) and controlling the transits to the different islands would contribute to trade efficiency, reduce costs and decrease clearance times. Although this cannot be an immediate goal, advancing with regional agreements to consolidate and streamline trade processes would be a positive first step in this direction.

- **Establish alliances with the private sector.** Private companies should be key partners in the smooth and predictable operation of customs procedures. Their collaboration is needed to warn of problems that need to be solved, and they have a strong interest in seeing a reduction in the high transaction costs associated with customs systems. It is important to build mutual trust and cooperation in this relationship. Working together, clearance times, predictability, transparency and therefore competitiveness can likely be improved.

In addition to these policy changes, we can identify a number of institutional reforms that would contribute to enhance the performance of these customs systems in all their core roles:

- **Above all customs offices in the Caribbean region could prioritize the completion, implementation and dissemination of SOPs.** Without SOPs it is hard to conceive these public offices either as modern or traditional. Within the public sector no entity needs to operate through the definition and implementation of basic rules of the game as much as customs offices must. Trade transitions are complex and in some cases they imply risks for national security, sanitary status, revenue, health and other related aspects. This is why they need to be regulated. At the same time, the regulatory system should be simple and transparent to improve the flow of trade.

- **Promote continual improvements by strengthening strategic thinking.** Performance cannot be improved in a sustainable way if customs authorities focus only on day-to-day operations. CATT indicators show that the Caribbean customs are lagging behind in terms of defining strategic goals for their agencies beyond revenue collection. Setting strategic objectives and defining the best ways to achieve them are critical for consolidating a culture of permanent improvement and reform.
Moreover, establishing measurable indicators for these goals would create incentives to meet adequate standards of timely and predictable processes. One critical aspect limiting strategic thinking is the lack of training on core technical themes such as classification, valuation, procedures, and rules of origin. The CATT shows that most of the Customs officers were not trained on those themes in the last 10-15 years.

- **Ensure that ICT information is available to the decision-makers.** To serve as a proper policy advisor, customs need to be able to provide timely and accurate data to policymakers. The current situation, in which only the IT staff is able to access these data, limits the use of customs data in the decision-making process, and in achieving accountability and transparency. Moreover, ensuring broader access to this information would foster a more evidence-based approach to policymaking and would allow the implementation of better and more accurate customs controls.

- **Establish the procedures and the incentives to fully appropriate the potential of ICT systems.** ICT systems can support the customs offices in their role as policy implementers only if complemented by other measures. Among them we have mentioned: (i) ensure that ICT systems are part of a bigger strategy by conceptualizing ICT systems as a useful tool to support customs modernization rather than as the final goal; (ii) completion and dissemination of SOPs; (ii) ongoing training to address the cultural change and to avoid natural reluctance to use the new systems; (iii) legal reforms to accompany, simplify, and validate new processes and procedures introduced by ICT systems; (iv) procure resources to complete the implementation of systems, provide maintenance and monitor future developments; and (v) promote an organizational culture based on permanent feedback.

- **Introduce productivity incentives to promote better performance.** The CATT can serve as a useful tool to collect objective evidence about how different sections within a customs office are performing. With these data, and with the establishment of clear goals, it should be possible to set up incentives that foster the achievement of measurable results. For example, making training courses more relevant to work activities, measuring the knowledge internalized by staff on those courses and linking training with promotions could provide the right incentives to promote the use of ICT systems. Sections that meet established standards in terms of predictability or clearance times should be rewarded accordingly. To provide the flexibility needed to achieve these goals, granting greater autonomy to the customs offices should also be considered. Along with greater autonomy, customs offices could be better positioned to overcome sensitive issues such as the practice of overtime.
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4 CUSTOMIZED ICT SOLUTIONS FOR CARIBBEAN GROWTH
CUSTOMIZED ICT SOLUTIONS FOR CARIBBEAN GROWTH

Doyle Gallegos, Pau Puig Gabarro*
ABSTRACT

Information and Communications Technologies (ICTs) are important to a number of sectors, as well as for economic growth and employment. In the last 10 years, high-speed communication networks and the innovative applications they carry have enabled a fundamental restructuring and innovation of the Caribbean economy. This note looks at the level of ICT development of countries in the region, and argues that the diversity of the Caribbean region is reflected in the great diversity in degree of ICT development across countries, and that customized approaches to reduce intra-regional disparities in ICT sector development are needed. Renewed partnerships between the private and public sectors can catalyze the necessary investment and innovation. Governments will play a role in creating the right enabling environment, policies, strategies and objectives, and, in the most challenging cases, they may need to lead.

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INTRODUCTION

Information and Communication Technologies (ICTs) can be key enablers across many sectors and services (e.g. water, energy, education, health) as well as drivers of economic growth and employment. They enhance the effectiveness, efficiency, and transparency of other sectors; and offer new tools to reduce poverty. A growing body of evidence emphasizes the economic impact of investments in telecommunications and, more specifically, broadband services.\(^\text{20}\) Even more important for the overall economy have been the strong long-run effects of ICT applications on productive activities in other sectors. In the last 10 years, high-speed communication networks and the innovative applications they carry have enabled a fundamental restructuring and innovation of the Caribbean economy. For example, governments are becoming more efficient and transparent by offering information and services online (Qiang & Wellenius, 2010).

This note looks at the level of ICT development of countries in the region, as determined by key ICT indicators such as Access, Use and Skills Indices, as well as cellular and broadband penetration rates. The note then argues that the diversity of the Caribbean region is reflected in the great diversity in degree of ICT development across countries, and that customized approaches to reduce intra-regional disparities in ICT sector development are needed. A \textit{customized approach}, encompassing an appropriate national broadband strategy, policy and regulatory actions, and implementation plan, should be developed according to each country’s level of ICT development, specific challenges, and sector development goals and objectives.

\(^{20}\) A recent study encompassing several developing countries showed that a 10 percent increase in the number of telephones per 100 inhabitants was associated with an increase of 0.6 percentage points in annual GDP growth, and that a 10 percentage-point increase in broadband penetration was associated with 1.4 percentage points of additional annual GDP growth (Qiang & Rossotto, 2009).
A VERY DIVERSE REGION

The CARIFORUM region is one of the most diverse in the world in terms of economic performance and demography. While economic growth for the region averaged about 2.7% a year over the last decade (2002-11), outliers include countries such as Bahamas, Barbados and Haiti with less than one percent annual growth rate, and the Dominican Republic, Trinidad and Tobago, and Suriname with about 5.5% annual growth. The size of the economy also varies widely. In 2011, GDP totaled US$55 billion in Dominican Republic, compared to US$0.48 billion in Dominica, with four countries accounting for about 80% of the regional GDP, and the remaining eleven countries accounting for only 20%. Annual per capita income ranges from a high of US$21,970 in the Bahamas to US$700 in Haiti. Disparity among the CARIFORUM countries is also reflected in the population distribution, with two countries (Dominican Republic and Haiti) accounting for approximately 75% of the population (20 million people).

ICT DEVELOPMENT IN THE CARIBBEAN

This diversity is also very much apparent in the different degree of ICT development across CARIFORUM countries, as can be seen by a comparison of key ICT indicators as described below. This diversity implies the need for customized approaches to reduce intra-regional disparities in ICT sector development.

The ICT Development Index (IDI) provides a useful snapshot of the level of ICT development across the region. The IDI is a composite index developed by the International Telecommunications Union (ITU) combining 11 indicators into a benchmark index, and three sub-indices (See Box 1).

Box 1: ICT Development Index

The 11 indicators that compose the IDI can be grouped into an Access Index, a Use Index, and a Skills Index. The Access Index captures ICT readiness, and includes five infrastructure and access indicators (fixed telephony, mobile telephony, international Internet bandwidth, households with computers, and households with Internet). Together, these indicators measure the basic level of access and infrastructure development within the country. The Skills Index captures the set of ICT capacity and skills that are considered indispensable inputs for ICT uptake, and includes three proxy indicators (adult literacy, gross secondary enrollment, and gross tertiary enrollment). Together, these indicators reflect the country’s human capacity and ability to absorb and take advantage of ICT. The Use Index captures ICT intensity, and includes three ICT and usage indicators (Internet users, fixed broadband, and mobile broadband). Together, these indicators reflect ICT uptake and use, as well as intensity of use.

21 CARIFORUM comprises the 15 Caribbean countries of CARICOM (i.e., Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago) and the Dominican Republic. However, figures throughout this paper do not include Montserrat since it is a British overseas territory.
22 Regional GDP grew only by 2.64 percent in 2008 as a result of the global financial crisis, contracting by 2.6 percent and by 0.26 percent in 2009 and 2010, respectively.
23 Dominican Republic, Trinidad and Tobago, Jamaica and the Bahamas account for 45 percent, 18 percent, 12.5 percent and 6.5 percent, respectively, of regional GDP.
Table 1 presents all four indices of the IDI for selected Caribbean countries. **Across all indices, the same countries are top performers:** Antigua and Barbuda, Saint Vincent and the Grenadines, Trinidad and Tobago, and St Lucia. The one exception is the ranking of the Skills Index where Jamaica is more highly ranked than in its other indices. This clustering of the same countries across all indices is all the more interesting considering that the top positions are dominated by the smaller island countries (less than 200k in population) and in particular those with higher population densities (more than 200 people per square kilometer).

**Table 1: ICT Development Index 2011**

<table>
<thead>
<tr>
<th>Country</th>
<th>IDI Index</th>
<th>Access Index</th>
<th>Use Index</th>
<th>Skills Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antigua and Barbuda</td>
<td>5.75</td>
<td>6.99</td>
<td>3.76</td>
<td>7.17</td>
</tr>
<tr>
<td>Saint Vincent and the Grenadines</td>
<td>4.74</td>
<td>6.09</td>
<td>2.15</td>
<td>7.23</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>4.57</td>
<td>5.59</td>
<td>2.52</td>
<td>6.67</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>4.49</td>
<td>5.72</td>
<td>2.07</td>
<td>6.87</td>
</tr>
<tr>
<td>Suriname*</td>
<td>3.52</td>
<td>4.54</td>
<td>1.22</td>
<td>6.08</td>
</tr>
<tr>
<td>Jamaica</td>
<td>3.49</td>
<td>3.96</td>
<td>1.31</td>
<td>6.93</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>3.34</td>
<td>3.37</td>
<td>1.66</td>
<td>6.62</td>
</tr>
</tbody>
</table>

Data not available for the Bahamas, Belize, Dominica, Grenada, Haiti, Guyana, and St. Kitts and Nevis. Data for Suriname is 2010

Source: Measuring the Information Society 2012, ITU

It is therefore not surprising to see that the same cluster of high ranked countries also performs particularly well in the level of mobile subscription penetration, with a penetration level (measured as a percentage of inhabitants) of greater than 120% as demonstrated in Figure 1. Suriname, Dominica, and St. Kitts and Nevis show a similarly high level of mobile penetration. The advantage conferred by such high levels of penetration should be weighed against the fact that prices of mobile services remain relatively high and that people often own multiple phones from different service providers in order to take advantage of specific rates and offers, thus “inflating” the number of actual mobile users.

**Figure 1 - Mobile-cellular Subscriptions per 100 Inhabitants in 2010(*), 2011**

Source: DataBank, World Bank, 2013
Notwithstanding the high prices and the “inflated” penetration rates mentioned above, the region has developed its mobile services platform and coverage footprint very well. This development has been driven primarily by pro-competition policies and regulatory practices (e.g. licensing and spectrum management). This bodes particularly well for the region as mobile platforms that place a phone or smart device in almost every citizen’s hand are fast becoming the single largest delivery system of services (e.g. banking, health, education, m-government, etc.) as well as a preferred mode for citizen engagement, with particular benefits for the poor and disabled.

However, if the region is going to be effective in accelerating growth and competitiveness, it must take a further step forward, and focus on enabling the use of broadband services across every income level and part of the country. Herein lays the major challenge for the region, since broadband markets in the region are very much underdeveloped. Figure 2 presents the penetration level of fixed broadband services in selected Caribbean countries. Two clusters and one outlier are visible. Specifically, half the countries are below the 7% mark while the other half are above (12-14%), with St. Kitts Nevis surpassing all others by far (28%). According to the ITU, the average penetration levels for the World, Developed, and Developing countries in 2011 were 8.5%, 25%, and 4.9%, respectively.

The hope and expectation of many policy makers is that much of this lag and digital divide can be quickly overcome with new broadband wireless technologies (both, fixed – WIFI, and mobile – 3G and 4G). As demonstrated in Figure 3, the region still has a long way to go as far as mobile broadband coverage is concerned, with only Belize and Jamaica showing levels of penetration greater than 17%, the Dominican Republic and Bahamas at 6%, and all others at less than 1%. According to the ITU, the average penetration levels for the World, Developed, and Developing countries in 2011 were 15.7%, 51.3%, and 8%, respectively.
Globally, low broadband penetration rates are caused by a number of factors, including lack of infrastructure, weak or minimal competition, and high level of prices for services and devices. In the Caribbean region, low penetration is also due to these factors but more specifically because the liberalization agenda remains to be fully implemented. Monopolies or partially competitive ICT sub-sectors continue to exist in countries such as Antigua and Barbuda, Bahamas, and Trinidad and Tobago (World Bank ‘ICT-at a glance’ database, 2010).

While the region is served by several fiber optic submarine cables and in many places overcapacity exists, there is no effective competition in the provision of international services. In most countries, the former monopoly providers still retain effective control of international facilities and many of the cables are not subject to open access regulatory regimes. Similar challenges exist at the national transmission level where there are few competitors. As a result, prices are relatively high, and access is limited, resulting in slow growth of broadband services and uptake.

Such important gaps in ICT infrastructure, as well as high prices in the region, hamper the region’s ability compete in the global economy. The lack of affordable and reliable ICT infrastructure and services limits the ability of the countries of the Caribbean to improve their competitiveness, productivity and diversify their economies through knowledge- and information-based services.

CUSTOMIZED APPROACH TO ICT DEVELOPMENT

Given the large disparity in ICT development across Caribbean countries, there is no single solution, or “cookie cutter approach” to address the region’s weaknesses and threats. Rather, a customized approach, encompassing an appropriate national broadband strategy, policy and regulatory actions, and implementation plan should be developed for each country according to its level of ICT development, specific challenges, and sector development goals and objectives.

In some countries, an emphasis on updating the legal, policy and regulatory environment (e.g. implementation of pro-competition policies and regulations) may be all that is needed. In others the emphasis may need to be on greater access (i.e. supply) at lower costs and higher quality, on stimulating demand (e.g. e-government services, ICT skills training and applications and content development), or a combination of all the above.

However, a customized approach does not preclude the need to consider the regional context or to integrate individual country approaches into a regional strategy. On the contrary, the potential spillover effects of ICT make it a critical sector for stimulating growth, competitiveness, and diversification throughout the region. Another argument in favor of a regional strategy is that fact that the region’s prosperity depends on how well it is integrated into the global economy. ICTs, particularly high-speed Internet, are playing an increasingly central role in this integration, by enhancing trade, facilitating cross-border payments, and increasing investment – all key components of economic growth/diversification and poverty reduction. ICT investments in one country can generate positive externalities for other countries and for the region as a whole. Further coordination of national strategies, policies and initiatives can only strengthen outcomes.
Over the past ten years, policy makers have focused on introducing competition, transforming incumbent operators, revamping policy and regulatory frameworks, building regulatory capacity, and – when required – making catalytic investments in infrastructure in the form of Public Private Partnerships (PPPs). Development of the sector has required not only that countries accelerate their efforts to address the fundamentals (i.e. supply) but also that they begin initiatives to address uptake and use of ICTs for jobs growth, business development and innovation (see Box 2).

Box 2 The Caribbean Regional Communications Infrastructure Program (CARCIP)

CARCIP, a program developed by the World Bank provides targeted tools to help Caribbean countries benefit from the developmental and transformational potential of ICT. First, CARCIP provides financing and technical assistance for the CARIFORUM region to bridge the remaining gaps in regional and domestic broadband communications infrastructure, including submarine cable infrastructure and landing stations, domestic backbone networks and cross-border links and national and regional internet exchange points (IXPs). Second, CARCIP aims at creating an enabling environment that leverages this regional and domestic infrastructure to foster employment and economic growth. This includes support for the development of policies and regulatory frameworks to further increase market competition, as well as for developing innovative regional IT and IT Enabled Services (ITES) industries, and applications by the private sector and, e-government and m-government services. Specific skill development programs target women and youth to improve employability and bridge the gender gap in access to, and use of ICT. Finally, CARCIP encourages institutional development and capacity building to enhance the effectiveness of the regional institutional ICT framework.

The program ultimately seeks to use communication infrastructure policies to contribute to the higher strategic objectives of regional and global integration, green growth and the competitiveness of the Caribbean region. CARCIP is expected to contribute to the CARIFORUM regional integration by fostering economic growth, generating employment, supporting poverty reduction plans, enabling rural integration, and enhancing the regional and domestic competitiveness of each of the member countries.

CARCIP Phase 1 was approved by the WB Board on May 22, 2012 with Grenada ($10m IDA), St. Lucia ($6m IDA) and St. Vincent and the Grenadines ($6m IDA) as participating countries. The CARCIP program is also supported by three regional institutions (via a US$ 3 million regional grant), including the Caribbean Telecommunications Union (CTU), the Caribbean Knowledge and Learning Network (CKLN) and the Eastern Caribbean Telecommunications Authority (ECTEL).
The Caribbean has significant opportunities to benefit from regional efforts to use information and communications technologies (ICTs) to facilitate and jumpstart policies and initiatives across all sectors and services. Yet, while the region has seen an overall expansion of mobile cellular use, variations in the prevalence and use of ICTs across countries remain. These variations are due to differences in income levels, location, and human capital. Addressing the disparities in ICT sector development across countries in the Caribbean will more effectively support the expansion of ICTs in the region.

Policy makers can make more effective use of ICTs to accelerate and solidify their economic and job growth objectives across all sectors and services. But in order to benefit from all that ICTs can offer, they must first assess their own ICT policies, strategies and objectives. While the mobile services segment has advanced significantly, bottlenecks and challenges exist in the supply and demand of high-quality low-cost broadband services.

There is no single best practice or solution, but policymakers can use available examples to guide them in designing policies and strategies that address specific market dynamics and thus reach the goals and objectives of all stakeholders. Taking into consideration the specific development level of the sector and government’s goals and objectives, customized solutions must be designed and implemented. Renewed partnerships between the private and public sectors can catalyze the necessary investment and innovation. Governments will play a role in creating the right enabling environment, policies, strategies and objectives, and, in the most challenging cases, they may need to lead.
REFERENCES


5 RESILIENT COASTAL CITIES: THE ECONOMIC, SOCIAL AND ENVIRONMENTAL DIMENSIONS OF RISK
ABSTRACT

The Caribbean countries, and particularly its cities, are extremely vulnerable to severe weather events, and this situation will worsen with climate change. Weather-related disasters have increasingly important economic and social effects. This policy note calls for cities in the region to become more resilient, and presents some of the salient features of a resilient city. It discusses some of the actions that countries have taken to mitigate their contributions to such disasters, and to adapt. It argues that a resilient city is run by an inclusive, competent and accountable local government that is concerned about sustainable urbanization and that commits the necessary resources to develop capacities to manage and organize itself before, during and after a natural hazard event. It concludes that, although recent improvements in disaster risk management in the Eastern Caribbean are encouraging, these countries still lack the required capacity to assess the full financial implications of the disasters to which they are likely to be exposed.

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INTRODUCTION

Any long-run and sustainable growth strategy for the Caribbean cannot afford to neglect the region’s vulnerability and the economic, social and environmental dimensions of risk. The frequency and severity of extreme weather events will continue to be exacerbated by climate change. Coastal cities, where most of the world’s population lives, are particularly at risk. Since the Caribbean is among the world’s most exposed regions, its coastal cities are constantly confronted by risk and disasters. Such risks have not only an environmental dimension, but through the way environmental disasters disrupt economic activity and through the propensity of lower-income people to locate in risk-prone areas, the social and economic dimensions of risk are particularly important; so much so, that GDP losses are as large as 9% annually in some countries (e.g. Grenada) and social consequences can be devastating (e.g. Haiti). This policy note calls for cities in the region to become more resilient, and presents some of the salient features of a resilient city. It also gives some concrete examples of how some countries have implemented risk mitigation actions, as well as how some others have also taken steps to adapt to climate change. The note argues that an integrated approach to resiliency is required and that it is only possible in as much as community-level actors are involved and engaged.

COASTAL CITIES ARE AT RISK

Natural geographic advantages have historically attracted human settlements to rivers and coasts. Almost one-quarter of the world’s population lives within 100 km of the coast and less than 100 m above sea level (Small and Nicholls, 2003). The Intergovernmental Panel on Climate Change (IPCC) argues that 60% of the world’s largest metro-regions (with over 5 million people) are located within 100 km of the coast, including 12 of the world’s 16 cities with populations greater than 10 million. The attraction to the coast is so strong that people are willing to give up living space to be near the coast. As a result, population densities in coastal regions are about three times higher than the global average.
However, these cities are particularly at risk of natural hazards. It has been argued that around 360 million urban residents live in coastal areas that are particularly exposed, as they are 10 meters or less above the sea level (Moser and Satterthwaite 2008). This number is growing rapidly. Lall and Deichmann (2009) have estimated that given demographic dynamics, population exposed to cyclones will more than double by 2050 to nearly 700 million people.  

Such an increase in exposure to risk can partly be explained by the rapid urbanization of coastal cities that accelerated dramatically during the 20th century and can arguably be associated with:

I) **Saltwater intrusion into surface and ground waters**, which has been exacerbated due to both the enlargement of natural coastal inlets and the dredging of waterways for navigation, port facilities, and pipelines;  
II) **Increasing shoreline retreat and risk of flooding** of coastal cities due to the degradation of coastal ecosystems by human activity, as has been documented in the cases of Thailand (Durongdej, 2001; Saito, 2001), India (Mohanti, 2000), Vietnam (Thanh et al., 2004) and the United States (Scavia et al., 2002).

**FACTORING IN CLIMATE CHANGE**

Coastal cities need to quickly prepare for climate change consequences, which further increase their vulnerability to extreme weather events. Over the next 100 years, sea levels will rise by up to 59 centimeters (IPCC, 2007). Peak sea levels, which are most relevant for coastal planning—as they characterize storm surges—may be rising even faster. These estimates are relevant because sea level rise will result in significant land erosion. For example, a low-IPCC scenario such as a 1 ft (30 cm) sea-level rise in the US would erode up to 30 meters of shoreline in New Jersey and up to 120 meters in California (OECD, 2008; Ruth and Rong, 2006). With such sea-level increases and land erosion, flood protection systems could come under strain. Furthermore, the number of natural disasters that have been reported worldwide has increased dramatically from only a few dozen at the beginning of the 20th century to hundreds of them, particularly after the 1980s (Figure 1). Coastal cities are now increasingly vulnerable to sea level rise and have already experienced more severe and frequent windstorms. The case of New Orleans is an important early warning of what would be needed to protect population and assets at risk in coastal areas. In Europe, 70% of the largest cities have areas that are particularly vulnerable to rising sea levels. Moreover, most of these cities can be found in areas that are less than 10 meters above the sea level. Based on the estimates of McGranahan, Balk and Anderson (2007), using average annual population growth in vulnerable areas, China alone already has more than 93 million people living in low-elevation areas. If such estimates prove correct, as many as 280 million people will be living in vulnerable areas by 2050. That is larger than the entire US population in 2000 or around seven times the entire Caribbean region.

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25 Lall and Deichmann (2009) also warn of an increase in population at risk of an earthquake: from 370 million people in 2000 to 870 million in 2050.
There are definite costs for the environment when extreme weather events take place, but the economic and social consequences of such events are particularly important in cities. Many coastal cities in the developing world are at risk due to climate change, extreme weather events and the lack of proper planning. In particular, planning can help increase resiliency to such events by enabling cities to adapt their responses on the basis of experience in disaster risk reduction.

**ECONOMIC IMPACT OF DISASTERS**

Natural geographic advantages have historically attracted human settlements to rivers and coasts. Almost one-quarter of the world’s population lives within 100 km of the coast and less than 100 m above sea level (Small and Nicholls, 2003). The Intergovernmental Panel on Climate Change (IPCC) argues that 60% of the world’s largest metro-regions (with over 5 million people) are located within 100 km of the coast, including 12 of the world’s 16 cities with populations greater than 10 million. The attraction to the coast is so strong that people are willing to give up living space to be near the coast. As a result, population densities in coastal regions are about three times higher than the global average.
Throughout the last century, mankind has been effective at developing the tools to limit the number of casualties resulting from natural disasters, but has been less successful at curbing their economic impact. In addition to human losses and asset damages that result in loss of output, natural hazards also have an indirect economic impact by disturbing the productive system: damages to the assets, infrastructure and linkages that firms need to operate. In 2011, the world experienced damages in the order of US$350 billion compared to the few dozen billion US dollars annual damages incurred in the 1970s. In fact, every few years since the Kobe earthquake in 1995, a single catastrophic event will take place that will multiply the amount of economic damages. Yet, all these estimations fall short of the actual economic impact, since they do not include the indirect consequences of these events.

From an economic standpoint, floods are one of the most costly and damaging disasters, and will pose a critical problem to policy makers as they increase in frequency and severity. The frequency and severity of flooding has generally increased in the last decade compared to the pre-1980 period. In addition to being more frequent, they have also become more severe. Floods with discharges exceeding 100-year levels are much more frequent (OECD, 2008; Kron & Berz, 2007). Severe precipitation events are predicted to cause a greater incidence of flash flooding than in the past, particularly in urban settings (IPCC, 2007). In addition to the obvious structural damages and loss of life that they can cause, floods can short-circuit transformers and disrupt energy transmission and distribution, paralyze transportation, compromise clean water supplies and treatment facilities, and accelerate spread of water-borne pathogens (OECD, 2008; Ruth & Rong, 2006; IPCC, 2001). With severe levels of precipitation, existing water treatment infrastructure needs to be evaluated, along with water transport systems. Systems that are able to cope with excess precipitation or an influx of seawater need to be designed. The City of London Corporation, for example, has identified “hot spots” vulnerable to flooding, where it plans to install new sustainable drainage system and invest in maintenance to accommodate the expected rise in the volume of precipitation (OECD, 2008). In Sub-Saharan Africa, adapting new and existing infrastructure for urban wastewater treatment systems has been estimated to cost between 2 and 5 billion dollars per year. In Toronto, similar improvements were valued at around USD 9 billion annually (OECD, 2008).

In the absence of adaptive infrastructure changes, socio-economic models of future flood damage in cities (e.g. Boston or London) predict the need for vast increases in spending in response to climate-change related damages (OECD, 2008; Kirshen, Ruth & Anderson, 2005; Hall, Motzklin, Foster, Syfert, & Burk 2002; and Choi & Fisher, 2003). Adaptation and mitigation measures are already being applied around the world. Some of these measures, such as dykes, can be argued to be cost-effective; but they could also bring about unintended consequences. Coastal infrastructure protecting against storm surges, such as sea walls, could damage local landscapes, ecosystems and beaches, which may impinge on the tourism industry. Fisheries may also suffer. Infrastructure to reduce coastal flooding can damage coastal ecosystems on which, according to Hallegatte, Henriet and Corfee-Morlot (2008), 90% of fish species depend during at least one stage of their life cycle.
The urbanization of poverty phenomenon has resulted in the concentration of large numbers of the poor in urban areas. These groups are especially vulnerable to climate change and extreme weather events. Poor city residents tend to locate in the most vulnerable locations and housing construction materials are not robust. The consequences of surging seas, windstorms, and flooding are much more dramatic in these areas (OECD, 2010). Recent OECD work shows that a 50-cm sea level rise, factoring in socioeconomic development, could result in a tripling of the population at risk of coastal flooding by 2070 and a tenfold increase in the amount of assets exposed. Such an increased exposure translates into an almost two-fold increase in the value of assets at risk in terms of Gross Domestic Product (GDP): from 5% of GDP in 2008 to 9% of GDP in 2070. However, for Lall and Deichmann (2009), urban agglomerations by their own nature—being the places where wealth and skills tend to concentrate—can mitigate some of the risks: after all, higher income countries tend to have lower life losses. Wealthier societies could also mean, according to Lall and Deichmann (2009), better housing quality, institutions that are able to enforce risk mitigation measures, and economies of scale can be achieved in risk control measures because these can benefit a larger population. More often than not, social capital is a key ingredient in disaster-risk management (DRM). As climate change will demand greater local-government capabilities, social capital becomes increasingly important to build more resilient cities.

VULNERABILITY IN THE CARIBBEAN

The Caribbean population and assets are among the most exposed to natural disasters in the world. For instance, over 96% of Jamaica’s population and GDP are located in risk-prone areas to at least two hazards. According to the World Bank (2005), Jamaica is the third most exposed country to at least two hazards in the world. Similarly, Grenada has over the last two decades lost 9% of GDP annually to natural hazards (World Bank, 2012). The problem is particularly acute in Haiti and the Dominican Republic where losses as a proportion of population and GDP size, have been the greatest in the region.

Every year, Caribbean countries experience losses as a result of natural disasters as they are particularly prone to earthquakes and meteorological-related hazards (i.e. flooding, high winds and landslides). Although less common than the latter, earthquakes represent the biggest threat in terms of population and asset losses from a single event. That is particularly the case in Antigua and Barbuda, Haiti, the Dominican Republic and Jamaica. Meteorological-related events such as flooding, high winds and landslides intensify during the rainy season (June to November) through hurricanes and tropical storms. Each year, at least one major hurricane and several tropical storms sweep across the Caribbean. Coastal cities in the region are therefore particularly exposed to meteorological hazards, climate change and in some cases earthquakes.

Such events have the potential of destroying lives, livelihoods, infrastructure and economic activity. Climate change is expected to worsen the threats for the Caribbean by making these events more acute in addition to accelerating above-mentioned challenges such as sea-level rise and coastal erosion. It is estimated that if current trends continue, between USD 350 and 870 million will be lost each year in the Eastern Caribbean sub-region alone. The World Bank (2012) has estimated that the entire Caribbean lost USD 9 billion between 2007 and 2011 due to natural disasters, which is more than twice the size of the economy of Barbados or seven times that of Antigua & Barbuda.
Estimates by Cardona (2007) show that a 50 or 100-year event can lead to severe economic consequences for countries with higher exposure to natural hazards in Latin American and the Caribbean. Cardona (2007) estimated considerable losses given the size of the economies of the Dominican Republic, Jamaica, and Trinidad & Tobago (Figure 2).

Figure 2. Probable Maximum Loss in 50 and 100 years

IMPROVING RESILIENCY

Because economic and human densities amplify risk and change the economics of disaster risk reduction strategies, urban disaster risk management is different than any other type. Lall and Deichmann (2009) argue that an increasing number of people and assets are exposed to natural hazards in dense urban areas, and that economic and human density can amplify risk and change the economics of disaster risk reduction strategies. A disaster-resilient city therefore, attempts to minimize risks by favoring neighborhoods with organized services and infrastructure that adhere to sensible building codes; and by avoiding informal settlements built on flood plains or steep slopes because no other land is available. To be more resilient, cities need to take steps to anticipate and mitigate the impact of disasters, incorporating monitoring and early-warning technologies to protect infrastructure, community assets and individuals, including their homes and possessions, cultural heritage, and environmental and economic capital. Cities also need to take steps to develop systems to quickly respond to crises and restore services after a disaster.

Resilient cities require social capital and adequate institutional arrangements. People need to be empowered and to participate, decide and plan their city together with local authorities. A resilient city is run by an inclusive, competent and accountable local government that is concerned about sustainable urbanization and that commits the necessary resources to develop capacities to manage and organize itself before, during and after a natural hazard event (e.g. Box 1 on accountability in the Philippines). Local authorities and population in a resilient city understand their risks and develop a shared, local information base on disaster losses, hazards and risks, including who is exposed and who is vulnerable. Such a form of governance must also act to reduce greenhouse gas emissions to address climate change at its roots (ISDR, 2012).

The Probable Maximum Loss (PML) calculates potential losses using a model that takes into account different hazards (which are calculated in probabilistic form according to historical data on the intensity of past phenomena) and the actual physical vulnerability of the elements exposed to such phenomena. This analytical and predictive model is not based on historical measures of losses (deaths and number of people affected), but rather on the intensity of the phenomena.

25 The Probable Maximum Loss (PML) calculates potential losses using a model that takes into account different hazards (which are calculated in probabilistic form according to historical data on the intensity of past phenomena) and the actual physical vulnerability of the elements exposed to such phenomena. This analytical and predictive model is not based on historical measures of losses (deaths and number of people affected), but rather on the intensity of the phenomena.
Building resilience in a city requires an integrated approach based on the four dimensions of resiliency: environmental, economic, social and institutional (Figure 3). To be resilient, a city must not only face environmental hazards, but protect and integrate key ecosystem services, as well as develop economic, social and institutional resiliency. As part of the adaptation and mitigation efforts to address environmental challenges, the city should work on increasing the adaptive capacity of buildings and critical infrastructure, including water and power supply systems, and to develop an emergency preparedness. The system should have in place a plan for economic recovery after a disaster, while also diversifying the economy when possible, to lower the risk of economic crisis. Social inclusion programs could be coupled with land-use planning to address vulnerable groups’ exposure to risks. To allow for this, the system would need an institutional set up that allows for participation, as well as an urban risk assessment and a robust decision making process that is based on cost-benefit assessments valuing social and environmental aspects and that takes into account long-run risk. Cities would develop plans on the basis of social participation and empowerment so that social capital can become a source of resiliency. To be effective, urban resiliency strategies should incorporate partnerships with other levels of government as well as with other cities (e.g. see the case of Mozambique in Box 2).

Box 1. Accountability: The case of the Philippines

The Mindanao Summit on Disaster Risk Reduction and Geo-Hazard Awareness in Cagayan de Oro City was convened by two Philippines Government senators after a devastating tropical storm hit Mindanao and nearby areas. It brought together a range of government and civil society stakeholders to discuss how to reduce disaster risks. They identified specific legislative, communication, planning, and response priorities for disaster risk reduction, among them creation of a disaster response and an accountability rating system for local government units.

Source: Jha, Miner and Stanton-Geddes (2013).

Box 2. Participatory planning in Mozambique

In Quelimane City, Mozambique, local informal communities partnered with the City Council and several international organizations (Cities Alliance, World Bank, DANIDA, UNICEF, WaterAid) to work on upgrading communities that are particularly affected by cyclical floods because of a high water table and heavy rains. City and communities worked together to formulate a participatory urban development strategy for informal neighborhoods, where about 80 percent of the population live, taking into account water and sanitary conditions.
The participatory planning process led to joint action to improve conditions in densely populated peri-urban slum belts. The City Council made an in-kind contribution of US$100,000 by providing office space, equipment, a meeting room, technical/administrative staff, and vehicles. The community provided an in-kind contribution of US$150,000 by providing subsidized labor, conducting awareness campaigns, forming operational management teams, and reducing plot sizes or, in extreme cases, moving to another area. UN-HABITAT, the World Bank, DANIDA, UNICEF, and WaterAid together contributed US$440,000 in cash and in kind. Other in-kind contributions totaling US$30,000 were secured from a state water-supply institution and a private firm that made its trucks available on weekends in exchange only for payment for the fuel and the driver.

The results achieved through these combined efforts included a City Council that was better equipped to work with informal settlements; construction of two community centers; cleaning of 10 km of drainage channels with 1 km paved; widening and improvement of 20 km of unpaved roads; installation of 10 new water points in the most densely populated areas; and construction of 20 rainwater collection systems and four public lavatories—all mainly through planned labor-intensive activities. The endeavor also produced greater government and community awareness of water, sanitation, and drainage maintenance issues and improved planning for sanitation and expansion of the water supply network to densely populated peri-urban slum belts.

Source: Jha, Miner and Stanton-Geddes (2013).

MITIGATION, ADAPTATION AND ENVIRONMENTAL MEASURES

Complementary mitigation and adaptation policies need to be employed to address risk and climate change. There is a significant distinction between climate change mitigation and adaptation. Mitigation efforts aim at reducing greenhouse gas (GHG) emissions to reduce the severity of climate change. Adaptation involves readjusting life to the reality that a certain amount of climate change will inevitably occur. However, an effective climate change policy for cities needs to include both, and they need to be approached in an integrated manner. Adaptation is necessary to address impacts resulting from global warming that will occur even in the most optimistic IPCC-assessed carbon stabilization scenarios. In the long run, in the absence of mitigation actions, natural and human systems’ capacities to adapt could be exceeded. Early mitigation actions are indispensable to reduce the magnitude of climate change and can, at the same time, be combined with adaptation needs.
Public investment in flood protection is one of the most important adaptation tools for coastal cities, but they should be carefully planned so that their impact on the environment is minimized. Some of the most well-known examples include Venice (Box 3), New Orleans, Helsinki or Rotterdam. However, these investments have triggered a debate as they can lead to the destruction of ecological resources in order to protect the built environment. Parks and natural spaces can be used to provide flood protection without destroying natural resources. However, more often than not, the need for horizontal co-ordination – in addition to the vertical co-ordination required with regional and national governments in charge of environmental management – hinders the use of ecological preservation as a tool for adaptation since these parks and natural spaces frequently fall outside city boundaries. Natural resource policies, and in particular wetland protection and urban forestry programs can also play an important role in adaptation by providing natural buffers for storms, in addition to providing mitigation benefits by removing CO2 from the atmosphere.

Local government disaster risk management (DRM) plans are increasingly taking into account potential impacts and vulnerability assessments. The Finnish cities of Espoo and Helsinki have mandated that new planned areas be 2.6 meters above sea level, and that the lowest floor level of new buildings be 3 meters above sea level (Voutilainen, 2007).

Box 3. Adaptation: The Case of Venice

The approved plan to protect Venice, MOSE (Modulo Sperimentale Elettromeccanico, or Experimental Electromechanical Module), involves the construction of 79 gates at three lagoon inlets. When waters rise 1.1 meters (43 inches) above “normal”, air will be injected into the hollow gates, causing them to rise, blocking seawater from entering the lagoon and thereby preventing the flooding of Venice. At the Malamocco inlet, the walls of the MOSE project are being built just like the original walls in Venice. But workers are driving 125-foot-long steel and concrete pilings into the lagoon bed, instead of wooden pilings. When the giant doors are at rest, they will be lying invisible to Venetians and tourists on the bottom of the inlet channel. Each gate will be up to 92 feet long, 65 feet wide, and will weigh 300 tons. Depending on the type of tides, there are different ways to manage the gates. They are flexible: they can close one inlet and not the other, depending on sea tides, wind and rain. There is no need to close the whole lagoon allowing a continuous exchange of water from the open sea to the lagoon.

Source: Prasad et al. (2009).

Another important set of mitigation and adaptation actions that are becoming increasingly relevant are those aimed at addressing increasing levels of precipitation as a result of climate change. London and Venice are redesigning their urban storm-water drainage system giving consideration to the increase in the frequency and intensity of rainfall. Tokyo is designing urban holding ponds under roads and parks to temporarily hold runoff water to avoid flash floods. Jakarta has recently initiated a program to construct a major storm-water drainage canal system known as the East Canal to provide adequate drainage to the eastern half of the city. In Vietnam, physical protection from typhoons and rising sea water levels is provided by an extensive system of dikes (Box 4).
Box 4. Nam Dinh Province, Vietnam

A range of disaster risk management measures have been identified for Nam Dinh according to the draft of Vietnam’s Second National Strategy and Action Plan including:
• Protecting existing upstream forest watersheds to reduce downstream floods;
• Building large- and medium-scale reservoirs upstream on big rivers to retain flood water;
• Strengthening dike systems to be able to resist flood levels;
• Building flood diversion structures;
• Clearing floodways to rapidly release flood water;
• Strengthening dike management and protection works to ensure the safety of the dike systems;
• Constructing emergency spillways along the dikes for selective filling of flood retention basins; and
• Designating and using flood basins to decrease the quantity of flood water flow.

Source: Prasad et al. (2009).

RESILIENT INFRASTRUCTURE AND SERVICE PROVISION

As cities develop, they must evaluate infrastructure and service improvements through a climate change lens so as to promote long-term mitigation, adaptation, and poverty alleviation. Cities that focus on provision of basic urban services to the poor tend to do so in an integrated manner. Reducing infrastructure vulnerability to climate change poses a key challenge for local and regional transportation authorities. Preventing disruptions due to flooding is chief among these concerns. It is vital for cities to clearly assess and plan for sea-level rises, storm-surges and other storm impacts that exceed existing 100-200-year plans (OECD, 2010). Coastal cities’ public transportation systems are at risk, particularly regarding flooding due to storms and rising sea levels. Below-ground transportation systems are particularly susceptible to water damage. Extreme heat can also damage roadways, bridges, and rail lines that were designed for lower temperatures. But resilient infrastructure alone is not sufficient to provide uninterrupted service delivery. Coastal cities need to also work on improving resiliency in services. Building resiliency requires: (i) advanced drainage systems that can alleviate flooding during intense storms; (ii) healthcare services prepared for emergencies; (iii) warning systems; and (iv) transport infrastructure that allow citizens to evacuate in response to risk.

As cities compete globally to attract investment, skills and talent, slum growth, insecurity, and vulnerability to natural hazards can become location decision factors. Urban policies aimed at reducing inequality, reducing poverty and managing risks can be growth-enhancing policies as well. In particular, an important adaptation strategy for local governments is to provide new shelter options for the poor to avoid settlements on marginal land that not only fosters slum growth but also often exposes already vulnerable population groups to live in risk-prone areas. Providing better settlement options for vulnerable population serves the dual purpose of immediately providing them with a safer living environment and contributing to more resilient neighborhoods and cities in the longer term.
Land-use planning tools can contribute to disaster risk management in coastal cities. On the one hand, land-use planning can be used to favor more compact urban developments that reduce intra-urban trips and commuting times. In turn, such compact arrangements result in lower GHG emissions, less traffic and more productive urban centers. High-density development can also be the result of land-use planning efforts, which have been associated to a decrease in GHG emissions (OECD, 2010). On the other hand, land-use planning can be a powerful DRM tool. Coastal cities threatened by sea-level rise or sea water intrusion as a result of a tsunami or storm surge are turning to land-use planning through regulation or market incentives. Singapore, for example, has decided to increase the ground level in all reclamation programs to factor in the likely increase in sea level due to climate change (Box 5). Similarly, Chile has set a line along the coast, prohibiting development under a certain threshold and requiring minimum heights in lower floors for all other risk-prone areas in coastal cities. The City of London has also factored in sea-level rise in the redesign of Thames Barrier flood control system. Shanghai has plans to implement a two-phase project that is designed to regulate water flow in the region to reduce flooding and provide a platform for water quality monitoring. In the US, rolling easements have been introduced to discourage development of coastal areas by granting a public right-of-way to a narrow portion of coastal property, which migrates inland as the shore erodes. This prevents coastal land owners from erecting structures to block sea level rise, as well as allocating the risk of sea level rise to the private land owner (Titus and Narayanan, 1996). The most immediate impact of the policy would be to discourage new coastal development in areas vulnerable to coastal flooding.

Box 5. Singapore’s Taps Strategy

Singapore’s Four National Taps Strategy aims at ensuring that the country has enough water to meet its future needs. The first tap is the supply of water from local catchments. This consists of an integrated system of 14 reservoirs and an extensive drainage system to channel storm water into the reservoirs. The Marina Barrage, completed in late 2007, has converted the Marina Basin into Singapore’s 15th reservoir with a catchment area of about 10,000 hectares (or one-sixth of Singapore’s land area). Dams have also been constructed across Sungei Punggol and Sungei Serangoon, creating a new catchment area of over 5,000 hectares. Collectively, these projects were projected to increase water catchment areas from 50 percent to 67 percent of Singapore’s land area, fulfilling one of SGP 2012 targets on clean water.

The second tap, imported water from Johor, while the third tap, NEWater or high-grade reclaimed water further supplement Singapore’s needs. Thanks to advanced membrane technologies, treated effluent from the water reclamation plants is processed to produce high-grade reclaimed water of drinkable quality. NEWater is supplied from four plants with a combined capacity of 42 million gallons per day.

Recent technological advances have made Singapore’s fourth tap, desalinated water, an affordable source. The first desalination plant at Tuas started operations in September 2005 and can supply a maximum of 30 million gallons per day of drinking water.

Source: Prasad et al. (2009), Ng and Tan (2013) and Yim (2012).
PROGRESS AND CHALLENGES FOR A MORE RESILIENT CARIBBEAN

In recent years, countries in the Eastern Caribbean sub-region have made substantial progress in strengthening their disaster risk management capacity, but more can be done particularly in the area of risk reduction. In 2011, according to a study for the Caribbean region carried out by the United Nations Development Program (UNDP, 2011), the region has made good progress in disaster risk management. Achievements have been made in the following areas: hazard mapping and its application to development planning; monitoring and warning systems and preparedness; development of institutional and legal frameworks; community-based disaster management programs; public information and dissemination; and recognition of the importance of forecasting climate change effects to disaster risk management. Caribbean countries have also joined the world’s first pooled insurance facility, Caribbean Catastrophic Risk Insurance Facility (CCRIF), successfully sharing their catastrophic risk and thereby limiting their financial impact.

But while these recent improvements in disaster risk management are encouraging, Eastern Caribbean nations still lack the required capacity to assess the full financial implications of the disasters to which they are likely to be exposed. A better understanding of the economic and financial impacts of disasters would provide critical information, without which sound ex-ante risk reduction cost-benefit analysis or risk reduction strategies cannot be developed (World Bank, 2012). One of the primary challenges to ensuring an effective recovery and identifying future risk mitigation activities is obtaining reliable data for sector-specific damages and losses following a disaster event. In the Eastern Caribbean context, the National Disaster Organizations (NDO) or similar institutions are mandated with coordinating all post-disaster damage and loss assessments. NDOs are also mandated with the legal, institutional and operational aspects of disaster prevention and mitigation, as well as the coordination of emergency response, recovery and rehabilitation efforts following a disaster. However, they remain quite dependent on external partners to define and implement comprehensive post disaster assessments such as the Damage and Loss Assessment (DaLA) or Post Disaster Needs Assessment (PDNA). Further, in most cases, relevant NDOs do not understand what is expected from them in order to effectively conduct the DaLA and/or PDNA and how information generated from these assessments relates to sector-specific assessments and recovery strategies (World Bank, 2012).

Strong regional leadership and consistency of approach, national leadership, policy-level support, cross-disciplinary linkages, analysis and quantification of impacts, committed personnel and availability of technical skills will be needed to further develop disaster resilience in the region.

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27 The Damage and Loss Assessment (DaLA) Methodology was initially developed by the UN Economic Commission for Latin America and the Caribbean (UN-ECLAC) in 1972. It has since been improved through close cooperation with the World Health Organization (WHO), the Pan American Health Organization (PAHO), World Bank, UNDP, Inter-American Development Bank, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the International Labor Organization (ILO). This methodology is adaptable to multi-hazard events and provides national governments with the instrumentation to conduct a post-disaster needs assessment and to prioritize the recovery and reconstruction planning process. Although the tool assesses all sectors, its main application is on the on socio-economic and environmental impacts of disasters. The DaLA is a globally recognized tool, and is used to determine the financial resources required to achieve full recovery and reconstruction.
CONCLUSIONS
Many coastal cities around the globe are stepping up to the challenge of adapting their infrastructure to the threat posed by growing natural hazards, as well as putting in place mitigation policies to reduce GHG emissions. However, the number of governments that have adopted an integral approach to disaster risk management is much lower. Such an integral approach incorporates not only environmental aspects, but also economic and social aspects of resiliency. Successful policies that rest on an integral approach require solid institutional arrangements that promote citizen participation, empower neighborhoods to propose changes to policy making and foster the accumulation of social capital. In the end, the risks that these policies aim to reduce are caused by individual and community-level actions and behaviors and probably can only be resolved there: at the community level.
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MARKET-BASED AGRICULTURAL RISK MANAGEMENT IN THE CARIBBEAN

Diego Arias and Sara Giannozzi*
ABSTRACT

Natural disasters and commodity price fluctuations have a strong impact on the economies of Caribbean countries. However, agricultural insurance for individual farmers is scarce and difficult to implement. This article discusses how agricultural risk management could be improved in the Caribbean, and how such practices could help reduce economic losses associated with these events, reduce uncertainty, and improve the competitiveness of the region. Recommendations include the adoption of country-specific risk management strategies, focusing on market-based instruments and on partnerships between the public and private sectors. These strategies should also consider multi-sectoral collaboration, should be comprehensive and demand-driven, should consider informal as well as formal approaches, and should consider starting with small-scale, scalable, projects.

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INTRODUCTION

Caribbean countries are highly vulnerable to natural disasters: between 1990 and 2010, such disasters caused Caribbean countries losses of between 9 and 1 percent of their GDP every year. They are also exposed to commodity price fluctuations, due to the openness of their economy. At the same time, agriculture remains an important source of income for many of them, as well as a significant employer (around 20 percent of total employment in the region, with higher peaks in countries like Grenada and Haiti, where it reaches 50 percent). However, agricultural insurance for individual farmers is hard to implement in the Region and farmers and governments absorb most of the consequences from weather hazards and commodity shocks. Improving current agricultural risk management practices can help reduce losses associated with future weather events, reduce uncertainty and increase competitiveness and economic growth.

This chapter briefly summarizes the main lessons learned from the recent World Bank engagement to strengthen market-based agricultural risk management in the region. These findings point towards the importance of developing country-specific risk management strategies for the agricultural sector, with a focus on market-based instruments targeted to reducing vulnerability, and on partnerships between public and private sectors to assess the countries’ particular challenges and find common approaches to design and implement market-based solutions.

ACCESS AND AVAILABILITY OF AGRICULTURE RISK MANAGEMENT TOOLS

Apart from a few exceptions28, the Caribbean agricultural sector does not have access to market-based agricultural risk management instruments (insurance and hedging) in case of major shocks such as international price fluctuations and disasters, despite its high level of vulnerability. Farmers and agribusinesses must rely on a combination of informal (crop diversification, off-farm income) and traditional (saving, borrowing) financing, as well as on more formal risk management tools (government support, mutual funds and other forms of risk-sharing through commodity boards) to deal with these types of shocks.

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28 The Windward Island Crop Insurance (WINCROP) provides insurance for banana growers in the Eastern Caribbean and a public agricultural insurance company has been able to provide multi-peril insurance to 7 percent of the area cultivated in the Dominican Republic.
As a consequence, most of the costs imposed by weather hazards and commodity price shocks are absorbed by farmers, local agribusinesses, and/or governments, lowering income levels, increasing rural poverty and reducing economic growth and competitiveness. It is important to emphasize the role of the government, given the small size of the average farm in the region and given the vulnerability of the agricultural sector to frequent and intense weather events.

The difficulties in making affordable insurance available to small farmers have to do with:
(i) a multi-cropping structure of smallholder farming (some small farmers in Jamaica have up to 15 crops on 1 plot of land), which complicates the evaluation of exposure of different crops to the various production shocks; (ii) the lack of affordable mechanisms for insurance companies to offer insurance to small individual farmers; (iii) the insufficient quality of the information available about the agro-climate to undertake probabilistic analysis at a disaggregated level; (iv) the insufficient capacity to design and administer agricultural insurance contracts; and (v) the provision of ex-post support programs, which reduce farmers’ willingness to pay for insurance.

DEVELOPING MARKET-BASED APPROACHES TO AGRICULTURE RISK MANAGEMENT

Between 2009 and 2012 the World Bank provided advisory services on market-based agricultural risk management to a total of six countries in the Caribbean: Jamaica, Haiti, Guyana, Belize, Grenada, and the Dominican Republic. The World Bank first began providing advisory services in the early 2000s in the area of agricultural risk management by financing pilot projects related to agricultural insurance and commodity price risk management. In 2007, authorities implemented a more regional approach to risk transfer of weather events in the Caribbean with the launch of the Caribbean Catastrophic Risk Insurance Facility (CCRIF)29. More recently, World Bank technical assistance has also incorporated a more country-specific and comprehensive approach towards agricultural risks based on the countries’ particular demands. The technical assistance described here has taken into account these two approaches: considering a regional approach but also local country conditions in the implementation of agricultural risk-management instruments.

Given the importance of the agricultural sector and the heterogeneity of its production structure across the Caribbean, a country-specific approach was an essential part of the technical assistance. The primary objective was to support the development of country-specific risk management strategies for the agricultural sector. In order to achieve this objective, the Bank facilitated rapid sector-wide risk assessments. Where appropriate, it facilitated feasibility studies for the design of innovative risk management mechanisms, with a focus on market-based instruments to reduce the vulnerability of small and medium-sized producers. Coordination with the private sector was an important element of the program. The approach included the following basic principles:

- Multi-sectoral collaboration: the Bank ensured the participation of a multi-sectoral team that was able to bring an integrated approach including knowledge of specific sectors, regional perspectives and financial sector expertise.

29 CCRIF is a risk pooling facility designed to limit the financial impact of catastrophic hurricanes and earthquakes on Caribbean governments by quickly providing short-term liquidity when a policy is triggered. It is the world’s first and, to date, only regional fund using parametric insurance, which allows Caribbean governments to purchase catastrophe coverage at the lowest-possible price.
**Public-Private Partnership:** the Bank worked jointly with the public and the private sectors to provide technical assistance to local insurance companies, banks, governments, agro-industry groups, and donors to help them assess the countries’ particular challenges and find common approaches to designing and implementing market-based solutions in the agricultural sector.

**Comprehensive risk management framework:** the Bank used a comprehensive risk management framework in order to assess the countries’ agricultural risks. Those risks mainly included vulnerabilities related to short-term weather events as well as long-term hazards, including price risks and animal and plant health threats. The framework incorporates the different actors and phases (mitigation/prevention, transfer, and coping/response) in the risk management spectrum. The final objective was to move public sector risk-management strategies from reactive responses (ad-hoc or ex-post) to more proactive approaches (ex-ante) with respect to weather events.

**Demand-driven:** an important principle for delivering the technical assistance was the implementation of a demand-driven approach. The central purpose was to implement market-based strategies and tools based on countries’ demands with the final objective of possible mainstreaming and scaling up successful experiences. Although most of the work was country-specific, the advisory work also provided capacity building at the regional level, through institutions like the InterAmerican Institute for Agriculture Cooperation (IICA) and the Caribbean Farmer’s Network (CaFAN).

**Potential for scaling up:** It was important to quickly identify the potential to provide valuable lessons at the regional level. For example, similar projects in Central America proved to be a good channel for further developments in commodity risk management policies (e.g. agricultural technology, micro-finance and climate change).

The technical assistance was implemented in four stages. Stages one and two were conducted in all six countries with the participation of different stakeholders and resulted in a country-specific sector-wide evaluation and a public sector strategy for coping with systemic agricultural risks. During stage three, country-specific feasibility study were conducted, based on specific requests from two countries, in order to evaluate the possibility of implementing market-based risk management instruments. Finally, stage four built on the work done in previous stages by implementing specific pilot projects.

| Stage one => Agricultural risk assessments | Initial rapid assessment to appraise public and private capacities to manage risks in all six countries, as well an assessment of the availability of market-based instruments (in the case of Belize and Grenada). Additional rapid assessments conducted for specific supply chains (ex. Haiti and Guyana coffee supply chain) |
| Stage two => Development of public sector strategies for coping with systemic agricultural risks | Bank engaged in conversations with the public sector to facilitate the development of a strategy to manage systemic risks at the micro, meso and macro level, focusing mainly on weather risks (hurricane, tropical storms, etc.). These strategies were developed in Jamaica and Haiti. |
Stage three => Feasibility studies for market-based risk management and transfer instruments.

In-depth feasibility studies, including a modeling exercise for weather risks to correlate farm losses with weather variables and determine trigger variables for index-based insurance, as well as an assessment to evaluate the type of coverage and transfer mechanisms (public/private) best-suited for reaching farmers. The pre-feasibility studies were done for insurance products in Guyana, Jamaica and Dominican Republic.

Stage two => Development of public sector strategies for coping with systemic agricultural risks

Based on the feasibility studies, additional support was provided to facilitate the design of market-based instruments or mechanisms on a pilot basis (i.e. Jamaica, an index-based insurance pilot program was developed for the coffee industry).

SOME REGIONAL LEVEL LESSONS THAT HAVE EMERGED FROM THIS ENGAGEMENT

Market-based financial agricultural risk management instruments are difficult to implement in the Caribbean region at the farm level because of the high proportion of small farmers (ranging from 1.4 ha in Haiti and Jamaica to around 2 ha in Belize) with a very diverse production structure. Assessing the particular production losses at the individual level is technically challenging. Furthermore, commercial banks and/or insurance companies usually do not have the infrastructure to reach small farmers in remote areas.

Farmers in the Caribbean tend to use informal risk-management approaches, which can be successfully complemented by more formal, market-based instruments, as well as other public or private risk transfer mechanisms. Informal risk management strategies include personal savings, household buffer stocks, community savings and non-formalized cooperatives (i.e. commodity boards). A more formal risk management approach implemented by the government involving risk mitigation, risk transfer and risk coping mechanisms would be very beneficial for small farmers as well as for the efficiency and effectiveness of public expenditures. This approach would provide farmers with an additional source of financing to manage both weather and production risks without relying solely on their own savings and farm income.
CONCLUSIONS
Public intervention in past catastrophic events has been necessary to cover extreme agricultural losses for small farmers. While these public interventions are crucial, they can be made more effective and efficient. In particular, disaster payments to farmers can be structured through clear ex-ante rules for triggering and distributing public sector assistance; and a clear process for registering and becoming eligible for ex-post support should also be considered. In addition, the financial structure behind such a program must be improved by allowing the government to transfer part of its fiscal exposure to the international market.

A risk layering approach could be used to finance public interventions in the agricultural sector in response to systemic shocks. For example, low cost (high frequency) events could be financed with reserves and personal savings, while more catastrophic (lower frequency) events could be financed with contingent credit lines and/or insurance instruments. A macro-level risk transfer mechanism was introduced in the region through the implementation of the CCRIF in 2007. The optimal mix of risk financing strategies is country-specific, but the high external debts of the Caribbean countries limits their ability to access additional financing through credit lines, so CCRIF insurance makes up a big part of the countries’ risk financing structure for natural disasters. Additional analysis is required to develop instruments to cover agriculture sector risks (e.g. non-cyclonic rainfall and droughts). The CCRIF’s recent announcement of plans to launch a new excess-rainfall product to supplement its earthquake and hurricane policies is a step in the right direction.

The public and private sectors need to become more aware of the potential benefits of market-based products. The limited availability of market-based instruments in the Caribbean is partly explained by the fact that public sector officials, the financial sector (lending to agriculture) and agribusinesses do not have access to, or know of, the potential benefits of agriculture insurance or commodity-price risk hedging. Moreover, the region currently lacks the technical capacity to design and offer these instruments, which constrains their development.
MITIGATING VULNERABILITY TO HIGH AND VOLATILE OIL PRICES IN THE CARIBBEAN

Rigoberto Ariel Yépez-García and Sara Giannozzi*
ABSTRACT

High and volatile oil prices have affected government finances and balance of payments as well as household purchasing power and private sector investment. In the Caribbean, which is highly dependent on imported oil, particularly in electricity generation. This policy note proposes a menu of alternatives that can be applied as a multi-horizon strategy, such as financial instruments to manage price risks, complemented by structural measures designed to reduce dependence on oil for electricity generation, to reduce energy consumption, and to promote regional cooperation. Finally, the note discusses some of the macro and micro benefits that can accrue from implementing such alternatives ranging from the long-term financial viability of the national economy to a higher living standard for households.

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**Content based on the 2012 World Bank report “Mitigating Vulnerability to High and Volatile Oil Prices: Power Sector Experiences in Latin America and the Caribbean”

INTRODUCTION

The past decade has witnessed an unprecedented rise in world oil prices and oil price volatility. Countries heavily dependent on imported oil to power a significant portion of their electricity generation are especially vulnerable. This is the case in the Caribbean, where high and volatile oil prices have affected government finances and balance of payments as well as household purchasing power and private sector investment. Moreover, high levels of uncertainty and risk tend to reduce planning horizons and cause firms to postpone investments, reducing capital formation and long-term growth. For all of these reasons, economic growth strategies in the region cannot ignore this dependency and the way it affects growth.

This note is based on the 2012 World Bank report “Mitigating Vulnerability to High and Volatile Oil Prices: Power Sector Experiences in Latin America and the Caribbean”, with the objective of presenting the findings that are currently most relevant for the Caribbean region. Therefore, the note first reveals the economic effects of high and volatile prices on oil importing countries, with an emphasis on the power sector. Secondly, it proposes a menu of alternatives that can be applied as a multi-horizon strategy, such as financial instruments to manage price risk, complemented by structural measures designed to reduce dependence on oil for generation of electricity and to reduce energy consumption. Finally, the note presents the results of an attempt to quantify some of the macro and micro benefits that can accrue from implementing such alternatives.

OIL PRICE EVOLUTION AND RISK EXPOSURE

The past decade has witnessed an unprecedented rise in world oil prices and oil price volatility. Since 2002, the spot price for West Texas Intermediate (WTI) has increased more than fivefold, and this upward price trend has featured significant volatility. At peak oil prices in 2008, the standard deviation in daily price changes was nearly twice that observed six years earlier.

The greater economic uncertainty and higher risk introduced by oil price volatility adversely affect oil importing and exporting nations alike. Countries with a high proportion of oil in their primary energy supply are especially vulnerable to higher and more volatile prices.
Caribbean countries, where oil imports constitute a large share as percentage of GDP (11 percent in 2006), are especially vulnerable to high and volatile oil prices. The World Bank (2006) estimates that in Latin America a 16 percent increase annually in oil prices over a five-year period would increase growth in oil-exporting countries by 0.14 percentage points, compared to a loss of 0.10 percentage points for oil-importing countries. The greatest growth losses, 0.12 percentage points, would be experienced in the Caribbean.

WHAT IS THE ECONOMIC IMPACT?

Economies are affected by high and volatile oil prices at both macroeconomic and microeconomic levels. The major direct effects at the macro level are a deteriorating trade balance, due to a higher import bill, reflecting a worsening in terms of trade; and a weakening fiscal balance, due to greater government transfers and subsidies to insulate domestic markets from these price changes. At the micro level, the major direct effect is investment uncertainty, resulting from the higher risk of engaging in new projects.

The major indirect effects are inflation; loss of consumer confidence and purchasing power, due to greater economic uncertainty and higher inflation; loss of competitiveness caused by higher power generation and transport costs; and institutional weakening, as firms and households pressure the government to protect them from these price changes in ways which bypass market mechanisms, which, in turn, affects the credibility and functioning of the regulatory environment.

WHO BEARS THE RISK BURDEN?

In net oil-importing countries worldwide, high and volatile oil prices ripple through the power sector to numerous segments of the economy. In Central America and the Caribbean, the two sub-regions identified as the most vulnerable to oil price risk in Latin America, oil supplies 51 percent of primary energy needs, compared to 42 percent for the LAC region as a whole, and 35 percent for the world overall. Countries who use imported oil to power a significant portion of their electricity generation are especially vulnerable to high and volatile oil prices.

How is the risk burden of price volatility distributed? In a controlled energy-pricing environment with fixed consumer prices, the utility tends to absorb variations in price inputs. Conversely, in a free-market pricing environment, with a full pass-through mechanism, price shocks are passed along to consumer households and businesses.
Most countries exhibit varying degrees of risk sharing between consumers, the utility, and government. For example, the government might cap the electricity price for final consumers, making the utility company bear the cost of price increases. But this situation may not be sustainable, as the company may eventually face bankruptcy. If that should occur, the government might have to choose between bailing out the utility or risking power-supply shortages.

When general subsidies—especially those accounting for a significant share of government outlay—are used to eliminate the impact of price volatility, the result may be a deterioration of the fiscal balance. Even if the government manages to maintain fiscal balance, the larger share of subsidies in government expenditure means less capacity for capital investment, as well as social programs.

For most of the countries analyzed in this study, consumers are shielded to varying degrees by tariffs with embedded generalized subsidies. Because tariff increases are often insufficient to cover rising generation costs, the financial position of the utilities may deteriorate. This has been the case for the Dominican Republic, Haiti, and Honduras. A full pass-through power-pricing policy is in effect in The Bahamas and St. Vincent and the Grenadines—where the government is the majority owner of the power utility—and in Barbados, Dominica, Grenada, Jamaica, and St. Lucia—where the private sector is the majority owner. This policy is more sustainable in the long run as it forces consumers to eliminate waste and then seek pathways to improve consumption efficiency. Guyana’s move from a partial to a full pass-through regime in 2008 highlights the trade-offs of such decisions on final users and the regulatory implications for managing volatility. As a result of that decision, volatility impact is born by final users, but financial sustainability of power companies is not threatened.

REDUCING SHORT-TERM PRICE UNCERTAINTY: PRICE RISK MANAGEMENT

One option for managing oil price volatility in the short term is to use price risk-management instruments. Such tools can reduce the uncertainty associated with commodity-price volatility, particularly its impact on national budgets in a given year by managing existing price volatility, which is generally a function of current structural conditions in the market explained by imbalances between supply and demand. Risk management, or hedging, instruments are designed to cope with volatility—price spikes or shifting prices with no unidirectional trend—which has a financial impact because the existing price volatility results from the structural conditions of the oil market.

A critical first step for any country considering a commodity hedging strategy is careful risk assessment, which needs to take into consideration commercial relationships in the power sector and interactions with public sector actors and policy mechanisms.

Additionally, power-sector actors considering price risk management should focus on establishing an institutional framework that adequately supports implementation of the strategy. Setting up a commodity hedging strategy includes the following key steps:
• Documenting risk management objectives;
• Establishing roles and responsibilities of the actors and agencies;
• Verifying adequate legal and regulatory infrastructure;
• Setting up procedures for selecting counterparties and brokers; and
• Providing careful oversight, supervision, and reporting.

Particular challenges for the Caribbean include:

• Building capacity. This step covers capacity building of staff, stakeholders, and key decision-makers in the Caribbean; and
• Establishing robust institutional arrangements among the different agencies and at every stage in the process.

The government of Dominican Republic is interested in implementing these options but has not done so yet. Other countries in the region are less advanced in the elaboration of such a strategy.

REDUCING DEPENDENCY: ALTERNATIVES TO OIL CONSUMPTION OVER THE LONG RUN

However, price risk management instruments cannot substitute for basic structural measures designed to reduce oil consumption over the longer term. To reduce vulnerability in the long run, countries should think about structural instruments such as: (i) energy portfolio diversification, (ii) investing in energy efficiency, and (iii) increasing regional integration with countries endowed with more diversified supply.

Diversifying away from Oil-Fired Power Generation

By diversifying the power generation matrix, countries become less vulnerable to oil prices and reduce the risk associated with oil price volatility. Today, oil-importing countries have a wide array of choices—both renewables and non-oil conventional energy sources—for diversifying their energy generation portfolios away from oil. In particular, the sub-regions of Central America and the Caribbean have three groups of alternatives that could be developed: (i) hydropower, (ii) non-hydro renewable power (geothermal, biomass, wind, and solar), and (iii) non-oil conventional thermal power (natural gas). Wind and geothermal resources, in particular, are already being evaluated. In general, hydropower resources are the best understood, having been the most widely used for decades. However, in most Caribbean island nations (with the partial exception of the Dominican Republic), existing hydropower output is quite small and the remaining potential either insignificant or non-existent. On the other hand, the potential for increased use of non-hydro renewables is significant. Biomass, in the form of sugarcane bagasse, could offer immediate output gains as long as appropriate retrofitting is put in place. From a policy perspective, geothermal could potentially help to diversify the power system, although from a financial perspective, high initial exploration costs make it less attractive. Other non-hydro options include wind and solar energy. In addition, non-oil conventional thermal power, particularly natural gas (and coal to a lesser extent), could help to reduce oil dependency, given their low price correlation with oil. The countries with the greatest potential to initiate LNG consumption are the larger countries of the region, Haiti, Jamaica, and Barbados. Given its existing LNG import facility, the Dominican Republic is well positioned to expand consumption, once it resolves some legal issues.
Improving Energy Efficiency

Investing in energy efficiency, both in the production of electricity (supply side) and in its consumption (demand side), is one of the most cost-effective ways to reduce the need for oil and oil-derived products. On the supply side, reducing technical losses contributes to improving overall system efficiency and conserving fuel; thus, it is considered an instrument that directly mitigates exposure to oil price volatility. It is difficult to assess technical losses and thus the potential to reduce them, in the Caribbean, since only aggregate-loss data are available for most countries in the region, and existing information on energy end uses and subsectors in the Caribbean is also spotty.

**Figure 7.1 Energy Savings Potential in Selected Countries of Central America and the Caribbean**

Supply-side technical losses can be reduced by modifying system characteristics and configurations. These losses can also be reduced by carefully choosing transformer technology, eliminating transformation levels, switching off transformers, improving low-power factors, and distributing generation. On the demand side, reducing peak and non-peak use helps to reduce the generation capacity and transmission and distribution assets required to supply the system. Demand-side efficiency can be improved by adopting policies and programs that encourage efficient electricity consumption by end users. Measures that could be expanded in the countries analyzed in this study include standards for widely-used industrial equipment and residential appliances; building codes; consumer education and demonstration programs; and energy management programs for industry, the building sector, and public utilities.

**Promoting Regional Integration**

*Regional energy integration can also help countries to reduce oil dependence by optimizing electricity supplies across the region, which improves efficiency and, owing to economies of scale, lowers generation costs.* In addition, when the consumption profiles of participants are not perfectly correlated, the smoother load pattern that arises means less investment in reserve requirements. If these conditions are met, use of fossil fuels, along with countries’ vulnerability to high and volatile oil prices, declines. Furthermore, from a market perspective, regional integration promotes competition, helping to realize the trade gains associated with specialization of the most efficient producers. Moreover, all such benefits imply a reduction in greenhouse gas (GHG) emissions.

Although the potential for interconnection in the Caribbean is more limited than in Central America—owing to the high cost of needed submarine cables and small market size, which reduces economic viability—electricity integration could nevertheless significantly reduce dependence on oil-fired
Promoting Energy Integration in the Caribbean - A recent study by Gerner and Hansen (2011) evaluated potential opportunities for energy integration in the Caribbean:

- **Renewable energy.** Resources found to have the greatest interconnection potential are natural gas (pipeline and liquefied natural gas [LNG]), geothermal, wind, small hydropower, and biomass. All are highly competitive with technologies currently in use. A key challenge is to identify sites with good resources that are economically feasible.

- **Electricity interconnections using submarine cables.** Interconnecting the various islands using submarine cables would improve efficiency and increase electricity sector security. Also, it would enable more large-scale energy generation using renewables. The level of interconnection could be sub-regional, continental (e.g., linking parts of the Caribbean with Mexico, Colombia, or Venezuela), or bilateral (e.g., Montserrat-Antigua and Barbuda, or Puerto Rico and the Dominican Republic).

- **Gas pipeline interconnections.** The study finds that supplying natural gas through the proposed Eastern Caribbean Gas Pipeline might be cheaper than current diesel-based generation. Natural gas from Trinidad and Tobago could supply Barbados, Guadeloupe, Martinique, and St. Lucia at a competitive price. If the islands are interconnected, the pipeline could take advantage of economies of scale owing to the large volumes of gas transported. In order to be implemented, however, the project must first win consensus among diverse stakeholders, ranging from gas suppliers, utilities, and regulators to financial institutions and governments.

The components of this three-pronged strategy—a more diversified energy supply system, including greater utilization of available renewable sources; improved efficiency in electricity production and use; and regional integration, which promotes energy diversification—can work together over the long term to effectively reduce a country’s oil generation and consumption and thus mitigate its vulnerability to high and volatile oil prices. Implementing these structural measures in a combined strategy would mean significant savings for heavily oil-dependent countries. At the country level, Guyana and Nicaragua could witness a reduction in their current account deficit of up to 5 percent of GDP; while the reductions for Haiti and Honduras would be 3.5 and 2.9 percent of GDP, respectively (Yepez and Dana, 2012).
HOW MUCH CAN IT HELP?

The components of this three-pronged strategy—a more diversified energy supply system, including greater utilization of available renewable sources; improved efficiency in electricity production and use; and regional integration, which promotes energy diversification—can work together over the long term to effectively reduce a country’s oil generation and consumption and thus mitigate its vulnerability to high and volatile oil prices. Implementing these structural measures in a combined strategy would mean significant savings for heavily oil-dependent countries. At the country level, Guyana and Nicaragua could witness a reduction in their current account deficit of up to 5 percent of GDP; while the reductions for Haiti and Honduras would be 3.5 and 2.9 percent of GDP, respectively (Yepez and Dana, 2012).

Potential Fuel Savings from Implementing Structural Measures, as a percent of GDP, 2009

Source: Authors
At a macro level, less oil consumption can directly improve a country’s aggregate economy and directly and indirectly benefit government finances and balance of payments. At a micro level, the decrease in vulnerability to oil price risk resulting from lower consumption can facilitate investment planning and consumer decision-making. Complementary to these structural measures, price risk management instruments may further mitigate exposure to the shorter-term economic uncertainty created by oil price volatility, which also affects investment and planning decisions by households and firms.

This optimistic outlook is not without its challenges. Making such a structural transition would entail considerable upfront costs to utilities, firms, and households; thus, supportive policies and regulations for renewable energy and energy efficiency would be required. In the case of the LAC region, regulatory, contracting, and licensing processes would need to be reformed to allow countries to implement their plans. The use of financial instruments that make these investments more attractive would be particularly helpful. Pricing reforms and technology standards would be needed to ensure that resources are not wasted. In addition, an appropriate regulatory framework and institutional strengthening would be required to facilitate regional integration between countries with differing regulatory policies and power-sector institutions. But the potential benefits from implementing these measures far outweigh the costs. Given the far-reaching adverse effects of high and volatile oil prices on oil-importing economies, the potential savings from implementing the measures suggested in this report could offer substantial benefits at the macro and micro level, ranging from the long-term financial viability of the national economy to a higher living standard for households.
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PROMOTING GROWTH IN THE CARIBBEAN: GEOTHERMAL RENEWABLE ENERGY

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ABSTRACT

The power sector is integral to economic development and inclusive growth in the Caribbean Region. The high cost of electricity is undermining the Region’s competitiveness and growth, and creating hardship for citizens. Unlocking the Caribbean Region’s geothermal potential for power generation can promote growth by reducing the cost of electricity, while also enhancing energy security, improving environmental sustainability, and creating opportunities for greater regional integration. Despite this potential, geothermal resources remain mostly untapped. Preliminary assessments indicate significant unexploited geothermal potential, especially in the Eastern Caribbean, that could supply baseload power for local markets and beyond. Increased use of geothermal energy would also provide environmental benefits, increase energy security and improve the balance of trade. This paper outlines some of the factors that need to be taken into account for successful development of this sector, and argues that the public sector can help reduce investor risks and mobilize funds, particularly at the early stages of development, which can catalyze greater private financing for subsequent stages.


INTRODUCTION

Unlocking the Caribbean Region’s geothermal potential for power generation can promote growth by reducing the cost of electricity, while also enhancing energy security, improving environmental sustainability, and creating opportunities for greater regional integration. The power sector is integral to economic development and inclusive growth as it fuels the productive sectors of the region’s economy. However, the high cost of electricity is undermining competitiveness and growth, and creating hardship for residential customers. The reason for the high cost of electricity is largely due to over-reliance on expensive, imported fuel oils for power generation. A switch to cheaper options with less volatile prices is needed to lower costs in order to improve business competitiveness and growth. Preliminary assessments indicate significant unexploited geothermal potential, especially in the Eastern Caribbean, which could serve as an alternative source of power generation to supply local and regional markets.

Despite this potential, geothermal resources remain mostly untapped. Challenges such as the underlying resource risks, difficulty in securing financing, limited regional geothermal expertise, and the small and isolated nature of existing power systems makes it difficult to develop these resources. The public sector can play a key role in addressing these risks, mobilizing financing, attracting credible developers, and promoting greater regional integration to speed-up and scale-up geothermal development and catalyze greater private investments.

This paper is organized as follows. The first section discusses the rationale and need for more stable and lower cost electricity in the Caribbean. Next, the paper describes how geothermal resources provide an opportunity to diversify and optimize the power generation mix. Finally, the key challenges to developing geothermal as a viable power generation option and opportunities for addressing these obstacles are presented.
THE NEED FOR MORE STABLE, LOWER COST ELECTRICITY IN THE CARIBBEAN

The power sector is integral to economic development and inclusive growth in the Caribbean Region. The Caribbean economies are making efforts to rebound from the recession the region faced between 2008-10, and while some countries have begun to post some sluggish yet positive growth, others have continued to contract. Economies that rely on significant tourism have been particularly hard-hit, as it, along with the associated construction and transportation sectors, make up a substantial share of the Gross Domestic Product (GDP) of many island economies. Services are another key driver of economic activity, particularly in the countries that are a part of the Organization of Eastern Caribbean States (OECS), where they can account for 70 percent or more of GDP. In addition to the considerable hardships that many of the economies that rely on tourism and services have faced during the recent global economic slowdown, structural challenges in many islands have made it difficult for them to adapt. Key challenges include high levels of external debt, challenges accessing finance, and the extremely high cost of electricity.

The high cost of electricity is undermining the Region’s competitiveness and growth, and creating hardship for citizens. Electricity tariffs in the Caribbean region are among the highest in the world. This is reflected in the fact that businesses in the Caribbean region cite electricity as the second most significant obstacle to successful operation, only surpassed by challenges they face in accessing finance, as illustrated in Figure 1. Since electricity costs are a less significant obstacle for the rest of the Latin America and Caribbean (LAC) region, this creates a regional competitive disadvantage for Caribbean businesses. As an example, the Caribbean Hotel Energy Efficiency Action Program (CHENACT) benchmarks (2012) indicate that a guest night in a 50-100 room hotel in the OECS region can include as much as $14 to $18 in electricity costs. Given that tourism is a key economic driver in the region, such costs will make it harder for Caribbean countries to compete for tourist revenues. Hardship resulting from expensive electricity is not limited to businesses: it impacts ordinary citizens as well. Given that average residential consumers utilize anywhere from about 113 kWh (Dominica) to 173 kWh (Jamaica) in developing islands in the Caribbean, at prevailing tariffs, poor households can spend as much as 7 to 11 percent of their income on electricity. Since the poor represent anywhere from 20-40 percent of the population in most developing countries in the Caribbean, the high cost of electricity imposes a considerable and disproportionate burden on the poor.

Figure 1: Constraints to business success (Percent of Firms)

![Figure 1](image_url)


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31 This is true mainly for the commodity exporting countries of Belize, Guyana, Suriname, and Trinidad and Tobago.
32 The East Caribbean Currency Union (ECCU) saw output fall by 0.71% in 2011, according to the Caribbean Development Bank (2012).
33 Consumption for one night in a hotel room averages 44 kWh of electricity, at tariffs that range from US $0.32-0.40 cents.
34 Defined by Economic Commission for Latin America and the Caribbean (ECLAC) as the households at or below the poverty line (monetary measure of the minimum consumption expenditure that is needed to meet basic food and non-food requirements of an average adult at prevailing prices).
The high cost of electricity is largely a result of the Region’s heavy reliance on expensive, imported fuel oil and diesel for power generation. In 2012, around 95 percent of the electricity produced in the Caribbean region was from fossil fuel sources, according to Castalia (2012). While a few islands utilize coal, natural gas, and hydroelectric power, the majority of the islands primarily use expensive imported diesel or heavy fuel oil to generate electricity. This is particularly true for islands that are members of the OECS, as they do not have domestically available fossil-based resources and the relatively small size of each power system does not allow them to import coal or gas economically. Although hydropower, biomass, wind and solar are available options that can be useful in some of the islands, these renewable resources are intermittent and seasonal (in case of hydro and biomass), making them unsuitable to meet base-load requirements throughout the year.

The high cost of diesel and fuel oil in power generation is often directly passed through to businesses and residential customers alike through the electricity tariffs. For instance, in 2011, the fuel pass-through represented between 45 to 65 percent of electricity revenues in several OECS countries. Where governments cushion this impact through subsidies, the fuel costs create fiscal burdens that are also unpredictable given the volatility in international prices for petroleum products. The unpredictability of electricity costs makes it difficult for businesses and households to plan for future investments and expenditure as well.

### GEOTHERMAL PROVIDES AN OPPORTUNITY TO DIVERSIFY AND OPTIMIZE THE POWER GENERATION MIX

It will be important to diversify the generation mix of power systems in the Caribbean and enhance energy efficiency in order to lower costs and increase reliability as a means towards improving business competitiveness and promoting shared economic growth. A significant shift away from utilizing costly fuel oil and diesel is essential, as well as moving towards a more optimized generation mix. Renewable energy presents a useful way forward. When combined with measures to enhance energy efficiency, which reduces energy intensity and therefore demand for electricity, expanding renewable energy supply can provide a lower cost solution that will boost the regions’ competitiveness.

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35 Calculated as fuel cost divided by electricity revenues, based on information from utilities’ annual reports. Cost-reflective tariffs are assumed to be a proxy for total cost of supply.

36 Dominica, Grenada, St. Lucia, and St. Vincent and the Grenadines.
Unlike fossil fuels that largely need to be imported, many Caribbean islands, especially in the OECS, possess a rich endowment of renewable energy potential, including hydro \(^{37}\), solar, wind, biomass, and geothermal. Several countries already generate electricity from these resources. However, most of these resources are either intermittent or seasonal, making them poor substitutes for base-load generation \(^{38}\). Geothermal is an ideal renewable technology that, once developed, can operate reliably on a 24/7 basis. It is a clean energy option that will significantly reduce local and global environmental impacts; and where it is indigenous, geothermal power can serve as a natural hedge against the volatility of petroleum based commodity prices.

**Figure 3: Preliminary geothermal potential estimates in the Eastern Caribbean**

**Box 1: Geothermal development in Guadeloupe**

The 15MW La Bouillante plant in Guadeloupe is the only geothermal power plant in operation in the Caribbean. The initial reconnaissance work was undertaken by the French Bureau of Geological and Mining Research, which helped establish the presence of an exploitable resource at La Bouillante. In 1980, Electricité de France (EDF) constructed a 5MW power plant, which was later expanded to 15 MW of capacity in 2004. The initial 5MW operation performed well with average availability as high as 95 percent. Repairs to the site’s foundations and the installation of a brine reinjection system to preserve the geothermal resource quality have reduced its availability in more recent years. However, the repairs are expected to eventually increase the plant availability.

EDF is considering further expansion of the La Bouillante operation by possibly adding an additional 30 MW. EDF is also considering importing electricity generated from geothermal resources in the neighboring island of Dominica through an under-sea transmission line.

**Source:** Alstom (2012); EDF (2012); International Energy Agency (2010a, 2010b); Commission de régulation de l’énergie (22 juillet 2010).

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\(^{37}\)Mostly small run-of-the-river hydro, with the exception of the Dominican Republic and other isolated instances where there are large hydropower stations with storage (reservoir).

\(^{38}\)Power stations are designed to operate continuously throughout the day.
Preliminary assessments indicate significant unexploited geothermal potential, especially in the Eastern Caribbean, that could supply base-load power for local markets and beyond. The Caribbean’s volcanic geology has created many geothermal features, especially in the OECS region. Figure 3 identifies seven Eastern Caribbean islands where there is initial evidence of geothermal power generation potential, which could be confirmed with further exploration. Despite this potential, only the French territory of Guadeloupe has developed its geothermal resource by installing the 15MW La Bouillante power plant that is in operation. Although estimates of actual potential vary considerably since much of the geothermal resources in the region are unexplored, expert opinion suggests that the commercially exploitable potential can be as much as 850 MW in the Eastern Caribbean islands depicted in Figure 3, which exceeds the 770 MW of total current installed capacity from all generation technologies in these same Eastern Caribbean islands. Dominica likely has the largest potential with a number of geothermal fields that can be progressively developed. Confirmed resources at the WottenWaven/Laudat field alone far exceed the generation capacity that can be reliably absorbed by the relatively small power system in Dominica. There are several other islands in the region, where estimated geothermal potential exceeds the relatively small base-load requirement in the respective domestic market. Several islands are exploring options for exporting electricity generated by geothermal sources to neighboring islands through undersea transmission lines. Such efforts could lead to regional integration of power systems within the OECS that would create new markets for trading electricity. Over the long-term, integration across the wider Caribbean region might be possible, allowing reliable and cost-effective generation to benefit the entire region, not just the islands endowed with geothermal resources.

Greater integration of geothermal power in the generation mix can reduce the overall cost of electricity supply making it more affordable, while enhancing energy security, improving resilience, and providing local and global environmental benefits.

Reducing the cost of electricity—Geothermal electricity generation costs have been observed to be as low as 5-10 US cents per kWh, as illustrated in Figure 4. It is likely that the cost of developing geothermal in the OECS islands will be higher for a number of reasons. Most countries will be attempting to develop geothermal for the first time with limited experience. The initial developments are likely to be modest in size to match domestic requirements, which will reduce potential for economies of scale. The cost of financing large investments in relatively small economies can also be high. However, as Figure 4 illustrates, even if the cost of geothermal electricity generation were doubled to 20 US cents per kWh, it would still be an attractive lower-cost option compared with the high tariffs customers face today in many OECS countries.
Working as a natural hedge against commodity price volatility—As Figure 5 illustrates, electricity tariffs in the Caribbean have followed a path similar to the price of oil, which is determined by international markets. This has led to a significant rise in electricity tariffs over the past decade, mirroring the overall increase in international oil prices, which reached historical highs during the same period. During this period, oil prices have also been volatile causing the electricity tariffs to fluctuate. Such volatility and uncertainty create significant challenges for businesses as they find it difficult to plan future investments and other important functions. In contrast, geothermal generation capacity, once developed, can supply electricity reliably at a steady price, reducing the vulnerability of businesses and households to electricity price shocks.

Increasing energy security and improving the balance of trade by reducing oil imports—Figure 6 shows that over 200 MW of geothermal capacity could be absorbed into the power systems of Eastern Caribbean countries over the next decade based on base-load estimates and geothermal resource potential. As an indigenous resource, the development of geothermal would enhance energy security by displacing an estimated 2.7 million barrels of fuel oil and diesel imports each year. If the international price of oil is $80-$110 per barrel, it would result in total annual savings between $200-$300 million, as indicated in the table in Figure 6.

Environmental benefits through reduction of greenhouse gas emissions and local pollution—Geothermal is a cleaner, renewable power generation option that emits only about 10 percent as much carbon dioxide (CO₂) as diesel generation (Fridleifsson, Huenges, Lund, & Rybach, 2008). Based on potential geothermal generation estimates in Figure 6 and the potential displacement of diesel and fuel oil generation, the estimated reduction in CO₂ emissions would be approximately 1.3 to 1.6 million tons per year. This reduction in greenhouse gases would contribute towards mitigation of global climate change impacts. Generating geothermal power can also benefit the local environment. Geothermal power plants release less than 1 percent as much sulfur dioxide (SO₂) as the cleanest fossil fuel generation, and do not emit any nitrogen oxide (NOx) or particulate matter (Boyle, 2004; and Kagel et al. 2007). Limiting local pollution and maintaining a clean environment are important for sustaining tourism, a key driver of economic growth.

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Dominica estimate includes electricity exports to Guadeloupe and/or Martinique.
Figure 6: Illustration of potential geothermal benefits – Electricity, fuel savings, & avoided CO2

<table>
<thead>
<tr>
<th>Island</th>
<th>Est. peak and base load demand in 2023&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Est. geothermal capacity in 2023&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Est. annual geothermal electricity generation&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Est. annual savings from avoided fuel imports&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Est. annual avoided greenhouse gas emissions&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MW</td>
<td>MW</td>
<td>GWh/year</td>
<td>US$M/year</td>
<td>mil tCO₂e/year</td>
</tr>
<tr>
<td>Dominica</td>
<td>27</td>
<td>16</td>
<td>115&lt;sup&gt;f&lt;/sup&gt;</td>
<td>907</td>
<td>$109-150 M</td>
</tr>
<tr>
<td>Grenada</td>
<td>49</td>
<td>29</td>
<td>29</td>
<td>229</td>
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<tr>
<td>Guadeloupe</td>
<td>371</td>
<td>222</td>
<td>20</td>
<td>158</td>
<td>$19-26 M</td>
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<tr>
<td>Montserrat</td>
<td>4</td>
<td>2</td>
<td>16</td>
<td>1.9-2.6 M</td>
<td>$24-33 M</td>
</tr>
<tr>
<td>Nevis</td>
<td>52</td>
<td>31</td>
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<td>51</td>
<td>30</td>
<td>237</td>
<td>$28-39 M</td>
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<tr>
<td>St. Vincent</td>
<td>43</td>
<td>26</td>
<td>10</td>
<td>79</td>
<td>$9-13 M</td>
</tr>
<tr>
<td>Totals</td>
<td>231</td>
<td>1,822</td>
<td></td>
<td>$219-301 M</td>
<td>1.32 – 1.61</td>
</tr>
</tbody>
</table>

<sup>a</sup> Demand estimate for illustration, peak load forecast based on recent growth rates, base load assumed to be equal to 60 percent of peak demand

<sup>b</sup> Future geothermal installed capacity is assumed to be the lesser of base-load estimate or potential geothermal capacity;

<sup>c</sup> Assumes 90 percent capacity factor for geothermal power plant operation.

<sup>d</sup> Assumes generation efficiency of 19 kWh per imperial gallon of fuel (based on LUCELEC’s efficiency as reported in annual reports); and oil prices of US$80-US$110 per barrel.

<sup>e</sup> Based on emissions factors of 91 grams per kWh for geothermal and 893 grams per kWh for fuel oil based generation, and range of +/- 10 percent.

<sup>f</sup> For Dominica, estimated geothermal capacity exceeds domestic base-load needs due to assumed electricity exports to Guadeloupe & Martinique.

Although Guadeloupe is the only island with a geothermal power plant in operation, there are preparation activities underway in a number of the Eastern Caribbean islands to try and exploit the benefits of geothermal power.

- **Expanding existing operations**—Guadeloupe is considering expanding the installed capacity of its existing 15 MW power plant at La Bouillante (Electricité de France EDF, 2012), while, it is also considering, together with Martinique, the possibility of importing geothermal electricity from Dominica.

- **Geothermal drilling**—a private developer drilled exploratory wells on Nevis in 2008 (SKN Vibes, 2008), but the island administration is now seeking a new development partner (Think Geoenergy, 2013). Dominica has completed the drilling of three exploration wells, and is poised to advance to the production drilling phase (The Government of the Commonwealth of Dominica, n.d.; The World Bank, 2013). It is evaluating options for trading electricity with neighboring islands. Montserrat also has exploration drilling activities underway (Caribbean Journal, 2013). Some exploratory drilling took place in St. Lucia in 1988 (Batoletti, 1999), but activity since then has been very limited. ⁴⁰

⁴⁰ In 2010 the Government and US-based company Qualibou Energy signed a development agreement, with interim funding for pre-construction activities announced in 2011; but no progress has been reported since.
funding the exploration drilling. Investors are also often reluctant to fund this early stage of development, since the project will not be in a position to produce electricity and earn revenues for several years, even when projects are predicted to be viable. As a result, private project developers face considerable financial exposure that severely constrains their capacity to undertake quick and significant expansion of green field geothermal prospects. Since geothermal resource risks are a common characteristic of the technology, many other countries with geothermal resources have grappled with addressing this barrier in order to develop the sector.

A recent global survey commissioned by the World Bank, and conducted by GeothermEX (2010) confirms that the role of the public sector, in particular, to incentivize developers and catalyze investments during the early stages of development, has proved to be critical in successful geothermal expansions. Government interventions have varied, and have included a range of options including extending resource risk financing, public sector resource confirmation prior to granting a concession to private developers, open access to early stage surface level reconnaissance work, establishment of risk insurance facilities, and loan guarantees, to name a few. When implemented successfully, they have proven to be vital in attracting private investments, and scaling-up and speeding-up geothermal development. In almost all instances, there was some form of public support, especially at the early stages, which helped reduce investor risks and mobilize financing for developing the sector.

Box 2: Geothermal development in Dominica

Preliminary estimates suggest that Dominica has the largest exploitable geothermal resources in the Caribbean due to the volcanic geology of the island. Of the several potential sites, the Wotten Waven/Laudat (WW/L) field in the Roseau Valley is the most advanced in terms of preparation, although the development has not reached the stage of power generation yet. Several development partners, including the World Bank are supporting the Government of the Commonwealth of Dominica (GoCD) with this effort. The GoCD is interested in attracting a reputable private investor to develop the WW/L project, but saw the need to provide enough confidence to prospective developers regarding the sufficient availability of the steam resource as well as the commerciality of the investment. Therefore, the GoCD, with the support of development partners, undertook surface level reconnaissance work and drilled three exploration wells at WW/L field. This effort has had a significant impact. It has helped confirm the existence of the resource and work is now underway to prove its commercial viability. The GoCD is also making efforts to ensure that the development is undertaken in line with industry practices and compliant with international standards – something vital for the “bankability” of the WW/L project. As a result of this ongoing work, there has been interest from international developers to participate in the operation, and discussions are underway, not only to construct a small power plant to meet domestic needs, but also to scale-up development for exporting electricity to neighboring islands of Guadeloupe and Martinique.

Attracting credible and experienced developers is essential for developing the resources in line with proven industry practices, and in compliance with international standards. Given the limited geothermal experience in the Eastern Caribbean islands, it will be important to attract globally experienced geothermal developers who have the technical and financial capacity to efficiently exploit the resource. In a number of cases, improper adherence to common industry practices has led to excessive depletion of the steam resource and degradation of the field causing permanent damage. Examples of such instances include the Geysers field in the USA and the Momotombo field in Nicaragua. Given the nascent state of development and the relatively small scale of the projects, it may be challenging to attract top global developers to partake in the Caribbean geothermal investments. The overall investment climates can also deter investors from some countries. Therefore, it will be important to have a credible process for selecting developers and awarding concessions in a fair and transparent manner in order to attract experienced developers.

Following successful geothermal resource confirmation, there will be a continued need to mobilize greater levels of financing to complete the development of this resource. Once geothermal resources are confirmed in a field, risks decline and greater certainty regarding the overall viability of the development exists. However, the amount of financing that is required for implementing the next stage of development can be significantly higher, particularly for larger developments. Unlike conventional power schemes, geothermal development requires funding to develop the upstream steam field as well as the downstream power generation operations. Comparatively, it requires more up-front financing than a conventional power project, which can lead to high, and in some cases prohibitive, financing costs to cover the production drilling, to develop the steam gathering system, and to construct the power plant. A 20-30 MW development may require anywhere from $70-$150 million in financing depending on a number of factors; while the total private investment in the entire energy sector in the Caribbean countries depicted in Figure 8 has averaged no more than $125 million per year.

If the commodity exporting countries with larger economies and more robust growth are excluded, then the selected OECS countries included in Figure 8 have only managed to attract a mere $17 million per year on average in private financing in the energy sector over the past five years. Therefore, it will be a challenge for many of the OECS countries to mobilize the necessary financing in order to develop their geothermal resources. As an example of the challenge they face, the relatively large power plant for export in Dominica may require financing that is comparable to the entire GDP of the country. Furthermore, the limited availability of financing will likely require developers to contribute more equity in order to carry out investments while looking to leverage commercial financing, when available. The Governments in the region can also finance some undertakings, but high national debt levels in many Caribbean countries will likely limit such contributions to leverage financing.
Special consideration is needed for integrating geothermal power into relatively small and isolated island systems in the Eastern Caribbean. The small scale of the electricity networks will pose a number of challenges, including limiting the ability to absorb geothermal capacity, requiring smaller unit sizing in power plants and adequate backup to maintain system reliability, and the need to strengthen existing transmission and distribution networks to accommodate the influx of geothermal power. It will also be important that the policy and regulatory environment is adequately designed to integrate geothermal power. Developers will want to ensure that their investments are secure, that they can receive a return commensurate with the costs and risks associated with the development, and that there is sufficient recourse should issues arise. It is also common for investors to seek agreement regarding the power off-take and pricing. These and other factors that enhance the overall investment climate in the sector will be crucial for mobilizing private investments to develop the geothermal sector.

Inter-island transmission interconnections provide an opportunity to exploit the Eastern Caribbean’s full geothermal potential; and promote regional integration. The small size of the power systems in most Eastern Caribbean islands do not allow the full geothermal potential of the region to be exploited. However, this challenge could be overcome by integrating regional power markets through the development of transmission interconnections. Figure 9 shows a submarine transmission link to connect Guadeloupe and Martinique to Dominica that is being actively considered to exploit the full potential in the WottenWaven/Laudat geothermal field and beyond. Nevis and Montserrat may also have geothermal potential in excess of domestic needs, and may benefit from an interconnection with other islands.

However, developing and operating submarine transmission lines can be costly and complex, likely requiring international expertise that is not available regionally. Moreover, interconnecting different jurisdictions will require regional cooperation. Although no transmission interconnections exist in the Eastern Caribbean today, the future may bring greater energy trade and regional cooperation.

Geothermal development is largely beneficial for the environment and local communities—and following industry practices and international standards will adequately address its potential impacts. Geothermal is a clean, renewable energy that is environmentally friendly with generally positive impacts. However, as with the development and operation of any power plant, it will be important to comply with internationally accepted environmental and social standards such as the Equator Principles. This will ensure that potential water, air quality, noise, and other impacts are adequately addressed so that investments continue to be sustainable. Internationally compliant safeguards practices are also an integral part of a project’s “bankability” as financial institutions are increasingly requiring compliance with such practices. Therefore, it will be important for each jurisdiction to mandate its own environmental and social standards based on international best practices; and monitor projects to ensure compliance with those standards by project developers.
CONCLUSIONS

Integrating geothermal power into the Caribbean Region’s power generation mix can reduce electricity costs and stabilize prices - increasing affordability and predictability for businesses and households; and enhancing energy security and resilience by utilizing an indigenous resource that will reduce dependency on imported fuel oils, provide environmental benefits, and can help promote greater regional integration. Preliminary assessments indicate that the Region is richly endowed with geothermal resources, especially in the Eastern Caribbean, but most of these resources remain unexploited.

A number of challenges, some of which are intrinsic to geothermal development and others that are specific to the Caribbean Region, have prevented greater geothermal exploitation. All developers face challenges because of uncertainty surrounding the availability of geothermal resources. Such risks also make it difficult to secure funding for the early stages of development and also to mobilize greater amounts of financing for subsequent stages of development. This is particularly the case in the Caribbean Region where most of the geothermal resources are not yet commercially proven (despite indication of potential), regional expertise in the development of geothermal energy is limited, as are the flows of private funds needed to develop this resource. Furthermore, the small and isolated nature of the Region’s power systems limits the size of geothermal plants and their ability to fully achieve economies of scale.

As shown by successful geothermal developments worldwide, the public sector can help reduce investor risks and mobilize funds, particularly at the early stages of development, which can catalyze greater private financing for subsequent stages. Attracting credible and experienced developers will also be essential to ensure that geothermal projects are carried out in line with proven industry practices, and that they comply with international standards. In order to fully exploit the region’s viable geothermal potential and take advantage of economies of scale, greater promotion and investments in regional integration of the power sectors will also be needed. Both the public and private sector can play a key role in advancing geothermal development in the Caribbean Region, which can in turn foster economic growth and enhance regional competitiveness.
REFERENCES


PROMOTING GROWTH IN THE CARIBBEAN: TAX INCENTIVES IN THEORY AND IN PRACTICE

Martin Bes and Daniel Alvarez-Estrada*
ABSTRACT

The recent international financial crisis, which reduced demand for the financial services and tourism, greatly reduced growth prospects in the Caribbean. Policymakers have begun analyzing the possibility of offering tax incentives to encourage private investment to improve growth prospects. This policy note analyzes this possibility. It points out that there is little evidence that tax incentive policies have not been shown to increase private investment, or economic growth, and cannot be a substitute for structural reform. If a tax incentive policy is being considered, it should target the Corporate Income Tax, by means of an accelerated depreciation allowance tax filing should always be required, and incentives should be limited to export-oriented activities.

*World Bank Consultant, and Senior Public Sector Specialist, LCSPS, World Bank, respectively.

INTRODUCTION

The recent international financial crisis dealt a hard blow to growth prospects in the Caribbean, being reflected in reduced demand for financial services and tourism as well as falling remittances. This was combined in some cases with home grown macroeconomic imbalances and the need to face the costs of financial sector bailouts in other countries. Counter cyclical policy response has been limited, since countries in the region do not enjoy sufficient fiscal space and debt levels in some of them are at worrisome levels. More recently, policymakers have indicated the need to explore the use of tax incentives to foster much needed private investment. This Policy Note analyzes the issues associated with the use of tax incentives and reviews the challenges faced by the region, which has not been completely successful in the past in controlling tax expenditures.

The Policy Note is organized as follows. The first section explores the diverse nature of the Caribbean and Latin American group of countries discussed in this note: The Bahamas, Barbados, Belize, the Dominican Republic, Guyana, Haiti, Jamaica, Suriname, and Trinidad and Tobago. This is followed by a word of caution regarding the emphasis on factor accumulation in explaining growth, dampening beforehand any unrealistic expectations regarding growth promoting tax incentives.

A brief analytical review of the main direct and indirect tax instruments is included in section 3. Finally, while studies of tax expenditures in Caribbean economies are not infrequent, very little empirical work has been carried out in the region regarding their role in promoting investment and the effect of such investment on growth. Section 5 will then review the experiences of some countries with tax incentives policies. A brief set of Recommendations closes the document.
RECENT ECONOMIC DEVELOPMENTS IN THE SELECTED GROUP OF CARIBBEAN COUNTRIES

While the Caribbean and Latin American countries included in this Chapter share many cultural, historical, economic and geographic characteristics, they show some striking differences as well. Their similarities include the fact that most of these countries are island states, and all are vulnerable to natural disasters. They are also mostly small countries in terms of territory and population, though there are outliers regarding both variables: Guyana and Suriname, two countries located in South America have large, if sparsely populated, territories; and the Dominican Republic and Haiti have over 10 million inhabitants each, overshadowing the rest of the countries being considered. Living standards are high in The Bahamas, Barbados and Trinidad and Tobago as measured by the UNDP’s annual Human Development Report. With the exception of Haiti, who is ranked at the low-end of human development indicators, the countries discussed in this policy note are ranked in the middle of human development indicators.

Tourism, financial services, and natural resources are the dominant economic activities. The Bahamas and Barbados are specialized in high-end tourism and financial services while Belize, Guyana, Suriname, and Trinidad and Tobago are resource-based economies (oil and gas, minerals, agriculture and forestry). The Dominican Republic and Jamaica have strong tourist sectors as well as significant mining activity and some agriculture. Haiti is a special case, as political instability and natural shocks have undermined economic performance over the past four decades.

Per capita GDP also ranges widely among the countries covered by this note. With values ranging from $17,000 to $23,500 US dollars, The Bahamas, Trinidad and Tobago and Barbados boast the highest per capita GDPs among the emerging markets of the Western Hemisphere. At the other end of the spectrum is Haiti, with a per capita GDP of around $830 US dollars. Belize, the Dominican Republic, Guyana and Jamaica are low middle-income countries, in a range of $4,000 to $6,000 US dollars per year, while Suriname’s per capita GDP will be in the neighborhood of $9,500 US dollars in 2013.

With the exception of the Dominican Republic and to a lesser extent The Bahamas, fiscal revenue is at the high end for emerging economies, in the range of 24% to 35% of GDP. Taxes and social security systems provide the bulk of government resources, although natural resources and grants represent a significant part of fiscal revenues in the cases of Trinidad and Tobago and Haiti, respectively. Public expenditure in these countries is also higher than average for emerging economies, in the range of 25% to 40% of GDP, with the exception again of the Dominican Republic where it hovers around 18%. Overall deficits for all these countries will range between 2% and 6% of GDP in 2013. Public debt is a matter of concern for some countries, ranging between 55% and 82% of GDP in The Bahamas, Barbados, Belize and Guyana. It is especially high in Jamaica, at over 140% of GDP.

The greatest impact of the international financial crisis was felt in the service-oriented economies of the region, as well as those that receive significant remittances from their migrants. Higher energy and food prices compounded their stress. However, even Trinidad and Tobago, an oil and gas exporter, was not immune to the crisis as it had to rescue a large financial conglomerate in 2009. This has translated into low growth since the crisis, particularly in the non-resource economies.

Rigid expenditures patterns and significant deficits have meant there has been little fiscal space to finance expansionary policies domestically. High debt levels have limited their ability to finance such policies through international borrowing, except in the cases of Suriname, and Trinidad and Tobago, where exports of natural resources insulated them to some extent from the crisis.
GROWTH DETERMINANTS

For over half a century economists have used a sources-of-growth accounting framework to estimate the contributions of changes in the labor force, in capital, and in technology, to growth. A logical extension of this analysis is to examine the determinants of factor accumulation and innovation, including the role played by tax policy.

Taxes affect the labor force in many ways. For example, high personal income tax rates discourage people from working, while tax credits for education may encourage investment in human capital, and thus increase productivity. The same is true regarding physical capital. Higher corporate income taxes tend to discourage investments, while tax incentives will, all else being equal, encourage capital formation. Likewise, while tax policies cannot cause innovation it can stimulate the expenditures in research and development that may lead to innovation.

It would however, be a mistake to conclude that all that is needed to increase economic growth is the right combination of tax breaks to provide sufficient stimulus for factor accumulation. Empirical studies cited in Easterly and Levine (2001) show that factor accumulation only explains around 50% of per capita growth in OECD countries and 65% in LA countries, while the rest is explained by Total Factor Productivity, a residual that economists don’t yet adequately understand (Prescott, 1998).

Without denying the importance of factor accumulation, economists have increasingly placed a greater emphasis on the role played by economic policies in setting a framework conducive for growth, productivity and innovation. An initial set of policies considered includes openness to international trade, sound fiscal management and financial sector development. They argue that structural reform often unleashes the growth potential of a country in ways barely imagined by tax measures enacted to promote investments in certain sectors.

Tax incentives in emerging economies have been justified for a number of reasons, chief among them being the need to compensate for market failures that discourage investment. High capital mobility and international competition for foreign direct investment (FDI) has also led countries to offer tax incentives, as well as other enticements, in an effort to land coveted investments. Last, tax incentives are frequently seen as an expedient way to address existing bottlenecks and limitations that make a country, or sub-regions of a country, less attractive for investment, and that would require lengthy structural reform.

Possibly the most compelling justification for the use of tax incentives is the existence of positive spillover effects. Given these positive externalities, a firm will decide a level of investments that will be sub-optimal for the country as a whole, since it will not be able to reap all the benefits associated with this investment. In this case, tax incentives could be used to increase a project’s profitability, inducing the firm to increase the level of investment to optimal levels. Examples of such investments are those located in a country’s less-developed regions or those that build human and physical capital that will not exclusively benefit the project’s owners.

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41The infant industry argument was used to justify the use of trade barriers to allow nascent sector to develop the skills, knowledge, etc. that would allow it to compete with imports. This argument has lost support due to the unsatisfactory performance of such inward-oriented development strategies vis a vis strategies that embraced trade openness.

First of all, any tax incentive scheme requires a well-functioning tax system. Tax incentives will only work if taxes are collected in the first place, a condition that is not fulfilled in many countries in the hemisphere due to poor tax designs and weak tax and customs administrations. Efficient, client-oriented tax and customs administrations are key to collecting taxes. Tax and customs administrations should enjoy financial and administrative autonomy, and its staff should be part of a civil service that is independent of the political system. This same degree of professional skill is required of the budgetary institutions, sectorial ministries and investment boards responsible for managing and overseeing any investment promotion regime. Furthermore, well-designed system should separate those responsible for the administration of the tax benefits of projects from those responsible for selecting these projects based on objective criteria and monitoring that investors fulfill their commitments.

The next, frequently overlooked, step of a good tax incentive system is a sustainable fiscal framework. In countries of questionable fiscal solvency, tax incentives are not likely to generate quality investments, as entrepreneurs will not expect the favorable tax treatment awarded to their investment to be sustained over time.

But what kind of tax incentives are there? The initial distinction made when considering tax incentives is between incentives through direct taxes, i.e. the Corporate Income Tax, (CIT); and indirect taxes, i.e. import tariffs and the Value Added Tax (VAT)\textsuperscript{43}.

**Corporate Income Tax Incentives**

CIT tax incentives target the tax rate, as well as the rate of capital recovery of invested amounts. Table 1 summarizes the advantages and disadvantages of these instruments in terms of revenue and implementation costs, in terms of the distortions they introduce in favor of tax avoidance and resource allocation and in terms of transparency for the tax system.

The most efficient CIT tax incentives function by means of accelerated depreciation, allowing taxpayers to frontload depreciation beyond the regular schedules accepted in the tax code, in some cases even expensing the total investment amounts when the investment is made. The revenue cost associated with accelerated depreciation is bounded by the amount invested, unlike incentives that operate on profits, which are unbounded and depend on the performance of the project. Expressed from a different angle, the incentive only affects the timing of the cost–recovery and not its amount. An accelerated depreciation scheme is fairly straightforward to implement and does not require a specific arrangement from the tax administration. Unlike other direct tax-incentive schemes that encourage investors to combine profits from firms that do not enjoy tax incentives with those that do benefit from them, accelerated depreciation does not introduce any bias in terms of tax avoidance. Likewise, this alternative is transparent, since taxpayers are required to file tax returns every year. Nor does it distort the nature of the investment to be undertaken by the firm.

\textsuperscript{43}This is merely an analytical distinction, because many investment promotion regimes (e.g. Argentina and Brazil) provide tax incentives through both direct and indirect taxes. The tax incentives Argentina gives to investors in Tierra del Fuego can be consulted in http://www.sub-industria.gob.ar/depyme/regimen-especial-adiuano-y-fiscal-de-tierra-del-fuego. The incentives Brazil offers for investment in Manaos are described in http://www.suframa.gov.br/zfm_incentivos.cfm.
### Table 1: Corporate Income Incentives

<table>
<thead>
<tr>
<th>Revenue cost</th>
<th>Tax Holiday</th>
<th>Preferential Tax rate</th>
<th>Accelerated Depreciation</th>
<th>Investment Allowance</th>
<th>Investment Tax Credit</th>
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<td>Unbounded</td>
<td>Bounded</td>
<td>Bounded</td>
<td>Bounded</td>
<td>Bounded</td>
<td>Bounded</td>
</tr>
</tbody>
</table>

**Tax avoidance**
- Encourages transfer of profits from firms that are not exempted
- Encourages transfer of profits from firms that are not exempted
- Does not encourage tax avoidance
- Encourages sale and purchase of assets to claim allowance
- Encourages sale and purchase of assets to claim allowance

**Transparency of revenue cost**
- Normally do not require tax filing
- Requires tax filing
- Requires tax filing
- Requires tax filing
- Requires tax filing

**Resource allocation**
- Tend to attract short-run projects
- Tend to attract short-run projects
- Does not affect life of assets. Tend to increase capital intensity
- Tend to favor short term assets
- Tend to favor short term assets

**Administration Costs**
- Significant tax administration costs to monitor tax avoidance from related but non-exempted firms.
- Significant tax administration costs to monitor tax avoidance from related but non-exempted firms.
- Some. Usually associated with carry forwards.
- Some
- Some

**Implementation Costs**
- Medium to ensure project complies with goals
- Medium to ensure project complies with goals
- Initially to ensure investment is made
- Initially to ensure investment is made
- Initially to ensure investment is made

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**Tax incentives provided through import tariffs, excises and VAT**

Tax incentives can also be provided in the cases of import tariffs, excise taxes and the VAT.

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44. TOver the past two decades most countries have embraced an agenda of trade liberalization. As a result, protective tariffs and non-tariff barriers are used less frequently to promote economic activity and create employment.
This is usually done by exempting certain inputs from these taxes. While general exemptions are easy to administer, they may entail significant revenue loss. Targeted exemptions to benefit specific industries or sectors that use these inputs will narrow the loss. However, these exemptions interfere with the desired tax neutrality in resource allocation, since they provide tax relief only to specific beneficiaries. They also pose significant challenges to tax administrations, because the exempted inputs may be diverted to unintended beneficiaries.

Revenue concerns, allocation distortions and enforcement costs are the three main factors that discourage the use of indirect tax incentives in most economic activities, the exception being those that are export-oriented.

The economic rationale for eliminating indirect taxes from exports is known as the destination principle, under which goods and services are taxed wherever they are consumed, rather than produced. The most common application of this principle is the zero rating of VAT on exports, by which the exporter receives a tax credit for the amount of VAT paid on inputs used to produce the good or service. This implies that the tax treatment a product will receive will depend on whether it is sold in the domestic market or abroad.

**While the destination principle is straightforward, its implementation can present challenges for many customs and tax administrations in developing countries.** Indirect taxes are reimbursed only on the amounts paid on import tariffs, excise taxes and VAT for inputs used to produce exported goods and services. However, exporting firms usually produce more than one good or service, using many inputs in different proportions that may be taxed at different rates. Furthermore, they often sell in both domestic and export markets.

A final mention should be made regarding **Export Processing Zones (EPZ).** EPZs are widely used in the Caribbean region to promote exports and it is not unusual for governments promoting such activities to exempt them from direct and indirect taxes. While the former is non-controversial, indirect tax incentives for export-related-activities, other than VAT exemptions, violate WTO rules and must be dismantled by 2015 for all but the poorest countries.

**EVIDENCE ON THE EFFECTIVENESS OF TAX INCENTIVES IN DEVELOPING COUNTRIES**

In this section, we begin by reviewing analytical work on tax incentives in developing countries and their impact on investment and growth. While this literature is not abundant, a further source of information on the cost of these policies is available through the tax expenditure reports prepared by countries’ Budget Offices. Thus, we examine the tax expenditures of two economies in the region: the Dominican Republic and Jamaica. As we shall see, both countries provide significant, and unaffordable, tax relief. However, the fact that there is so little to show for these tax expenditures indicates that there is no substitute for a targeted policy or for a well-designed tax system.
We then review the aggressive tax planning behavior of the Dominican Republic's tourist sector under the understanding that it does not differ significantly from that of other countries in the region. The strategy of the Dominican Republic's tax administration, which employs transfer-pricing rules developed according to OECD guidelines, will be described, as it can easily be adapted to other Caribbean economies.

Zee et al. (2002) paint a bleak picture of the effectiveness of tax incentives in developing countries in their review of the empirical work on this subject: “The main messages of this research are that tax incentives can stimulate investment but that a country’s overall economic characteristics may be more important for the success or the failure of industries than any tax incentive package; and even if tax incentives stimulate investment, they are not generally cost effective” (p. 1508).

Klemm and Van Parys (2009), analyze the use of such incentives as a tool to compete with other countries for foreign investment, in an econometric study covering 47 African, Latin American and Caribbean countries over a 20-year period. While they find evidence that tax incentives provided by CIT rates and tax holidays are effective in attracting FDI, they found no evidence that these investments translated into increases in overall private investment or growth, leading them to conclude that the tax incentive’s “ultimate benefits for the economy may be limited”.

From a tax revenue perspective, Nassar (2008) found that CIT competition led to an erosion of the tax base in 15 Caribbean countries. He concluded that the widespread use of tax holidays needed to be eliminated if alternative policy proposals being considered at that time – including accelerated depreciation and tax harmonization – were to have an impact on revenue collection. Sosa (2006) also finds disappointing results for tax incentives in terms of generating new investments, and found that the costs in terms of foregone tax revenue for the small island states that comprise the Eastern Caribbean Currency Union (ECCU) was high. Chai and Goyal (2008) also study the tax incentives provided by the same group of countries and find that “The costs are very large, while the benefits appear to be marginal at best. Foregone tax revenues range between 9.5 and 16 percent of GDP per year, whereas total foreign direct investment does not appear to depend on concessions. A rethinking of the use of concessions in the region is needed urgently”.

Tax expenditure reports by the budget offices of the Dominican Republic and Jamaica provide a further estimate of the cost of tax incentives. The Dominican Republic had a tax burden of around 15.5% of GDP in 2010. VAT and excises are the largest revenue sources, followed closely by the income tax and social security taxes. Tax expenditures, i.e. exemptions from taxes, are high, around 5.8% of GDP. Almost two thirds of this amount provides relief from VAT, in an attempt to mitigate the high adverse distributional consequences of this tax. The remaining tax expenditures, equal to 2.2% of GDP, benefits export promotion zones, general manufacturing and the tourist sector.

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45 The Caribbean countries included in both Klemm and Van Parys (2009), and this Policy Note are The Bahamas, Barbados, the Dominican Republic, Guyana, Jamaica, and Trinidad and Tobago.
46 The authors offer two possible explanations for the limited impact of tax incentives: (1) tax incentives “mainly affect the ownership rather than the amount of capital in an economy” and (2) “it is possible that higher FDI crowds out domestically financed investment, with no net effect”.
47 Chai and Goyal (2008) use the term concession instead of incentives in their study.
Also in 2010, Jamaica’s tax collection reached 23.6% of GDP, with a relatively high share of total tax receipts coming from income taxes. Tax expenditures are high; they represented 7.3% of GDP in 2009, reflecting widespread use of tax instruments to promote economic activities. Tax incentives are grouped under four categories: Statutory Tax Expenditures, Incentives, Discretionary Waivers and Waivers on Tax Arrears. What should be clear is that such a complicated incentive system not only reduces public revenue but it ends up undermining the capacity of tax administration by making tax evasion easier and complicating efforts to calculate how much taxes companies should be paying.

<table>
<thead>
<tr>
<th></th>
<th>Dominican Republic</th>
<th>Jamaica</th>
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<tbody>
<tr>
<td>Income Tax</td>
<td>2.9</td>
<td>8.7</td>
</tr>
<tr>
<td>VAT</td>
<td>4.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Excises</td>
<td>3.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Trade</td>
<td>1.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Others</td>
<td>3.8</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>15.5</strong></td>
<td><strong>23.6</strong></td>
</tr>
<tr>
<td><strong>Tax Expenditures</strong></td>
<td><strong>5.8</strong></td>
<td><strong>7.3</strong></td>
</tr>
</tbody>
</table>

Sources: IDB CIAT Data Base, Garcimartín and Diaz de Sarralde (2012), and IDB (2010)

Despite the fact that tourism is possibly the most competitive sector of Caribbean countries, it is also the sector awarded with the most over-generous tax incentives. Tourism on average accounts for almost forty cents of every dollar of export earnings in the region, and this amount can rise to almost eighty cents in the cases of Barbados and The Bahamas. However, tourism’s share of tax revenue tends to be modest, in no small part due to aggressive tax planning, to take maximum advantage of incentives. (Barreix and Velayos, 2013).

In order to improve tax collection from the tourism sector, the Dominican Republic’s tax administration (Dirección General de Impuestos Internos - DGII) launched a thorough investigation of the country’s all-inclusive hotel sector.\(^48\) The main findings were that CIT and VAT liabilities were kept at a minimum due to three reasons: (1) reservations were handled by trading companies linked to the hotel operator but located in countries with low or no tax; (2) hotels declared daily rates to the tax administration that were lower than the operating cost per guest; (3) hotels reported permanent losses to the tax administration as well as debts to the trading companies.

\(^48\) All-inclusive hotels represent 69% of rooms in the country’s hotel sector (Montero (2012)).
The DGII then designed an arm’s length occupancy rate using the OECD’s Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations. This rate was then used by DGII to assess CIT and VAT liabilities for 2007/2010. According to Barreix and Velayos (2013), DGII CIT assessments for 2007/2009 represented an average increase of almost 820% of previous self-assessed obligations. The comparable figure for VAT was 70% higher for 2007, 2009 and 2010. While hotels contested the tax administration’s actions, the Courts ruled in favor of the DGII.

In short, tax expenditure data show that regional governments have showered economic activity with all types of tax breaks that most countries cannot afford. These tax expenditures have not led to more competitive economies and have ended up not only distorting the tax system but they have also introduced horizontal inequity among taxpayers as well. Moreover, even considering tourism, the region’s most competitive sector, bad policy design combined with aggressive tax planning practices has undermined the tax system and deprived governments of revenue badly needed to finance social expenditures and infrastructure needs. The conclusion by now should be clear: tax incentives are a poor substitute for a dysfunctional tax system. Countries should consider rationalizing their tax system and eventually think about introducing a modern and cost-effective tax incentive scheme, targeted to offset the negative externalities that discourage growth and the creation of quality jobs.

The challenge posed by the international financial crisis, and aftermath, has revived the debate regarding the need to review the policy alternatives of a group of small Caribbean and South American nations. A key element of this review is the use of tax incentives to promote growth and job creation.
The starting point of any successful tax incentive policy is a well-designed tax system. The tax system should collect the revenue required to finance government services and help fund infrastructure needs. Furthermore, taxpayers should perceive it to be fair and equitable, both horizontally and vertically.

Caution with tax incentives is warranted on analytical and empirical grounds. With regards to the former, policymakers should have a clear idea of the limited scope of what can be accomplished with this instrument. Tax incentives can address negative externalities that limit investments, determine their location and discourage job creation. They cannot however be used as a Deus ex machina that will solve all of an economy’s structural deficiencies. They are not and cannot be a substitute for structural reform.

Empirical evidence of tax incentive schemes in developing countries is scarce and in any case discouraging. Studies carried out in developing countries including in the Caribbean have found that while tax incentives may attract FDI, they have not been able to increase overall private investment or economic growth. Moreover, not only have the ultimate benefits proven to be limited, but the cost in terms of foregone revenue has proven to be very high as exemplified by the small island states of the Eastern Caribbean Currency Union. Additional information on the fiscal costs of tax incentives are available in tax expenditure reports. The two countries examined in this Policy Note provided a clear picture of the difficulties of keeping tax expenditures in check as the cost of tax relief has ballooned to between 6% and 7% of GDP. The description of the aggressive tax planning behavior of the Dominican Republic’s tourism sector exemplifies the questionable rationale of providing tax relief to one of the region’s most competitive industries.

A good tax incentive system should provide an explicit rationale of the externality it will address and should provide well-defined values of the variables it is expected to obtain (e.g. invested amounts, jobs, net exports, etc.). This information should be assessed by a government agency that is independent of political pressure and its reports should be available to the public. Smaller countries could consider creating a regional tax incentive scheme, administered jointly by a regional multilateral body of member states to alleviate political pressure and better resist games often played by investors on governments to enhance their benefits.

Transparency should continue during project implementation. Governments should make public the results of monitoring by the tax administration and the government agencies responsible for promoting investments. Furthermore, they should also publically disclose the goals of tax incentive schemes and of their costs in terms of foregone tax liabilities. Finally, tax incentives should have a sunset clause, so that they do not continue indefinitely.

In terms of implementation, the Corporate Income Tax is the instrument of choice. For example, job creation may warrant the use of reduced payroll taxes to finance the social security system. Similarly, exemptions from local taxes in the less developed regions of a country may be beneficial. However, the accelerated depreciation allowance is a preferred instrument to tax rates and tax holidays, and tax filing should always be required. Incentives in terms of indirect taxation should be limited to export-oriented activities and are essentially covered by the destination principle of taxation under which goods and services should be taxed wherever they are consumed.
REFERENCES


PUBLIC PRIVATE PARTNERSHIP IN THE CARIBBEAN: BRIDGING THE FINANCING GAP

Jose Luis Guasch*
ABSTRACT

The current strategic development plans of a number of regional governments include a substantial role for private sector resources. Although many countries in the region have implemented one or two PPP projects, and a few—such as the Dominican Republic, and Jamaica—have made more substantial use of PPPs across a range of sectors, these projects have met with mixed success, because none of these projects was implemented under a consistent and comprehensive PPP framework. This paper proposes a number of elements needed for successful implementation of PPPs. It argues that some elements would be needed immediately to enable PPP projects to progress, while others can be developed over time. It also highlights four key transversal themes of particular importance for sound PPP programs in the Caribbean: Governance, institutionality, capacity building, and financial platforms. Given the small size of most of these countries, it would be useful to place country efforts (as well as assistance) to improve PPP programs as much as possible into a Sub-Regional/Supranational framework, so as to leverage capacity and resources as much as possible.

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INTRODUCTION

Caribbean countries are committed to achieving significant economic and social development to raise the living standards and welfare of their citizens. To achieve rapid development, to support high and sustainable rates of and to reduce poverty rates, many of them must make substantial and immediate investments in economic and social infrastructure. As small island economies, they must look to international markets for trade, services, and tourism as part of the strategy for developing their economies, improving productivity, and increasing productive employment and living standards. Efficient, cost competitive facilities and services in transport and communications, energy, water, sanitation, health, and education are essential to drive and support this development effort and to reduce poverty. However, the resources available to the public sector for needed infrastructure investments are very limited. Many Caribbean countries have high levels of public debt as a percentage of GDP and high fiscal deficits. Most of them are in the top 30 most-indebted emerging markets countries (among the best performers is the Dominican Republic, even though its fiscal deficit and public debt levels reached 8.5% and 44% of GDP, respectively, in 2012). This situation is leading countries to reach out to the private sector, in order to leverage scarce public resources and to secure private sector financial resources and know-how in order to meet these infrastructure needs.

As a consequence, the current strategic development plans of a number of regional governments, as well as their accompanying budgets, provide for a substantial infrastructure investment program, and include both public and private sector resources. Under traditional public procurement, governments obtain a public infrastructure service such as electricity, water supply, schools and hospitals, by engaging a contractor to construct a facility that the government then owns, manages and operates. This form of public procurement will continue, but as a result of the limited fiscal resources, public infrastructure services development will also be sought through public private partnership (PPP) arrangements, which will mean a broader role for the private sector in providing infrastructure facilities and services.
As mentioned above, the urgency and scale of Caribbean countries’ public infrastructure needs, and the limited capacity and fiscal resources available to satisfy these needs through traditional public procurement, make it necessary to rely on PPP arrangements to deliver more projects with better value for money (since in addition to providing much-needed financing, these projects also address rehabilitation and maintenance issues, cost reductions, risk transfers and better know-how) than traditional public procurement. The ultimate solution and outcome ought to be an intelligent mix of public sector services provided through traditional public procurement, PPP and hybrid delivery methods combining private sector efficiency with government financing to ensure viability of necessary facilities and services. **When well prepared, public-private partnerships have proven to be as successful as non-traditional delivery methods, not only in developed economies, but also in developing and middle income economies.**

The governments of most Caribbean countries aim to improve infrastructure through PPP arrangements that harness the development of the private sector to contribute to the growth of GDP and poverty reduction. Therefore, they are turning increasingly to the private sector to design, build, finance, and operate infrastructure facilities hitherto provided by the public sector. **PPPs offer policy makers an opportunity to improve the delivery of services and the management of facilities. The other benefit is that of mobilizing private capital:** the estimated demand for investment in public services shows that government and even donor resources fall far short of the amount required. Access to private capital can speed up the delivery of public infrastructure.

**Partnerships with the private sector can help to improve the procurement of public services, because the PPP process usually requires information about the true long-term cost of service delivery, which generates a more realistic debate on project selection.** By improving the identification of a project’s long-term risks and the allocation of those risks between the public and private sectors, the PPP process enables a more efficient use of resources.

The contractual nature of PPPs also acts as a powerful incentive to ensure that this long-term perspective is put into practice: the public sector can no longer procure infrastructure assets and then fail to maintain them properly. At the same time, the private sector has strong incentives to design and build these assets taking into account the costs of longer-term maintenance and rehabilitation needed to make the investment a success, since their capital is at risk.

**Usually, the starting point of developing a PPP program is the issuing of a PPP policy statement, a document stating the government’s firm commitment (at the highest level) to achieving improved infrastructure services by increasing private sector involvement in the financing, delivering and operation of public infrastructure.** These policy statements typically set out the motivation for the PPP program, the scope, what types of public infrastructure will be eligible to be considered and how a PPP project will be assessed, procured, and managed. **Establishing a clear policy framework helps both the public and the private sectors to understand the core rationale for PPPs and how the public sector will go about making such partnerships function.** PPPs are difficult to deliver in an unstable policy environment. When assessing a PPP market, the private sector expects to see a PPP policy that sets out the following: i) The rationale for using PPPs; ii) The guidelines that the public sector will use to assess projects in a consistent way; iii) A clear explanation of who approves what and when throughout the process of project selection, preparation, and procurement; and iv) Conflict resolution mechanisms.
THE STATUS OF PPP PROGRAMS IN THE CARIBBEAN

Caribbean countries are not entirely new to PPPs. Many have implemented one or two PPP projects; a few—such as the Dominican Republic, and Jamaica—have made more substantial use of PPPs across a range of sectors. These projects have met with mixed success. While some have enabled clear improvements in services, many have resulted in unexpected and significant fiscal costs, delays and challenges, and some have ultimately failed. In some cases, these negative experiences have affected the image of PPPs, an issue that has to be addressed if countries are to use them more extensively. A misunderstanding of the implications of PPPs, which are sometimes perceived as a disguised form of privatization, can also be an issue.

Notably, none of these projects has been implemented under a consistent and comprehensive PPP framework. No Caribbean country has a dedicated PPP law in place yet and only a handful (such as Jamaica, Haiti, and Trinidad & Tobago) have issued a PPP policy statement, or started to build the institutions and capacity for managing a PPP program. Structuring and managing a PPP project remains a challenge, even for those countries that have more substantial previous PPP experience, such as the Dominican Republic, and not all of the implementing agencies have developed the abilities needed to run a successful PPP.

A number of barriers for effective implementation of PPP in the Caribbean countries remain, such as weak institutional capacity, an absence of clear rules, a limited ability to provide funding to finance projects during until their viability is proven, and poor investor perception. In addition, a bankable pipeline of projects with high economic/social impact is needed. Overall, most Caribbean countries are still in the earlier stages of PPP programs. Most of them can be characterized as stage I, while countries such as Jamaica, Trinidad and Tobago, and Dominican Republic are entering into stage II to some extent (Table 1). The objective of a PPP strategy would be to bring Caribbean countries towards stage III over time. A number of countries have been seeking advice and support from the World Bank (WB) and the International Finance Corporation (IFC) to advance their PPP programs. Thus, the IFC and the WB are already involved in supporting PPP elements, including the preparation of a “Caribbean Infrastructure PPP Roadmap” (or transactions in the case of the IFC) in the Caribbean, but not yet in a systematic manner.

In case Caribbean countries decide to embark in establishing comprehensive PPP programs, there are some key elements to take into account. Of course, each country does not necessarily need to take all elements on board at once. Rather, within this context and framework, each Caribbean country should select/demand/address the most critical/needed elements/package and sequence tasks as appropriate in light of its current circumstances, in order to most effectively move forward its PPP program.
Table 1. Stages of PPP Program Development

<table>
<thead>
<tr>
<th>Stage One</th>
<th>Stage Two</th>
<th>Stage Three</th>
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<tbody>
<tr>
<td>• Define policy framework</td>
<td>• Define policy framework</td>
<td>• Fully-defined “system” established</td>
</tr>
<tr>
<td>• Test legal viability</td>
<td>• Test legal viability</td>
<td>• Legal impediments removed</td>
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<tr>
<td>• Demonstrate political commitment to the PPP program at highest level</td>
<td>• Demonstrate political commitment to the PPP program at highest level</td>
<td>• PPP models refined and reproduced</td>
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<tr>
<td>• Develop principles and foundations</td>
<td>• Develop principles and foundations</td>
<td>• Introduce a proper risk matrix and risk allocation</td>
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<tr>
<td>• Apply lessons from previous deals to other sectors</td>
<td>• Apply lessons from previous deals to other sectors</td>
<td>• Develop a relationship with committed sources of financing</td>
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<tr>
<td>• Start to build a market</td>
<td>• Start to build a market</td>
<td>• Long-term political consensus</td>
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<tr>
<td>• Implement a communication campaign</td>
<td>• Implement a communication campaign</td>
<td>• Use a full-range of funding sources</td>
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<tr>
<td>• Fully-defined “system” established</td>
<td></td>
<td>• Thriving infrastructure investment market involving pension funds and</td>
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<td></td>
<td></td>
<td>private equity funds</td>
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<td></td>
<td></td>
<td>• Well trained civil service with experience in PPP projects</td>
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<td></td>
<td></td>
<td>• Broadening the use of PPP to new sectors</td>
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<tr>
<td></td>
<td></td>
<td>• Steady flow of PPP projects awarded annually</td>
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A PPP FRAMEWORK

As Caribbean countries identify how best to move forward with the implementation of PPP programs, it might be useful for them to use a best practice framework against which to judge their projects. This can help identify shortcomings, as well as suggest possible options on how best to address them. In that sense, steps toward a comprehensive PPP framework for Caribbean countries could include the following points:

• The **PPP Policy Statement**, **PPP legal instruments** as needed and appropriate, to anchor the PPP policy, and in particular to address the public administration, public financial management, PPP procurement and public interest matters. While in principle this would be desirable, the British common law legal tradition of most Caribbean countries might make it less necessary.
• The **PPP institutional set up**, including the right set of institutions to accompany the PPP project from identification of the project to awarding it to the right private sector operator, and then to oversight of how it is carried out, with proper and clear (not overlapping) jurisdictions and mandates, and with effective accountability. The **functions, jurisdictions and responsibilities in the decision process for a PPP project** need to be established; including clearances and approvals by the relevant entities from project identification to adjudication and oversight; establishing timetable standard/estimate for the processing and adjudication of a PPP; considering accounting for the size of projects, setting different standards and procedures for small projects than for large ones; and finally, establishing the procedures for the treatment of unsolicited offers. Typical approaches in other countries—such as the establishment of dedicated PPP Units, and regulatory agencies—may need to be adjusted in the Caribbean context to take into account the small overall size of government administrations and probable number of projects.
• **Program of potential PPP projects**, and actions to implement PPP Policy, and to inform the private sector locally and internationally of the government’s commitment to PPP and of the prospects for private sector involvement in PPP projects. Identifying a bankable short pipeline of projects (a critical element lacking in practically all Caribbean countries); developing model pilot projects (in energy and transport) and then adapting them to specific country conditions

• Methodology and **eligibility criteria and key indicators** to make the case for a PPP Project and build a bankable pipeline of projects with large economic impact. Bankability and economic impact ought to be the two critical criteria for choosing PPP projects. More generally, the process of choosing projects needs to be aimed at obtaining answers to the following three questions in order to be in a position to approve or reject a proposed PPP Project: i) What is the project scope and its requirements and justification (the strategic case); ii) can the project be delivered as a PPP (is it affordable, profitable, and manageable); and iii) Should the project be delivered as a PPP (would it give value for money).

• PPP **Project Cycle Procedures and Forms** are needed to clarify the relevant jurisdictions and steps involved in identifying, evaluating and procuring PPP projects and private sector participants. Minimal requirements for the formulation and presentation of project proposals need to be established. Transactions need to be structured, identifying risks, risk matrix and risk allocation. A social assistance program should be considered to accompany the PPP program to provide subsidies when relevant and justified; market interest for PPP projects (project specific) should be evaluated via market testing and consultations; a focused and educated marketing strategy should be developed to sell PPP projects and to reach strategically key potential investors, stakeholders and markets; and different options for carrying out the competitive process/auction and possible criteria for awarding projects should be considered.

• PPP **Guidance Materials and Tool-kit, and Operational Manuals** (including project evaluation, and financial modeling and regulatory accounting), and **Training and Capacity Building Programs** to assist the government in implementing the PPP Project Cycle and to inform the general public and potential investors and lenders of the diligent and professional approach that is being taken in implementing the PPP policy.

• PPP **Standardized Documents** (including standardized definitions of key terms, contract templates, key contract clauses, matrix of the fundamental risk factors associate the such as agreement, and common approaches to recurring issues),

• The PPP **Financial Platform** to facilitate the bankability of projects when appropriate and relevant. Issues to be addressed on this platform include assisting with the bankability of projects, and properly leveraging the scarce public sector financial resources. Possibly with support from multilaterals, consider establishing a Sub-Regional fund to assist in the financing by the private sector of PPP projects; design, implement and define scope and eligibility of a financial platform; managing government financial obligations, registry and management of investments and financial Government commitments, certain and contingent; Partnership programs with donors and bilateral and multilateral financial institutions to secure sources of additional finance (donations and concessional and non-concessional finance).

• **Legal and regulatory reforms**, in order to facilitate investment by addressing the needs and concerns of investors and lenders, so that potential PPP projects can become “bankable”, and to establish a regulatory framework for PPP oversight, agency design, performance indicators, contract compliance; transparency blueprint and a conflict resolution framework converging to professional arbitrage.

• A **communications program** to inform civil society and population at large about the reasons for, and expected outcomes of, the program; along with a program to reach out to
the private sector and financial institutions and communicate the opportunities available, as well as the commitment of the government to bring about a successful PPP program.

Some elements would be needed immediately to enable PPP projects to progress, while others can be developed over time. Equally, some are necessarily country-specific, while others (such as guidance and tools) can benefit from a regional approach—as discussed further below. **Given the urgency of the infrastructure needs in many Caribbean countries, there is no need to wait for all the pieces of the framework to be in place to implement PPP projects. Countries can start by implementing the most critical elements of the framework. Critical elements would include those necessary for better project structuring and risk allocation, and for clarifying the rules of the process, as well as for identifying a pipeline of projects and implementing some of the project with the assistance of hired expert advisers, while local capacity is further developed.**

**Components of the Program to Improve PPPs in the Caribbean**

In general terms, as described above, establishing a PPP program involves a number of steps. First, the framework needs to be set. This step involves establishing the legal underpinnings and procedures, institutionalizing the process, and developing conflict resolution mechanisms. The next step involves selecting projects, which should be selected based on their potential profitability and high-impact. Further steps include preparing projects for the market; designing and managing the procurement; managing the interface with the private sector; hiring and training project advisers; awarding the contract; developing the accompanying financial platform, adoption of the right operational instruments, selection and optimization of infrastructure portfolios, streamlining delivery, making the most of existing infrastructure assets (McKinsey Global Institute, 2013), communications etc.

In addition to these important areas, four key transversal themes merit highlighting, given their importance for sound PPP programs in the Caribbean: Governance, institutionality, capacity building, and financial platforms.

**Focusing on Governance**

The key factors that need to be strengthened in order to improve governance are: (i) Participation: a greater degree of involvement of stakeholders; (ii) Accountability: making political actors more responsible to society for what they do and say; (iii) Fairness: applying rules equally to everyone in society; (iv) Efficiency: using limited human and financial resources without waste, delay or corruption or without prejudicing future generations and finally (v) Transparency: making all decisions with a greater degree of clarity and openness.

This last point requires a commitment to placing critical contract information and performance in the Web for easy and wide public access. A strong transparency framework would include: i) disclosure of PPP contracts (updating it with any changes made since contract was assigned and relevant side agreements including any government guarantees; ii) disclosure of future streams of payments and government commitments under PPP contracts; iii) publication of a summary in plain language giving the most important elements of the contracts and projects and key information on the reasons for the project, selection as a PPP and procurement; iv) a summary of procurement process, criteria and awards; v) information on an annual basis of the performance of the project and compliance with contract agreements; vi) publication of any audit reports.

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1 See also Guidebook on Promoting Good Governance in Public-Private Partnerships (UNECE, 2008).
Focusing on Institutionality

This is a critical theme under the objective of seeking a sustainable program that transcends administrations. The goal is to build, or strengthen if it already exists, the right set of needed institutions with proper jurisdictions, mandate and responsibilities and with accountability and operating under utmost transparency. In many countries, this includes dedicated PPP Units, Delivery Units, Inter-Ministerial Committees (even the Ministry of Finance, and other Line Ministries for establishing jurisdiction and capacity issues around the PPP theme) and oversight/regulatory institutions. In the Caribbean, particular consideration should be given to adjusting requirements to account for the small size of their economies.

Focusing on Capacity Building

This is a major theme for effectiveness and sustainability. The focus will be on short, medium and long term programs to build, develop and generate relevant skills for PPPs, and a flow of appropriate human capital through regional and national Training Programs, specialized educational programs and modules, and bilateral cooperation agreements with relevant donors and multilaterals. Some possibilities are i) establishing Sub-Regional PPP Training programs in partnership with regional universities, such as the MBA program created by SEOPLAN (the association of major Spanish contractors and concessionaires) together with a local management training institute; ii) The PPP Knowledge Pool in the Netherlands that has consolidated, developed and spread financial, economic, legal and contractual knowledge and expertise about PPPs; iii) Partnerships UK runs a PPP Foundations Course for public sector PPP officials twice a year in the UK; iv) giving a global focus to sub-regional training hubs, as in Argentina and Peru for Latin America, or in Public Utility Research Center at the University of Florida; and v) use a regional institution (such as the Caribbean Development Bank or the Caribbean Community (CARICOM) and/or regional university (such as the University of the West Indies) to implement sustained training programs, following the Central America model where the Central American Bank for Economic Integration has played a key role on two themes, training programs and financial instruments for the sub-region.

Focusing on the Financial Platform

The small size of the economies of the Caribbean countries, limited or incipient capital markets, and the nature of the PPP business calls for a special effort to develop supra-national and national platforms to support the PPP process as needed and appropriate. Such efforts should also include the registry and management of government financial commitments, both contingent and non-contingent.
CONCLUSIONS

Understanding the need of most Caribbean countries to improve their PPP programs, the issue is how best to move forward. The suggested answer is that it should be through a mix of country specific efforts and others efforts conducted through supra-national initiatives. Given the context, it would be useful to place country efforts (as well as assistance) to improve PPP programs as much as it is possible into a Sub-Regional/Supranational framework, so as to leverage capacity and resources as much as is feasible and sensible.

Taking a sub-regional approach would reap significant economies of scale and improve the leverage of the scarce resources available at all levels, countries and external sources, since many of the interventions would be similar in all countries. The strategy would be to combine interventions, some joint or common to several countries others quite specific. The establishment of a sub-regional entry point team (composed of members from the Caribbean countries), to collaborate on specific issues and problems, could help support such a strategy.

In designing this regional PPP strategy, a key input would be the results of the “Caribbean Infrastructure PPP Roadmap”, which is currently underway. The aim of the Roadmap is to identify the specific project opportunities for using PPP to improve infrastructure across the Caribbean in the short- to medium-term, as well as the barriers to moving these projects forward—whether at the project, sector, or national level—and how those barriers could be overcome.

In adopting such an approach, necessary elements for an effective and sustainable Caribbean PPP development strategy include: A joint effort by all of the Caribbean countries involved; involvement of the supranational Caribbean institutions and an increase in their capacity to support the member countries’ programs; a focus on building institutionality, capacity and knowledge at both regional and national levels; initiatives and interventions focused at the Caribbean level instead of on a country by country level, as much as possible; and a focus on priority sectors common to a significant numbers of the Caribbean countries, such as Electricity (Caribbean countries are plagued by reliability issues and high cost); Transport and Logistics (driven by high logistic costs); ICT, Water and Sanitation (driven by limited coverage), and Services for Agro-Industry and Agriculture. Tourism and Special Zones also appear to be relevant.

The Road Map covers eleven countries in the Caribbean and four infrastructure sectors: electricity, water, transport, and telecommunications. The eleven countries are: Antigua & Barbuda, Belize, Dominica, Dominican Republic, Grenada, Guyana, Haiti, St Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, and Suriname.

Among those supranational institutions are the Caribbean Development Bank (CDB), the CARICOM Secretariat, and, for the OECS, the OECS and the Eastern Caribbean Development Bank (ECDB). While all of these institutions have a tradition of developing cooperation among their members, they have often been weakened by a lack of resources, with the exception of CDB.
REFERENCES


ANNEX

Possible items for discussion in the context of the implementation of a Supranational / Caribbean Initiative

The following themes of the PPP Framework could be considered for development within a Supranational/Caribbean Initiative (listed next to them are the institutions that – if they can secure resources – could lead the program):

**Focusing on the Financial Platform**

The small size of the economies of the Caribbean countries, limited or incipient capital markets, and the nature of the PPP business calls for a special effort to develop supra-national and national platforms to support the PPP process as needed and appropriate. Such efforts should also include the registry and management of government financial commitments, both contingent and non-contingent.

- Knowledge Platform (CARICOM).
- PPP Caribbean Forums.
- PPP Caribbean-wide training Programs (CDB or/and CARICOM).
- Communications platform for PPP Programs (CARICOM).
- Operational Instruments: Operating Manuals for Processing PPP Projects; methodology eligibility criteria to make the case for a PPP Projects and to build a bankable pipeline of projects with large economic impact; as well as other instruments; such as standards TORs for the hiring of advisers or transaction firms, and for the undertaking of the needed project evaluation studies: economic, financial modeling, social and environmental evaluations, regulatory accounting manuals and benchmark guideline.
- Regional Projects when feasible and appropriate (an example is the CARCIP project, which is specifically designed to support PPP in ICT in the Caribbean Region). Also pilot projects on key themes relevant to most Caribbean countries.
- Legal support (CARICOM).
- Identification and listing of foreign potential investors/operators in PPP projects in Caribbean countries (Central Bank of Barbados).
- Roster of Experts able to assist in preparing PPP projects and providing advice to a range of themes and issues (CARICOM)
- Compilation of the PPP experience in Caribbean countries (and of best practices from elsewhere), distilling the lessons for use by those countries (CARICOM or CDB).
- Conflict Resolution Platform (possibly provided by CARICOM).
- Financial Platform to support bankability of PPP projects, and Regional Financial Market Development (possibly provided/supported by the CDB, and the ECDB). Aside from developing a basket of financial instruments, the initiative could consider, inter alia, encouraging infrastructure bonds; encouraging the listing of infrastructure providers on local or regional stock exchanges; encouraging the development of regional infrastructure investment funds; and involving local financial services companies in structuring and arranging transactions.

- Regulatory Oversight framework: indicators, fiscalization and regulation (an Advisory Council to assist individual countries with oversight/regulatory issues on request, along the lines of the Eastern Caribbean Telecommunications Authority and what has been explored in OECS countries).

Among new instruments that could be set up are the following:

- A Regional Procurement Agency to manage procurement of government sponsored infrastructure PPP in the region. It would replace national agencies such as Government Tender Boards and Contract Committees and would achieve real independence and transparency in procurement by lifting procurement decisions above the national political level.

- A Regional Private Sector Advisory Council to assist in improving communications and dialogue with the private sector, to work with the private sector to identify projects, to generate more private sector interest, and to improve the quality and impact of unsolicited proposals of PPP projects.

- An Infrastructure Fund to support PPP Projects in the Caribbean (International Finance Corporation (IFC) and the Caribbean Development Bank for the region in general, and the ECDB for OECS countries)

- A Guarantee Platform and Fund to support PPP Projects in the Caribbean (Funded by the, the World Bank, the Caribbean Development Bank and the Multilateral Investment Guarantee Agency)

- A Dedicated PPP Support Platform for OECS countries under the OECS Secretariat

- A sub-unit, to be established within CARICOM, with representation of all Caribbean countries, to advise and oversee supranational initiatives to support PPP programs in the Caribbean.
THE CARIBBEAN DIASPORA: A SOURCE FOR VENTURE INVESTMENT?

Qahir Dhanani and Mina J. Lee*
ABSTRACT

The large size of the Caribbean Diaspora, its wealth, level of education, and engagement in the region make it an attractive source for further investment in the region. This policy note discusses the findings of the study “The Caribbean Diaspora: A source for venture investment?” The Entrepreneurship Program for Innovation in the Caribbean (EPIC) by InfoDev of the World Bank conducted this study, to assess the business and investment interests of the diaspora. In general, participants expressed greater interest in opportunities where they could not only “touch and feel” the investments being made, but also to have an active role. Policies to increase Diaspora engagement include addressing investment climate challenges such as legal complexity and enforcement. Furthermore, a platform that showcases interesting business venture opportunities could serve as a critical matchmaker for increased investment flows. In the long term, diaspora investments and their deals in the region can serve as a proof of concept to the rest of the world and demonstrate that the Caribbean has viable high growth enterprises and is open for business.

*Private Sector Development Specialist and Consultant, Private Sector Development, World Bank, respectively

INTRODUCTION

This chapter is based on the study “The Caribbean Diaspora: A source for venture investment?” which was conducted as part of the infoDev-implemented Entrepreneurship Program for Innovation in the Caribbean (EPIC) to assess the business and investment interests of the diaspora. EPIC places particular emphasis on supporting high-potential, growth-oriented early stage companies in the Caribbean. These companies most often face challenges in accessing finance, and so the study assessed the potential of leveraging business angel investors from the diaspora to bring "mentorship-based capital" in addressing this financing gap.

It is hoped that the findings from this study can be used to improve dialogue and collaboration between innovation ecosystem participants, to remove barriers to private sector involvement and better engage the diaspora on a wide suite of development and investment objectives. In particular, the goal of the study is to obtain information with which to design activities targeted at connecting diaspora investors with startup entrepreneurs.

Engaging over 850 self-identified members of the Caribbean diaspora, the study combines the knowledge and data gathered from 636 respondents, from over 31 countries of origin, to a widely circulated online survey; together with the inputs from over 200 face-to-face focus group sessions with business leaders, opinion leaders, and high net-worth individuals; and insights from individual interviews with 20 accredited angel investors.

This note provides a brief summary of the findings from the study, and focuses on three questions of particular interest. First, what is the profile of the diaspora? Second, how willing are its members to engage with the Caribbean? And third, what kind of investments would they be able to make in high-potential, growth-oriented startups in the Caribbean?

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4 InfoDev is a global partnership program within The World Bank Group that pioneers on-the-ground approaches to supporting growth-oriented entrepreneurs in developing countries. The program develops and implements scalable programs in the thematic areas of mobile, climate, agribusiness and women-led entrepreneurship.

5 Angel investors are affluent individuals who invest their own capital and time directly into unquoted companies, to which they have no family connection, in return for ownership equity.

6 The structured 40-question online survey was distributed through various diaspora organizations and through social media channels. It was open for a period of 6 weeks. Respondents therefore formed a random sample of diaspora members claiming affiliation with the following 31 countries or territories: Antigua and Barbuda, Aruba, Anguilla, The Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Colombia, Cuba, Curacao, Dominica, the Dominican Republic, Grenada, Guadeloupe and dependencies, Guyana, Haiti, Honduras, Jamaica, Martinique, Montserrat, Puerto Rico, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and the US Virgin Islands.
The Caribbean region is unique for many reasons. Perhaps most striking among these is the demographic fact that for every resident in the region there is an individual living in the diaspora abroad. This one-to-one ratio of nationals to diaspora members presents a tremendous opportunity for cross-border engagement among a people who share common cultures and histories.

Diaspora members from each country in the Caribbean participated in the study. Half of the diaspora respondents are based in the four metropolises of London, New York, Toronto and Miami, with the remainder spread out over a multitude of cities (See Figure 1). The distribution of the respondents by age and by gender was normal.

In general, the diaspora is very well educated with 80 percent holding a bachelor’s degree or higher (See Figure 2). Over 65 percent of the respondents are currently employed in the private sector with almost 40 percent owning their own businesses.
A quarter of diaspora respondents are affluent with either net investable wealth or annual incomes in excess of USD 100,000 (See Figure 3). This income is held primarily in cash savings, real estate holdings, or public equity. A small proportion of respondents (only 8 percent) identified themselves as “accredited investors,” defined as investors having either an annual income of over USD 200,000 during the past two years or at least USD 1 million in investible assets. These affluent and accredited individuals are of critical importance in making informed investments back home. They tend to have a level of investment sophistication and business acumen that promotes best practices among investees, demand accountability and results, and can therefore make a major contribution to the development of Caribbean economies.

**Figure 3: A quarter are affluent**

<table>
<thead>
<tr>
<th>What is your net investable wealth?</th>
<th>What is your annual income?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below USD 500K</td>
<td>Less than USD 50K</td>
</tr>
<tr>
<td>USD 100K - 250K</td>
<td>USD 50-100K</td>
</tr>
<tr>
<td>USD 250K - 1Mn</td>
<td>USD 100-200K</td>
</tr>
<tr>
<td>Above USD 1Mn</td>
<td>More than USD 200K</td>
</tr>
<tr>
<td>75%</td>
<td>32%</td>
</tr>
<tr>
<td>14%</td>
<td>42%</td>
</tr>
<tr>
<td>8%</td>
<td>21%</td>
</tr>
<tr>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: infoDev Caribbean Diaspora Survey, April-May 2013

**ENGAGEMENT BACK HOME**

Over 85 percent of diaspora members give back to the Caribbean in some way, shape, or form. While the majority send remittances, make donations, buy property or invest in a venture, many others are involved as volunteers or mentors (See Figure 4). A large number of diaspora members are active in their high-school alumni associations, a source of deep affiliation and nostalgia. Visiting family and friends in the Caribbean is another key source of engagement. Almost 60 percent of diaspora members make the trip home at least once a year and 24 percent travel home more than twice a year.

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1 infoDev is a global partnership program within The World Bank Group that pioneers on-the-ground approaches to supporting growth-oriented entrepreneurs in developing countries. The program develops and implements scalable programs in the thematic areas of mobile, climate, agribusiness and women-led entrepreneurship.

2 Angel investors are affluent individuals who invest their own capital and time directly into unquoted companies, to which they have no family connection, in return for ownership equity.

3 The structured 40-question online survey was distributed through various diaspora organizations and through social media channels. It was open for a period of 6 weeks. Respondents therefore formed a random sample of diaspora members claiming affiliation with the following 31 countries or territories: Antigua and Barbuda, Aruba, Anguilla, The Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Colombia, Cuba, Curaçao, Dominica, the Dominican Republic, Grenada, Guadeloupe and dependencies, Guyana, Haiti, Honduras, Jamaica, Martinique, Montserrat, Puerto Rico, Saint Barthélemy, Saint Kitts and Nevis, Saint Lucia, Saint Martin, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and the US Virgin Islands.
Against a backdrop of already significant engagement back home, when asked whether they would like to be “more connected” to their home country, 90 percent of the diaspora remarkably responded positively. This demonstrates a very strong, but latent opportunity for increasing the level of engagement from the diaspora in a meaningful way. However, there are a number of constraints to increased engagement cited by diaspora members (See Figure 5). These range from weak legal frameworks, macroeconomic and political instability, and crime, among others. Addressing these sources of dissuasion should be a priority going forward.

A number of focus group participants cited the need to address some of these constraints, particularly transparency and governance, as part of investing in diaspora bonds. They expressed greater interest in opportunities where they could not only “touch and feel” the investments being made, but also to have an active role. Thus, they prefer to give directly to family and friends, alma maters, and organizations they know and trust personally. This explains the high level of interest the diaspora expressed in serving as mentors, which require a person-to-person connection (85 percent noted a desire to mentor their compatriots).
INVESTMENT AND FINANCIAL INTERESTS

While mentorship is a very meaningful resource that the diaspora can provide, the most impactful contributions that they can make are through their investments in business ventures back home. In fact, 40 percent of diaspora respondents have already invested in a business venture, broadly defined as any company in its early stages. Of these investments, 57 percent were ventures based in the Caribbean (See Figure 6). This means that 23 percent of all diaspora members have made investments in new ventures within the Caribbean region. This is a remarkable finding as it provides clear evidence that diaspora dollars are already flowing into new ventures in the region and that these funds come from relatively sophisticated investors.

A closer look at accredited investors shows significant differences in the ability and risk appetite of the diaspora community. Looking at historical behavior, 26 percent of accredited investors, compared to 13 percent of all investors from the diaspora, have made investments of USD 100,000 or more in new business ventures, demonstrating the quality and desirability of opportunities available in the region. Looking forward, 40 percent of accredited investors as compared to 14 percent of all diaspora investors are willing to invest over USD 100,000 each year for a five year period in startups and high-potential, growth-oriented startups in the Caribbean.

**Figure 6: Diaspora are already investing in startups, many of which are based in the Caribbean**

<table>
<thead>
<tr>
<th>Have you previously invested in a start-up or early stage company?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Where was the start-up based? (Select all that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caribbean</td>
</tr>
<tr>
<td>Caribbean</td>
</tr>
<tr>
<td>Others</td>
</tr>
<tr>
<td>Others</td>
</tr>
</tbody>
</table>

Source: infoDev Caribbean Diaspora Survey, April-May 2013
A closer look at accredited investors shows significant differences in the ability and risk appetite of the diaspora community. Looking at historical behavior, 26 percent of accredited investors, compared to 13 percent of all investors from the diaspora, have made investments of USD 100,000 or more in new business ventures, demonstrating the quality and desirability of opportunities available in the region. Looking forward, 40 percent of accredited investors as compared to 14 percent of all diaspora investors are willing to invest over USD 100,000 each year for a five year period in startups and high-potential, growth-oriented startups in the Caribbean.

These findings are also perplexing as practically all focus group and interview participants noted awareness of deals as a critical missing link in their attempts to make an investment, suggesting that a platform that showcases interesting business venture opportunities could serve as a critical match-maker for increased investment flows. At present, these matches are made almost entirely through friends and family (86 percent of investors learned about their investment opportunity through this source); however, this method limits the diaspora to a narrow universe of potential deals. It stands in stark contrast to the actual desires of the diaspora investor community, who take a regional view for their portfolios. When asked about the countries in which they are interested in making investments, diaspora investors always listed more than one country, providing further evidence that they are seeking to make deals in multiple destinations, beyond their country of primary affiliation (See Figure 7).

![Figure 7: Diaspora investors take a regional view and are not biased to their country of origin](image)

Historically, diaspora investments in startups have concentrated on a number of sectors ranging from entertainment and the arts to consulting and retail to real estate and manufacturing. These interests are also shifting with the times. Looking forward, sectors such as green energy, mobile applications, education and agribusiness are most attractive among diaspora investors (See Figure 8). In the case of green energy and technology, future investment interest is forty times greater than actual investment history. A need for business incubation services that target entrepreneurs in the green energy and mobile applications sectors is therefore important in meeting the demand and interests of diaspora investors.
**Figure 8: Investors interested in a variety of sectors**

<table>
<thead>
<tr>
<th>Sectors diaspora have invested in (that you funded) in? (Check all that apply)</th>
<th>Sectors diaspora are interested in (n=400)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entertainment, leisure, music</td>
<td>Entertainment, leisure, music</td>
</tr>
<tr>
<td>Business consulting</td>
<td>Business consulting</td>
</tr>
<tr>
<td>Agriculture</td>
<td>Agriculture</td>
</tr>
<tr>
<td>F&amp;B and tobacco</td>
<td>F&amp;B and tobacco</td>
</tr>
<tr>
<td>Culture and arts</td>
<td>Culture and arts</td>
</tr>
<tr>
<td>Education</td>
<td>Education</td>
</tr>
<tr>
<td>Retail, wholesale</td>
<td>Retail, wholesale</td>
</tr>
<tr>
<td>Real estate</td>
<td>Real estate</td>
</tr>
<tr>
<td>Health, fitness, pharma</td>
<td>Health, fitness, pharma</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Marketing, PR</td>
<td>Marketing, PR</td>
</tr>
<tr>
<td>Mobile platforms, internet</td>
<td>Mobile platforms, internet</td>
</tr>
<tr>
<td>Private equity</td>
<td>Private equity</td>
</tr>
<tr>
<td>Green energy &amp; tech</td>
<td>Green energy &amp; tech</td>
</tr>
<tr>
<td>Venture capital</td>
<td>Venture capital</td>
</tr>
</tbody>
</table>

% of respondents (n=88) % of respondents (n=400)

Source: infoDev Caribbean Diaspora Survey, April-May 2013
Undoubtedly, the Caribbean region is viewed as a destination with a great sense of opportunity and hope among the diaspora community. The infoDev Caribbean Diaspora Survey has shed light on the Caribbean diaspora’s characteristics and investment interests. The diaspora is a sizeable, well educated, and affluent population that remains very involved in their home country, and is interested in engaging even more back home. There is investment interest towards both specific Caribbean countries and towards specific sectors. This willingness and ability to engage represents a significant untapped potential for Caribbean nations. Whether these countries can tap this potential will depend on whether they are able to reduce the barriers to, and improve the avenues for, further engagement with the Caribbean diaspora. The diaspora can indeed play an important role in the Caribbean region’s development story – but it will require leadership to lower barriers to engagement, facilitate structured opportunities and increase information transparency.

Policies that address investment climate challenges such as legal complexity and enforcement can provide a significant first step in lowering barriers to engagement. In the long term, diaspora investments and their deals in the region can serve as a proof of concept to the rest of the world and demonstrate that the Caribbean has viable high growth enterprises and is open for business.
12

YOUTH UNEMPLOYMENT IN THE CARIBBEAN

Mónica Parra-Torrado
ABSTRACT

This chapter describes the trends in unemployment since 2000 for most countries in the Caribbean. In particular, it presents the landscape of youth unemployment in the Caribbean and focuses on two main factors slowing the youth’s integration into the labor market: lack of skills and lack of information. It also discusses the costs and risks associated with youth unemployment and NEET status (not in employment, education or training). Finally, it discusses two main policy areas for needed intervention in the Caribbean: (i) collection of data and information systems and (ii) active labor market policies.

INTRODUCTION

Global economic shocks coupled with natural disasters have left most Caribbean countries with zero to negative growth and high unemployment rates. The Caribbean region was strongly affected by the last great financial crisis, which resulted in a regional average of zero economic growth in 2010. While some countries like Anguilla and Antigua and Barbuda were worse hit, and experienced negative rates of 18% and 12% respectively, others, like the Dominican Republic and Guyana, experienced a slowdown but did not see negative rates. The economic collapse in the United States and Europe, and more recently, a fall in commodity prices (induced by a softening in the Chinese demand for raw materials) led to a sharp decrease in tourism, remittances and financial activity in the Caribbean countries. The widespread recession, in addition to high indebtedness and fiscal imbalances, has led to a deterioration of labor market conditions in the past years. At the same time natural disasters have periodically taken a large toll on the region, and have become a greater source of vulnerability, affecting lives, infrastructure and employment.

The purpose of this chapter is to evaluate the nature of youth unemployment in order to propose policy options to address it. It is organized in three sections. The first section describes the trends and patterns of total unemployment. The second section focuses on youth unemployment. The third and final section discusses policy considerations.

Data on unemployment and other labor market outcomes is scarce in the region. This chapter puts together data from different sources including the World Banks’ World Development Indicators and reports, ILO’s Key Indicators of Labor Markets, and specific official data and reports produced by some of the countries. Official government data was used in cases when more than two sources were found. A detailed description of the data used is presented in Parra Torrado (2014).

UNEMPLOYMENT LEVELS, TRENDS AND PATTERNS

Unemployment rates and trends varied among the Caribbean countries with the most rapid increases registered in The Bahamas, Barbados, St. Lucia and Belize. In The Bahamas unemployment nearly doubled from 7.9% in 2007 to 13.7% in 2011, a 73% increase. In Barbados, unemployment rose from 7.4% in 2007 to 11.6% in 2012, an increase of 57%. Although the latest available unemployment figure for Belize is 13% in 2009, it already represents a 53% increase compared to the 2007 unemployment rate of 8.5%. Finally, unemployment in St. Lucia rose from 14% in 2007, right before the 2008 crisis, to 20.6% in 2012 representing a 47% rise. Jamaica, Grenada, Antigua and Barbuda experienced slower growth in unemployment. In Jamaica unemployment increased from 9.4% in 2007 to 12.7% in 2011. In Grenada, unemployment reached 29% in 2010 from 25% in 2008, an already high pre-crisis rate; it was 10.2% in 2001. In Antigua and Barbuda, unemployment was 10% in 2011, 1.6 percentage points higher than in 2001 (8.4%).

The Dominican Republic and Guyana have maintained persistently high unemployment rates while Trinidad and Tobago experienced a decreasing unemployment rate. The Dominican Republic experi-

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1 This average estimation includes Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, the British Virgin Islands, Dominica, the Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago.
2 For a more extensive summary of available statistics, see Parra Torrado (2013).
3 External and domestic public debt in the Caribbean surpassed 76% of GDP on average in 2012, and it reached ratios greater than 100% in Jamaica and St. Kitts and Nevis (ECLAC, 2014).
4 Some examples of costly natural disasters are hurricanes Ivan (2004), Dean (2007), Omar (2008), Tomas (2010), Tropical Storm Nicole (2010), and Haiti’s earthquake in 2009.
enced higher unemployment rates during the early 2000 years, in particular in 2004 when it reached 18.4%, the highest rate in the last thirteen years, declining thereafter to 14% in 2008 and remaining unchanged since then. Guyana has maintained unemployment at around 21% since 2007, after experiencing a peak of 28.5% in 2006. In contrast to the rest of the countries with available data, Trinidad and Tobago experienced a decreasing unemployment rate from 2000 until 2008, and it has remained practically unchanged since then. At the beginning of the decade, the unemployment rate in Trinidad and Tobago was 12.1% and in 2008 it decreased to 4.6%, the lowest rate in the period. Currently, unemployment represents 4.8% of the labor force in the country, the lowest rate in the region. Nonetheless, this figure should be taken with caution as it masks high youth unemployment rates, as discussed later.

**Unemployment in the region tends to be of long duration.** According to a set of four country studies undertaken in the region between 2007 and 2010 (Country Assessment of Living Condition Barbados 2010, University of the West Indies, 2012; Country Poverty Assessment Dominica 2008-09, Kairi Consultants Limited, 2010a; Country Poverty Assessments Grenada, Carriacou and Petit Martinique 2007/08, Kairi Consultants Limited, 2010; and Country Poverty Assessment St. Kitts and Nevis 2007/08, Kairi Consultants Limited, 2009), a large share of individuals spend more than a year unemployed after they lose or leave their job. Half of the unemployed in Dominica (51%) and in Grenada (48%), and one third of unemployed in Barbados (34%) and St. Kitts and Nevis (32%) have been unemployed for more than a year. There is no more-recent data on the duration of unemployment in these countries but given current labor market conditions as well as increasing unemployment after the financial crisis and other external shocks, it can be expected that duration of unemployment has not improved.

**Unemployment is considerably higher among females than among males in most countries.** According to the most recent available data on unemployment by gender in the region, women are more affected than men in most countries with the exception of The Bahamas (2011), as shown in Figure 1. The worst case is Belize, where female unemployment was 20% in 2009, almost three times that of males. In other countries female unemployment is nearly twice as large as male unemployment. For instance, in Grenada female unemployment in 2008 was 31.8% while for males it was 17.9%, 14 percentage points higher. Even in countries with lower unemployment rates such as Dominican Republic, Jamaica, St. Lucia, and Trinidad and Tobago, unemployment for women exceeds that of men by at least 80%. However, the difference is smaller in Guyana (49%) and even less so in Barbados (13%).

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1 See Parra-Torrado (2014) for sources on unemployment for each country.
2 Grenada’s 2013 Budget Statement mentions that between 2008 and 2012 unemployment in Grenada doubled, but unfortunately no hard data was found to confirm this fact.
3 Unfortunately, data for the years in between these two years, which would give a clearer vision of the effect of the crisis, is not available.
4 Trinidad and Tobago had the lowest rate among those countries in the region with unemployment data for 2012. For instance, in 2007/2008, St. Kitts and Nevis had an unemployment rate of 5.1% (6.3% in St. Kitts and 1.5% in Nevis) but more current data is unavailable.
5 Even though these figures do not refer to complete unemployment spells, they give a sense of the dynamics of labor markets in these countries, in particular on unemployment duration.
6 Dominican Republic (126%), Jamaica (79%), St. Lucia (85%) and Trinidad and Tobago (84%).
However, for some countries gender gaps have been decreasing in recent years, although not due to a decrease in female unemployment but rather to an increase in male unemployment. In the second half of the past decade, the difference between the unemployment rate for females and males has narrowed in a group of countries. This is mainly due to the increase in male unemployment during the years of economic crisis, a trend that has been noted in a number of OECD countries including the US (Albanesi and Sahin, 2013). In The Bahamas, unemployment among women was about 2 percentage points higher on average than among men until 2009, when this difference decreased to zero due to an increase of 87% in the men’s rate. Similarly, in Barbados this unemployment gap closed in 2009 and 2010 due to a faster increase in men’s unemployment rate compared to women; however, the rising trend reverted temporarily for men in 2011 and for women in 2012, when the gender difference in this country reached one of its narrowest points, although at higher levels of unemployment for both genders.

The gender story has been more positive in the Dominican Republic. Between 2000 and 2007 the unemployment rate for women was around 17 percentage points higher than men’s with the largest gap reached in 2004 (20 percentage points). In 2008 the gap narrowed to 14 percentage points and continued this trend until 2011, reaching 11 percentage points (Parra Torrado, 2014). This result, unlike other countries, derives from a decrease in the unemployment rate for women (from 30.7% in 2004 to 21.5% in 2011), accompanied by a relatively constant unemployment rate for men. However, in 2012 this trend worsened again, with women’s unemployment rate increasing to 22.1% and men’s unemployment rate decreasing slightly to 9.8%.

12 Another interesting result is that the female unemployment gap widens with age in all countries as shown in Parra Torrado (2014).
YOUTH UNEMPLOYMENT LANDSCAPE

Youth are at higher risk of unemployment. Although the information on unemployment by age in the region is scarce, available data shows that in most countries youth unemployment is double the rate of total unemployment. Among Caribbean countries with available data, the highest youth unemployment rates are found in Barbados, Trinidad and Tobago, Jamaica and The Bahamas where youth unemployment is about 2.4 times higher than total unemployment. According to the 2010 Survey of Living Conditions of Barbados, the youth unemployment rate was 27.6% compared to 11.1% for the entire population. In Trinidad and Tobago, the unemployment rate for youth was 12% in 2012 while the total unemployment rate was only 4.8%; and in Jamaica (2011) and Barbados (2007) it was 30.1% and 18.9% compared to a total unemployment rate of 12.7% and 7.9%, respectively. Youth unemployment rates in other countries like Guyana (2011) and Dominican Republic (2007) are around two times as high the total unemployment rates while Grenada (2008), St. Lucia (2010), and St Vincent and the Grenadines (2008) have experienced youth unemployment rates around 1.7 times higher than the total unemployment rate (see Figure 2). Also, in St. Lucia 40% of unemployed were younger than 25 in 2011.

Teenagers have the highest unemployment rates. According to data on unemployment by age groups for Barbados, Belize, Dominica, the Dominican Republic, and Trinidad and Tobago, individuals younger than 20 years have the highest unemployment rates. In Barbados, individuals aged 15 to 19 years old face unemployment 5 times higher than the total unemployment rate: 47% compared to 14% for those aged 20-44 years old. In Belize, 43% of women in the labor force younger than 20 years old are unemployed compared to 28% of those between 20 and 24 years old and 16% for those between 25 and 49 years old. The comparable rates for men are 26% versus 16%, and 5% respectively. In Dominica, where 50% of the unemployed are younger than 30, the unemployment rate among teenagers practically doubles that of workers aged 25 to 29 years old, and in the case of males it is 2.8 times larger. Likewise, in the Dominican Republic, the unemployment rate for teenage females doubles that of individuals between 20 to 39 years old and for teenage males it is about three times that of such group. In Trinidad and Tobago the situation is quite similar.

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13 According to the Barbados Continuous Labor Force Survey (LFS), the national unemployment rate in 2010 was 10.7% (Barbados Statistical Office, 2010). Unfortunately, the Barbados LFS provides unemployment figures for the age group of 15-19 years old, rather than 15-24 years old as in other countries, which makes it unsuitable for cross-country comparisons.

14 The unemployment rate for those older than 19 is 10.8%: 10% for male and 11.6% for female.

15 In Dominica, the individuals under 20 years account for 13.8% of total unemployed (17.5% of female unemployed and 10.9% of male unemployed), individuals younger than 25 years old account for 36.4% of total unemployed (44.2% of female unemployed and 30.4% of male unemployed), and individuals younger than 30 years old account for 49.7% of total unemployed (55.4% of female unemployed and 45.3% of male unemployed).

16 Note that although female youth unemployment is higher than male youth unemployment, the age gap is wider for males than for females.
High youth unemployment in the Caribbean is consistent in general with similarly high youth unemployment rates worldwide, but some Caribbean countries are among those with the highest youth unemployment rates in the world. Figure 3, presents the unemployment rate for the total population as well as for the youth in all countries with available data in 2011 (Parra Torrado, 2014). Two observations can be made from it. First, in practically all countries youth unemployment is double that of the total population (2.3 times, on average)

17 Even in countries with low total unemployment such as Trinidad and Tobago where the national unemployment rate is as low as 4.8%, the youth unemployment rate reached 12% in 2012 (2.5 times higher)

18 In 2011, the national unemployment rate in Trinidad and Tobago was 5.2% while the youth unemployment rate was 13%.
A. Some key factors contributing to youth unemployment

While no empirical studies on the individual determinants of youth unemployment are available for the Caribbean, some of the factors are likely to be similar to other countries. For example, several studies have found that poor educational attainment, disadvantaged family background and test-measured ability and behavioral unobserved skills predispose individuals into unemployment (Gregg, 2001). Also, institutional arrangements in the education and training system as well as in the labor market (Eurofound, 2012), skills mismatch, low labor demand and specific vulnerabilities are factors that further contribute to youth unemployment. That said we present the relevant evidence from the Caribbean on select factors that may contribute to youth unemployment in the region: lack of skills and lack of information. These are detailed in what follows.

One of the main factors contributing to youth unemployment is the lack of right skills for the job. Quality of education in the region is low. In addition, the set of skills that youth acquire are not entirely relevant to the labor market needs; there is a mismatch of supply and demand of skills. This is aggravated by their lack of work experience, since skills are mastered, and sometimes even acquired, on the job.

The quality of education in the region has shown to be low, in spite of efforts and significant public investments in education. The passing rates of the Caribbean Secondary Education Certificate (CSEC) in Math and English are around 45% on average and it is not better in other subjects such as Chemistry and Information Technology, to name some. Furthermore, in 2009 only 21.36% of students passed five or more CSEC examinations, which is the acceptable level of performance for matriculation and entry-level employment (Jules, 2010). The worst part of this story is that the rest of the students are far from attaining this goal: 28.14% did not pass any exam, 24.65% passed only one, 12.62% passed two exams, 7.36% passed three exams, and only 5.88% passed four exams.

Employers face considerable difficulty in finding skilled youth. Employers in Caribbean countries, report a shortage of skills as one of the key constraints in hiring workers. The 2008 Grenada Employer’s Needs Assessment Survey, carried out under the World Bank’s Skills for Inclusive Growth Project, found that 66% of employers were having difficulty finding new workers and were also unable to find workers with the required skills (Hickling Corporation, 2008). Results from the Caribbean Labour Market Survey (CKLN, 2006) show that the main issue employers face in their recruiting efforts is that applicants have poor or no employment skills (42%) followed by lack of qualified workers (31%). Also, according to a recent study in The Bahamas (IDB, 2013), the main difficulty employers face for hiring is the under-qualification of applicants (33.8% of employers), followed by applicant’s lack of experience (28.8% of employers), and by applicant’s lack of soft skills (27.5%).

The shortage of skills is a dominant bottleneck for employers worldwide. According to a recent study in nine diverse countries (Brazil, Germany, India, Mexico, Morocco, Saudi Arabia, Turkey, the United Kingdom, and the United States) lack of skills is one of the main problems employers face when recruiting for entry-level positions: 39% of employers mentioned a skills shortage as a leading reason. In addition, 36% of employers reported lack of skills as a cause of significant problems in terms of cost, quality, and time in their companies (Mourshed, Farrell and Barton, 2011). Another, more comprehensive, study by Manpower, (2013) in 42 countries and territories corroborates this result, finding that a lack of technical skills is the main factor behind talent shortages (34% of employers cited this as a chief factor) while lack of soft skills is the fourth factor (19% of employers cited this as a chief factor).

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16 Cunningham Sanchez-Puerta and Wuermli (2010) propose five general categories of constraints that may limit young people’s access to labor market: job-relevant skills constraints, lack of labor demand, job search constraints, firm start-up constraints and social constraints.

20 Brazil, Germany, India, Mexico, Morocco, Saudi Arabia, Turkey, the United Kingdom, and the United States.
Moreover, through a meta-analysis of labor demand surveys, Cunningham and Villaseñor (2014) find that half of employers rank socio-emotional skills as the most important skill, followed by higher-order cognitive skills (29%) and technical skills (16%).

They find that the greatest skills gaps are in socio-emotional and technical skills. Furthermore, the recent study by Mourched et. al. (2011) shows that the supply of skills is not meeting the needs of labor demand: 72% of educators compared to 42% of employers think graduates are adequately prepared for the labor market.

Inexperience, strongly tied to lack of skills, also contributes to high youth unemployment rates in the Caribbean. According to the earlier cited country studies (Country Assessment of Living Condition Barbados 2010, Country Poverty Assessment Dominica 2008-09, Country Poverty Assessments Grenada, Carriacou and Petit Martinique 2007/08, and Country Poverty Assessment St. Kitts and Nevis 2007/08) an important proportion of job seekers has never worked before, a fact that generally makes it more difficult to find labor opportunities. In St. Kitts and Nevis one third of the unemployed have never worked while in Dominica and Grenada about one in four has no work experience at all. In a recent labor demand study, lack of experience stands as the third most important obstacle to filling vacancies, with 24% of employers agreeing to this being the most important issue (Manpower, 2013). According to the mentioned study in The Bahamas, prior work experience is the second most important hiring criteria, with 34.5% of employers marking it a decisive factor for hiring. Also, 28.8% of employers claimed having difficulty hiring workers due to applicant’s lack of experience (IDB, 2013). As younger workers are less experienced than adults, they also tend to be less attractive candidates. Employers prefer adult workers, as they, given their work experience, are more likely than younger ones to successfully apply job-specific skills and to have stronger socio-emotional skills and work ethics, and therefore to be more productive in the workplace. Inexperienced candidates are also more costly in the sense that they have to be trained, despite the risk that they might leave or fail to fulfill expectations.

Lack of information is another important factor that constrains youth employment. Informal job-searching methods such as referrals from relatives and friends, or direct contact with employers are commonly used, while information systems or employment offices, which hold better knowledge of the market, are much less used. This informal practice may be effective only for well-connected people with strong networks. However, youth tend to have smaller networks, especially those out of school and employment, and the vulnerable. Employers do not have information on young workers either. Youth generally write resumes basically with information on educational attainment, if any, from which is hard to tell their actual skills. The lack of work experience makes young people less attractive candidates for two main reasons. First, without work experience they cannot obtain referrals regarding their past performance. Second, as mentioned above, employers cite lack of experience as a major obstacle to hiring young people, since they value socio-emotional and technical skills the most, which are proven and acquired on the job.

21 Higher-order cognitive skills refer to logic, abstract and creative thinking, for example.

22 In Mexico, for example, among people aged 15-24 years old, 65.7% search for jobs directly with the employer, 11% ask friends and relatives and 9.4% answer Internet announcements. Only 1.5% resorted to an employment service and 0.9% to an employment agency. Similarly, 58.6% found a job through a friend or relative and 17.9% by contacting directly the employer. Only 0.3% of youth found a job with an employment agency and 0.2% with public employment service (calculations based on ENVIH, 2012).
B. Costs and risks of youth unemployment

High youth unemployment also reflects the NEET phenomenon. In the Caribbean, and worldwide, a significant share of youth is not in employment, education or training (NEET). Information on NEET youth is only available for two countries in the Caribbean: Belize and the Dominican Republic. For Belize, it is estimated that 27.9% of young people ages 15 to 24 are neither in employment, education nor training; 17% of the male youth and 38.6% of female youth. For the Dominican Republic, the estimates of young NEET are higher for males (33.3%) and lower for females (26.9%), while the aggregate figure is 20.9%. The youth NEET rates for these two countries are considerably above the average estimated by ILO for 24 developing economies—(12.4 per cent for young men and 28.1 per cent for young women). Yet, in the case of Belize, the rates are comparable to those in Brazil: 16.4% of male youth and 30% of female youth in 2009 (Kovrova, Lyon and Rosati, 2012). Given the lack of data on the NEET phenomenon in the Caribbean, evidence of declining labor force participation and low school enrollment is presented in the next paragraphs.

The NEET phenomenon may be reflected in a declining labor force participation of youth in the Caribbean over the past decade. This decline has been considerable in some countries such as Jamaica (26% compared to 8% reduction in employment for the overall labor force). This decreasing trend has been stronger and more common for male youths: only the Bahamas, Haiti and Suriname experienced positive growing trends of youth labor force participation. In contrast, in the case of young women, only Barbados, Guyana, Jamaica and St. Lucia experienced negative trends in youth labor force participation over this period. These declining trends may reflect discouragement, or an inability to find jobs. However, these may also be explained partially by a recent improvement in school enrollment in some countries in the region. Other reasons for the low attachment to the labor market of youth, as cited by youth themselves, include over-qualification, low wages or a preference for leisure, stress-free time and freedom (UNDP, 2012).

Despite recent improvements, school enrollment rates are still low in several Caribbean countries, also reflecting the NEET problem. Secondary education is far from universal in most of the countries with available data. Guyana is the closest with an enrollment rate of 92.6%, followed by Barbados with 89% of enrollment, then Antigua and Barbuda, St. Vincent and the Grenadines, and St. Lucia, Jamaica, Dominica and The Bahamas with enrollment rates between 85% and 83%. Belize, St. Kitts and Nevis, the Dominican Republic and, in particular, Suriname have much lower secondary enrollment rates. Tertiary education enrollment rates are available for a reduced set of countries but, in all of these, enrollment rates are quite low, with the exception of Grenada (52.8%) and Barbados (60.8%). The enrollment rate for tertiary education in St. Kitts and Nevis is 18.2% and in Belize and Jamaica, it is about 26% (Parra Torrado, 2014). St. Lucia, Guyana, and Antigua and Barbuda all have tertiary enrollment rates inferior to 15%. Low school enrollment and school completion rates, in addition to low-quality education, narrows the opportunities of youth in the labor market, fueling a vicious cycle of youth discouragement.

Youth unemployment can also reduce future employment prospects and earnings. The literature, theoretical and empirical, on the effects of unemployment on future individual labor outcomes is extensive and indicative of important scars left by unemployment spells on the labor profile of those affected. For instance, a recent study by Chaaban, (2009) on a set of Caribbean countries estimates that the cost of youth unemployment, as forgone wages and lost productivity, ranges between 0.65% of GDP in Anguilla and 2.46% of GDP in St. Lucia. Furthermore, a series of studies based on data from the UK (Gregg, 2001, and Gregg and Tominey, 2005) have concluded that unemployment in

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23 According to the World Development Report on Jobs (World Bank, 2012), 621 million young people are idle, that is, they are neither in school or training, nor working or searching for a job. The report estimates that the rate of idleness ranges between 10 and 50 percent among those aged 15 to 24 years old.
24 Author’s estimation based on ILOSTAT (n.d.). Note that for statistical purposes, ILO defines youth as persons between the ages of 15 and 24. Youth not in education are those who were neither enrolled in school nor in a formal training program (e.g. vocational training) during a specified reference period (e.g., one week).
25 ILO’s average is estimated based on household surveys across different years.
26 A descriptive analysis of labor force participation and secondary enrollment dynamics shows evidence of decreasing youth LFP in favor of secondary school enrollment in Belize, the Dominican Republic, Guyana, St. Lucia and St. Vincent and the Grenadines. However, further analytical work is needed in order to show causality.
early life increases the chances of experiencing unemployment spells in adult life for men and to, to a lesser extent, for women. Also, they find that youth unemployment reduces lifetime earnings with the effect being slightly reduced if higher education is obtained or future adult unemployment spells are avoided. In short, these studies find evidence of permanent scars of youth unemployment on labor profiles: after 20 years of the experiencing youth unemployment of at least 13 months the negative effect on earnings ranges between 10% (if unemployment has not recurred) and 30% (if unemployment recurs).

Note, however, that this estimated cost does not include the forgone opportunity of acquiring skills on-the-job, the psychological costs associated with unemployment, and the costs associated with risky behavior.

Box 1. Active Labor Market Policies in St. Lucia

An inventory of active labor market policies (ALMP) was created for St. Lucia by a World Bank team in 2013 collecting data from official documents and interacting with government representatives.

Spending on ALMPs in St. Lucia in 2012 represented 1.16% of GDP. This percentage is high compared to OECD countries, which in 2011 spent less than 1% of GDP, with the exception of Belgium (1.6%), Denmark (2.3%), Sweden (1.1%) and the Netherlands (1.1%). Compared with Latin America, spending in St. Lucia is particularly high; Chile allocated 0.45% of its GDP in 2010, and Argentina and Colombia allocated 0.45% and 0.35%, respectively, in 2010.

Figure 4 shows the distribution of spending on ALMPs by program category. The largest share of spending (47.8%) went to direct job creation, followed by apprenticeship programs (36.7%), training (9.6%) and start-up incentives (5.8%). Direct job creation has also the largest number of beneficiaries (78.3% of the total), followed by apprenticeship programs (10.1%), start-up incentives (7.2%), and training (4.5%). However, the share of total ALMP spending dedicated to youth programs seems to be low, but there is not clear evidence.

A set of challenging characteristics emerged from the analysis of the ALMP in St. Lucia that may be preventing individuals from receiving assistance in improving their job prospects. First, in St. Lucia there is no unique governing body responsible for the management of all ALMPs. Employment and education matters have been integrated in the newly reconfigured Ministry of Education, Human Resource Development and Labour. However, the also newly reconfigured Ministry of Social Transformation, Local Government and Community Empowerment is responsible for managing and financing five of the fourteen existing activation and employment programs. The National Initiative to Create Employment (NICE) program, under the Office of the Prime Minister, was conceived as an umbrella instrument, which would absorb all other programs, but in practice the programs have continued existing without change, and coordination and collaboration between actors is marginal. The lack of coordinated management has led to a duplication of efforts. For instance, in St. Lucia there are five enterprise-incentive programs. This institutional arrangement needs a clear coordinating structure that allow for an articulated functional provision of services. Second, St. Lucia does not have a single institution that compiles vacancies with unemployed workers. Some programs provide assistance for job search, such as HOPE, Skills for Inclusive Growth and NAPP, but the country does not offer a single public service for the intermediation of labor supply and demand. Third, St. Lucia does not have a unique registry of beneficiaries and their needs that would support a more efficient provision of services. Fourth, most activation programs do not include a monitoring and evaluation component that could provide feedback to the design and implementation of the program and, in turn, an opportunity to correct mistakes and maximize good results. Furthermore, there is not a policy of evaluating the whole ALMP strategy based on the country’s labor market needs and the cost-effectiveness of the programs.

Figure 4: Distribution of spending on AMLPs in St. Lucia, 2012

Source: Parra-Torrado and Soto (2013)
Unemployment and NEET status affect negatively the individual’s mental health, and these effects are not compensated when securing employment. Studies on mental health have shown that experiencing unemployment decreases mental health scores, indicating a continued negative effect on mental health, increasing for those individuals experiencing more than one spell (Milne, Spittal, Page, and La Montagne, 2013). Mckenzie et al. (2014) find that moving out of employment into inactivity and individual deprivation has greater effects on mental health and psychological distress than changes in household income or area deprivation. Furthermore, Flint, Bartley, Shelton, and Sacker (2013) find that the negative effects of joblessness are not compensated by the positive gains in psychological wellbeing from transitioning into employment as the latter are smaller.

Unemployment, NEET status and early school leaving may lead to youth involvement in risky behaviors. In addition to the already mentioned costs, youth unemployment and NEET status generates discouragement, disaffection, isolation (Eurofound, 2012), and lack of ownership and of purpose among youth. These sentiments in turn increase the chances of youth engaging in risky activities such as adolescent fertility and sexual risky behaviors, substance abuse, and crime and violence. Parra Torrado (2014) presents evidence of these potential risks in the Caribbean as well as their associated costs.

POLICY DISCUSSION AND RECOMMENDATIONS:

The diagnosis above leads to two main policy areas for discussion: (i) collection of data and creation of information systems; (ii) active labor market policies, which include, inter alia, labor market intermediation, and employment/training programs—especially those targeted to youth. It should be noted that active labor market policies and programs are just one policy area that needs to be tackled in order to address youth unemployment. Ensuring macroeconomic growth, reducing vulnerability to shocks, developing a vibrant private sector, and investing in a sound education system are other policy areas that are critical for fostering growth and promoting employment. However, a discussion of these policy areas is outside of the scope of this paper.

A. Collection of data and information systems

In order to improve labor market policies, the current lack of information about labor markets needs to be further addressed. It would be useful for the region to produce detailed statistics of labor markets conditions and outcomes that would help answer simple questions, including what the labor force looks like and what the quality of jobs in the Caribbean is. It is important for countries to collect micro-data on a regular basis to estimate basic indicators of employment status, by gender, age group, education level and sector of work for the employed. It would also be useful to have information on the quality of jobs, such as labor income, hours of work, type and terms of contract, social security, and labor benefits, among others. For the unemployed and inactive, it would be useful to know what job search methods exist (if any), how long they might spend searching for a job or being inactive, and the barriers they face, among other variables. Collecting information on personal and household characteristics, including sources of income, such as remittances, as well as information on migration at the individual level, would also be useful. In addition, countries should implement monitoring and evaluation systems at all levels in order to adjust the design and implementation of these programs according to results and outcomes, as well as to changes in the conditions of the local economy.
There are some recent promising initiatives in the region aimed at closing the information gap. A new World Bank IDF grant\textsuperscript{28} aims at improving capacity for labor market monitoring and the establishment of information systems for improved labor market performance in a group of Caribbean countries\textsuperscript{29}. The main goal of this grant is to strengthen the institutional capacity of government ministries and agencies, through the University of the West Indies, which will be responsible for improving labor market policies and programs, by establishing a culture of monitoring and evaluation, and information management in this group of Caribbean countries. Furthermore, a World Bank team from the Poverty Reduction and Economic Management Unit has been supporting the efforts of the OECS Statistical Office to strengthen the statistical units in OECS countries and develop harmonized labor force surveys\textsuperscript{30}. In fact, the OECS Member States are working towards establishing a Sustainable Household Data Collection Programme (SDP) for the Measurement of Living Standards in the OECS under the leadership of the OECS Living Standards Measurement Committee (LSMC), with the additional support of the ILO.

B. Active Labor Market Policies

There is a need for effective and affordable labor activation policies in the region. Active labor market policies (ALMPs) form a key pillar of social protection systems. The two other pillars are: social assistance for the poor and social insurance to help individuals manage shocks\textsuperscript{31}. ALMPs include labor market intermediation and job counseling at public employment services, training and skills development programs, employment incentives, direct job creation, and start-up incentives, among others. An analysis of some of the active labor market programs in the region indicates that while such programs exist, their coverage is small and there is considerable redundancy, duplication, lack of coordination and evident gaps in the supply of such services. An analysis of active labor market policies in St. Lucia provides an example of the challenges faced by current arrangements of programs including poor coordination, weak provision of key services, and inadequate or inexistent monitoring and evaluation (See Box 1).

As noted above, the lack of relevant job skills, in addition to information asymmetries, are likely to remain key constraints to youth employment. In what follows, youth activation interventions aiming at addressing these constraints are briefly presented in three large groups: (i) activation programs that aim at improving skills; (ii) programs that focus on matching labor supply and demand, and (iii) programs that combine both skills development and matching labor supply and demand. To finalize, a brief argument in favor of the third group\textsuperscript{32}, is presented, as well as some implementation modalities.

Programs that focus on skill development usually aim to provide participants with education towards attaining a degree, generally vocational, high school or equivalent, in order to improve their chances in the labor market. Some examples of this type of programs are ChileCalifica in Chile, and the National Guard Youth ChalleNGe and Job Corps in the United States.

\begin{footnotesize}
\begin{itemize}
  \item[28] The grant is the IDF Grant Strengthening Labor Market Monitoring and Performance in the Caribbean.
  \item[29] Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines.
  \item[30] St. Lucia, St Kitts and Nevis, Antigua, Dominica, Grenada, St. Vincent and the Grenadines.
  \item[31] The emphasis of the system (choice of pillars) and complexity varies by country and by the country's context (e.g. fiscal and administrative capacity).
  \item[32] A broader discussion of the programs' advantages and disadvantages, and their impact evaluations, can be found in Parra Torrado (2014).
\end{itemize}
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Programs that focus on matching employers and job seekers can take the form of job placement programs or subsidized youth employment programs. For instance, programs like the public employment service of Argentina (Servicio Público de Empleo) and Jobcentre Plus in the UK provide diverse services to both employers and job seekers. In the region, an example is the One Stop Job Centre (OSEC) in Antigua and Barbuda, which is currently being transformed to become fully operational under the World Bank’s Public and Social Sector Transformation Project. Examples of subsidized youth employment programs are Subsidio al Empleo Joven in Chile and Contrato de Aprendizaje in Colombia.

Programs that aim both at developing skills and at bringing together employers and job seekers include versions of a dual vocational education and training program that provides both vocational training and apprenticeship opportunities in firms. These have been implemented in Germany, Austria, The Netherlands, Denmark and Switzerland. Similarly, the Australian industry-led technical and vocational training system combines training, apprenticeships and development of qualifications. Different alternative approaches that combine on-the-job training or work-based activities and job placement initiatives are the Career Academy model and YouthBuild implemented in the United States. Some successful examples in Latin America are two programs by the International Youth Foundation (IYF): Entra 21 implemented in 17 Latin American countries, including Belize and Dominican Republic; and New Employment Opportunities (NEO) implemented in nine Latin American countries, including the Dominican Republic. The Programa Juventud y Empleo provides training, a monetary stipend and a two-month apprenticeship in the Dominican Republic. And in Jamaica, the pilot of the Steps-to-Work program provides training and on-the-job-experiences to a targeted population.

Of all youth programs, those that combine skills development with on-the-job training or work-based activities and job placement components are more effective in improving employability and earnings. Empirical research provides evidence in favor of programs that provide participants with on-the-job training opportunities. Examples are the dual-education model in Germany and Switzerland, apprenticeships and work trials in the UK, Entra 21 in Latin America and YouthBuild and Career Academies in the United States (Lerman, 2013; Eichhorst, Hinte, and Rinne, 2013; Cahuc, Carcillo, Rinne, and Zimmermann, 2013; Eichhorst, Rodríguez-Planas, Schmidl, and Zimmermann, 2012). In the region, the Programa Juventud y Empleo of Dominican Republic has shown positive results and the Jamaican pilot Steps-to-Work-Program has also shown good results and is now being rolled-out on a national scale (Ibarrarán, Ripani, Taboada, Villa, and Garcia, 2012). The success of this approach is due to three factors: on-the-job training, industry participation, and government coordination and regulation.

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33 YouthBuild has also been implemented in Mexico as Jóvenes Constructores de la Comunidad (JCC) with some success in terms of continuation of education or training and employability. YouthBuild presentations can be found at http://www.youthbuildinternational.org/.
34 Argentina, Belize, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.
35 The nine countries are: Brazil, Chile, Colombia, the Dominican Republic, El Salvador, Mexico, Panama, Peru, and Uruguay.
**Skills are better learned on the job, in particular life and work skills.** The strength of these programs is based on the fact that by providing beneficiaries with on-the-job training they get the chance to see how the real world works in terms of the work-specific activity but also in terms of the relationships and situations that evolve in regular days at work. Combining the developing of cognitive and technical skills in academic settings with on-the-job training or work-based activities allows students to see how the topics learned are applied in real life. Also, in working environments students get the chance to face real problems, consequences and challenges that help them in the development of self-confidence, problem-solving and critical thinking abilities, work ethics, among other life and work skills (Lerman, 2013; Halpern, 2012; Halpern, 2009; and Rauner, 2007). Moreover, there is evidence that youth prefer to learn in interactive settings: on the job (62%), hands-on (58%), and multimedia (54%), among others (Moursched et al., 2011).

**The participation and commitment of employers is fundamental.** Having the employers on board in a youth employment and training program is essential for ensuring success. First, employers know their labor supply needs, so a fluent communication between education providers and employers is crucial to make sure that the education being imparted is relevant to the labor market, which will directly improve the employment opportunities of graduates (World Bank, 2011a; Mathews, 2013). Second, a commitment on the part of employers not only to train apprentices on-the-job but also to support their formal technical training, guarantees the sustainability of the program. Furthermore, incorporating mentoring components involving employers into the program strengthens these programs, since youth learn through observation and imitation (Halpern, 2009). Such commitment can be leveraged with the imminent need of employers to overcome the increasing talent shortages. Third, continuing interaction between employers and policy makers to keep information systems up-to-date permits better-designed policies and programs.

**Government coordination and regulation is essential to ensure the quality and functionality of the schemes.** Governments are key actors in youth employment and training programs not only due to their role as policy makers and financial supporters (although private financial support is encouraged) but as coordinators and regulators. It is the responsibility of the government to provide the institutional infrastructure for these programs to evolve. It should provide spaces for communication among actors (education providers, employers, trade unions), guide the dialogue, and make sure that action is taken. Moreover, it is the government’s duty to guarantee the quality of training programs as well as the labor and social protection rights of participants.

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36 Real-life classroom settings are also a newer and interesting approach that has shown better results than traditional classroom settings. An example of this intervention can be found in Colombia with SENA’s new adapted environment classrooms.

37 According to a recent article in the New York Times, companies in the United States have resorted to creating their own apprenticeship programs or partnering with specialized providers in order to create their own labor force with the needed skills (Schwartz, 2013).
A critical element in effective delivery of programs is ensuring that programs are delivered in a coordinated fashion, with strong administration. Setting up a one-stop shop providing tailor-made services allows the job seeker to obtain information on all programs and services provided for his benefit to help him secure a job even though in some cases these programs or services are not directly provided by the official labor institution. Additionally, the one-stop shop allows the coordination of programs and services supply, avoiding duplication and closing any gaps in provision, thus strengthening a systematic approach to social protection. Furthermore, setting-up a one-stop shop allows policy makers to design programs in an interconnected manner to ensure a path out of unemployment towards a self-sustained income generating status. This approach would also facilitate the collection and maintenance of databases to the authorities, for example, using a single data registry and profiling of beneficiaries to enhance service provision.

The heterogeneity of job seekers and their needs must be recognized when providing employment services. Not all unemployed face the same constraints to employment. An essential first step in the provision of employment services is to identify the job seekers’ needs and characteristics. The standard demographics or academic qualification do not explain entirely unemployment spells. The interaction of the individual characteristics with life trajectories better explains the need for an employment service. In fact, an individual facing difficulties with securing a job may not necessarily need a service from an employment office but rather from social services in general. For example, a qualified single woman with children may not be vulnerable in the labor market just for being female but also because of her living situation; she may not need more training or any type of intermediation services but rather affordable child care solutions. A similar argument can be made in the case of a person having difficulties holding a stable job due to mental health problems. A good profiling of the individual helps make clear their needs and allows for a more effective assistance by making it possible to refer them to the right service or program. A tailor-made services approach is more effective in responding to the simplicity or complexity of individual situations. Another clear advantage of this approach is that resources can be better utilized since programs and services can be clearly targeted.

Ensuring programs are cost effective and financially sustainable. Given scarce resources it is important that the government assess which programs are most cost effective and suited to the country context. Therefore, implementing pilot programs, and evaluating them prior to scale up, is essential. More generally, a system of monitoring and evaluation provides a feedback loop to policy makers who can then assess whether programs are well designed, financially sustainable and effective in achieving their outcomes.
CONCLUSIONS
Youth unemployment in the Caribbean is of major concern. However, systematic information on this and other labor market outcomes is only produced for a handful of countries. This chapter aims at filling this gap by presenting data on unemployment and youth unemployment for most countries in the region in a comparative manner. It focuses on two major factors hindering the integration of youth into the labor market. The first major factor is the lack of right skills for the job, due to the low quality of education, the demand for socio-emotional and work skills not imparted in the school system, and to lack of experience. The second is a lack of information, which prevents both youth job-seekers and employers from effectively finding good job matches in the labor market.

This chapter discusses two main policy areas needing intervention in the Caribbean. First, there is a need for producing detailed statistics of labor market conditions to improve diagnostics and to develop monitoring and evaluation systems to provide feedback on program design and implementation. Second, there is a need for implementing effective and affordable active labor market policies that address the skills and information constraints discussed above. This chapter presents three types of programs and argues that programs that successfully combine skills development with on-the-job training or work-based activities and job placement components, are more effective in improving employability and earnings of youth. This is mainly due to the fact that skills are better learned on the job, in particular those skills demanded by employers: life and work skills.

Finally, the chapter discusses four elements that are crucial for effective and efficient interventions. The first element is the commitment and involvement of employers in the design and implementation of youth employment and training programs. The second element is the role of the government as coordinators and regulators. They need to provide the institutional infrastructure, as well as communication opportunities for all relevant actors, and guarantee the quality of training programs and the social protection rights of participants. The third element is ensuring that programs are delivered in a coordinated manner and that heterogeneity of beneficiaries and their needs is recognized in program design, for which a “one-stop shop with tailor-made services” is proposed as a model. The last element necessary for successful employment policies is ensuring that the social protection strategy is cost-effective and financially sustainable.
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QUALITY COUNTS FOR SKILLS AND GROWTH
ABSTRACT

Improving the quality of education is one of the key ingredients for economic growth in the Caribbean. While Caribbean states have made good progress in increasing access, much remains to be done in improving quality of learning outcomes. Despite the high level of investment, quality of education in the Caribbean remains low. Furthermore, the sectoral shift experienced by Caribbean countries, together with the digitization of business processes and production technology, has rendered many repetitive, manual jobs obsolete, while increasing the number of jobs that require non-routine skills. Coupled with the increasingly competitive landscape, the foremost implication of this shift is the increased demand for employees with vastly different skillsets. This policy note argues that necessary actions include investing in early childhood development to ensure that all children develop strong foundation skills, strategically investing in higher education to provide high level skills and research to apply to current technologies, recruitment and retention of qualified teachers, and ensuring availability of high-quality and timely data. Achievement of this goal will also require strengthening the partnership with the private sector. Close collaboration among the Caribbean states in addressing these measures would help improve the efficiency of investments and promotion of learning.

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INTRODUCTION

The collective skills of the workforce are a critical factor for the promotion of economic growth and the improvement of living standards for citizens in the Caribbean. Despite significant investments in formal education, economic growth in the region has slowed in recent years and there is a need for improved labor productivity. This note presents findings from the literature on education and skills development in the Caribbean, and makes the case that quality education and training are essential to achieve the higher growth rates to which the region is aspiring. The note briefly looks at the significant progress that has been made in the region towards ensuring access to education, and then at the data regarding the quality of the outcomes in the formal education system. It then draws attention to four of the key areas to be addressed in the Caribbean formal education system (early childhood education, higher education, teacher quality and accountability), as well as to the importance of finding mechanisms for greater collaboration with the private sector to shape training that better responds to demand for skills.

THE RELEVANCE OF EDUCATION

The quality and relevance of education are of paramount importance to achieving economic growth. World Bank (2007) research shows that test scores serve are a better predictor of economic growth than the number of years of school. A study by Hanushek and Woessmann, (2007) using a database of comparable test scores for over 50 countries, found that a difference of a single standard deviation in tests scores between countries equates to roughly 2 percentage points in annual long-term GDP growth. These findings hold true across high-income, middle-income, and low-income countries and across all geographical regions.

Achieving sustained economic growth through enhanced productivity requires good-quality education that prepares students for the labor market. The labor market, together with the economic landscape of the Caribbean, is changing fast. Falling trade barriers, shifts in global production patterns and technological change have fundamentally altered the nature of production in all areas of economies. In so doing, they have radically modified the structure of occupations and skills, and thus the demands on education. In the Caribbean, the manufacturing and agriculture sectors, which have historically been the main drivers of economic growth and employment, are quickly giving way to services. Today, the services sector (comprised of tourism, financial services and government) is the largest source of employment, accounting for 80 percent of the workforce in OECS countries and the World Bank (Blom and Hobbs, 2008) notes a comparable level in other Caribbean countries.
EDUCATION IN THE CARIBBEAN

Caribbean countries have made significant strides in increasing enrollment in primary and secondary education and have allocated considerable public resources to the education sector. For many years the focus was on ensuring access to, and duration of, studies. Caribbean countries perform well on these dimensions. Since 1960 the average years of educational attainment of the adult population has increased from 4.3 to 10.3, a rate today that is comparable with the South American average and approaches the average of OECD countries.

Table 1: Average Educational Attainment of the Adult Population, 1960-2010

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbados</td>
<td>5.5</td>
<td>9.5</td>
<td>9.9</td>
<td>10.0</td>
<td>9.6</td>
<td>10.5</td>
</tr>
<tr>
<td>Cuba</td>
<td>5.0</td>
<td>7.8</td>
<td>9.9</td>
<td>11.8</td>
<td>10.3</td>
<td>13.1</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>3.3</td>
<td>4.6</td>
<td>6.1</td>
<td>7.7</td>
<td>7.8</td>
<td>9.0</td>
</tr>
<tr>
<td>Haiti</td>
<td>1.2</td>
<td>1.8</td>
<td>3.0</td>
<td>5.4</td>
<td>6.4</td>
<td>6.3</td>
</tr>
<tr>
<td>Jamaica</td>
<td>4.3</td>
<td>5.5</td>
<td>7.8</td>
<td>8.8</td>
<td>10.9</td>
<td>12.0</td>
</tr>
<tr>
<td>Trinidad and Tobago</td>
<td>6.6</td>
<td>7.5</td>
<td>8.1</td>
<td>9.7</td>
<td>10.7</td>
<td>11.1</td>
</tr>
<tr>
<td>Belize</td>
<td>8.8</td>
<td>8.2</td>
<td>8.9</td>
<td>9.8</td>
<td>8.9</td>
<td>10.1</td>
</tr>
<tr>
<td>Caribbean Average</td>
<td>4.3</td>
<td>6.1</td>
<td>7.5</td>
<td>8.9</td>
<td>9.3</td>
<td>10.3</td>
</tr>
<tr>
<td>South American Average</td>
<td>4.5</td>
<td>5.9</td>
<td>7.2</td>
<td>8.3</td>
<td>8.9</td>
<td>10.5</td>
</tr>
<tr>
<td>OECD Average</td>
<td>7.7</td>
<td>9.0</td>
<td>10.1</td>
<td>10.8</td>
<td>11.3</td>
<td>12.1</td>
</tr>
</tbody>
</table>


Many of the Caribbean countries have achieved near universal enrollment at the primary and secondary level (such as Aruba, Belize, Barbados, Grenada, and Guyana). Access to higher education remains low with less than fifteen percent of secondary school graduates going on to post-secondary education.

Many of the Caribbean countries have achieved near universal enrollment at the primary and secondary level (such as Aruba, Belize, Barbados, Grenada, and Guyana). Access to higher education remains low with less than fifteen percent of secondary school graduates going on to post-secondary education.

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7 The Organization of Eastern Caribbean States (OECS) consists of seven member countries (Antigua and Barbuda, Dominica, Grenada, Montserrat, St. Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines) and two associate members (Anguilla and the British Virgin Islands).
The strong commitment to education is clear when looking at the high level of education expenditure relative to GDP, which compares favorably to the OECD average of 5.2 percent of GDP. St. Kitts and Nevis is amongst the highest relative spenders in the region allocating 9.3 percent of GDP to education. St. Lucia and Barbados spend 6.6 percent and 6.9 percent of GDP on education, respectively. Antigua & Barbuda is at the other end of the spectrum, allocating 3.9 percent of GDP.

Despite the high level of investment, quality of education in the Caribbean remains low. In this dimension, Caribbean countries have significant room for improvement. The average pass rates for standardized tests in core subjects such as English and Mathematics are less than 50 percent, and many students lack basic skills in information and communication technology and other disciplines deemed critical for success in the work place. Even more worrisome are the reports of poor student Caribbean secondary education examination performance on test items that require critical thinking, analysis or communication. Despite having received up to 11 years of formal education, school leavers often struggle greatly to find employment. This fact is most pronounced amongst the youth cohort – inclusive of 15 to 29 years olds – where the rate of unemployment is double to quadruple that of adults in the region.
From a formal education standpoint, these less than satisfactory outcomes point to systemic issues at each level of the education system. Through the Education Strategy 2020, the World Bank advocates for a systems approach to education analysis and reform. The systems approach recognizes that improving education requires strengthening all factors that improve learning for all children and youth. Within the context of the Caribbean region, four of the most pressing areas include:

- Early childhood development (ECD): Early childhood education and care interventions are essential to build a foundation in the early years to ensure the full cognitive, socio-emotional, linguistic, and physical development of a child. Access to these interventions varies across the region; with those in rural and lower socio-economic classes least likely to attend. As a result, some children lack the foundational skills when entering the primary school stream.
- Higher education: Higher education is key to improvement in growth and productivity because it provides high level skills and research to apply to current technologies and develop new technologies, both of which are key to growth. The recent global economic and financial crisis has made it urgent that the region focus on areas for improvement of productivity, and improve competitiveness in the global economy. Tertiary education has a big role to play in addressing this challenge in the Caribbean. Less than 15 percent of students attend post-secondary education in the OECS. Of this group, only a small portion enrolls in programs that are considered to be in high demand (i.e. sciences, engineering, and mathematics).
- Unqualified teachers: Recent international evidence shows that the quality of teaching is the most important determinant of cognitive achievement. A chronic challenge in the Caribbean is attracting and retaining qualified teachers. This is particularly pronounced in core subject areas. On average, 21 percent of mathematics and English teachers are unqualified in the subject matter, and this rate is over 80 percent amongst science teachers in OECS countries.
- Poor accountability: International evidence shows that the level of local autonomy, which empowers schools to make appropriate educational decisions that reflect their local environment and situation, is correlated with better quality outcomes. Education systems in the Caribbean tend to be very centralized, providing schools with minimal decision-making authority.

RECOMMENDATIONS FOR EDUCATIONAL REFORMS

Quickly-evolving demands for skills require new responses from training and education systems alike. Addressing the skills gap is a priority. The sectoral shift experienced by Caribbean countries, together with the digitization of business processes and production technology, has rendered many repetitive, manual jobs obsolete, while increasing the number of jobs that require non-routine skills. Coupled with the increasingly competitive landscape, the foremost implication of this shift is the increased demand for employees with vastly different skillsets. Employer surveys in the region show a high demand for skills that increase the trainability of employees. These skills are acquired, developed, and honed in the education system from ECD through secondary school, and include skills such as appropriate workplace behavior; team work and problem solving; and a strong grounding in numeracy, literacy, and social skills. In some countries, such as Grenada, enterprise surveys have shown that the lack of appropriate skills by workers is a fundamental constraint on business. Along with the direct economic costs to private firms and society, the misalignment of skills will, if unaddressed, continue to hinder economic growth and lead to higher unemployment and higher migration rates for highly-skilled individuals.
Table 2: Top 10 skill priorities identified by employers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Skill Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Positive Work Habits</td>
</tr>
<tr>
<td>2</td>
<td>Communication</td>
</tr>
<tr>
<td>3</td>
<td>Technical</td>
</tr>
<tr>
<td>4</td>
<td>Writing</td>
</tr>
<tr>
<td>5</td>
<td>English</td>
</tr>
<tr>
<td>6</td>
<td>Mathematics</td>
</tr>
<tr>
<td>7</td>
<td>Problem Solving</td>
</tr>
<tr>
<td>8</td>
<td>Reading</td>
</tr>
<tr>
<td>9</td>
<td>Computer</td>
</tr>
<tr>
<td>10</td>
<td>Team Work</td>
</tr>
</tbody>
</table>

Source: Hickling Corporation, 2008

A multi-pronged approach, involving both the public and private sector, is required to achieve effective and high-quality skill development. Contributions from both the public and private sector are critical in order to foster and sustain skill development at the different stages of a worker’s career. The formal education system is best placed to provide a solid foundation of cognitive, non-routine, and soft skills that employees need in order to excel in the labor market. As work places continue to be transformed, employees will require constant skill upgrading. All types of businesses and organizations are responsible for recruiting employees and upgrading their skills in line with their operational needs. This is a cost that employers must manage in order to be competitive in a global economy. The absence of the required foundation of skills and competencies amongst employees has resulted in high costs to employers and in under-training of employees. The evidence shows that employers would do more training if entry skills were better and costs lower.

The Skills Strategy Options for the OECS (The World Bank, 2011) indicates that international experience demonstrates that when employers have a strong voice in curriculum and school management, they will enter into partnerships that greatly improve the employment chances of graduates. Improved synergies between the public and private sector are key to developing human capital in the Caribbean. The private sector is more attuned to the skills and changing market conditions that affect the Caribbean economies. For these reasons, a more nuanced, participatory approach, in which the private and public sector work in collaboration to share knowledge, identify the types of skills, and determine a cost-effective, quality approach through which they can be developed, is required. This approach could include employers contributing to the design and enrichment of the curriculum, with integration of career and academic courses and providing work-based learning opportunities for students.
Enhancing education quality, skills, and labor productivity also requires robust data collection systems. Accurate, comprehensive, and timely data are required to promote effective policy-making. Currently data are insufficient to effectively assess the skills gaps and inform policy makers and private sector partners as they work to enhance the education system. More information is required regarding the depth of the skills mismatch and the factors contributing to it. As the Caribbean economies continue to evolve, accurate employment surveys and administrative data are needed to identify the industries of the future and the skillsets and expertise that will be required to fill these jobs.
Improving the quality of education is one of the key ingredients for economic growth in the Caribbean. While Caribbean states have made good progress in increasing access, much remains to be done in improving quality of learning outcomes. Necessary actions include investing in early childhood development to ensure that all children develop strong foundation skills, strategically investing in higher education to provide high level skills and research to apply to current technologies, recruitment and retention of qualified teachers, and ensuring availability of high-quality and timely data. Achievement of this goal will also require strengthening the partnership with the private sector. Close collaboration among the Caribbean states in addressing these measures would help improve the efficiency of investments and promotion of learning.
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14
NON-COMMUNICABLE DISEASES IN THE CARIBBEAN: THE NEW CHALLENGE FOR PRODUCTIVITY AND GROWTH

Shiyen Chao and Clark Matthews
ABSTRACT

Non-communicable diseases (NCDs) represent a major, and increasing, cause of death in the Caribbean. In addition, they lead to significant productivity losses, due to absenteeism, disabilities, reduced productivity, and less years of working life, and they have a disproportionate effect on those with lower incomes. Therefore, Caribbean governments need to address the prevalence, and growth of NCDs as part of their growth and development strategies. Some policy options for the region to consider include tackling risk factors; developing legislative and policy actions, such as taxes, to encourage healthy behavior; develop health promotion policies; develop primary prevention programs aimed at the entire country, as well as secondary prevention programs aimed at high-risk individuals; adopt regional and multi-sectoral approaches; and use lessons from other countries to mobilize resources.

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INTRODUCTION

Non-communicable diseases (NCDs) pose significant challenges to individuals, communities, and nations alike, and represent a major cause of death in the Caribbean. This paper highlights the linkage between NCDs and economic growth in the Caribbean and explores the impact of NCDs on productivity and economic growth based on the recent World Bank publications on NCDs in the Caribbean region (World Bank 2011a, 2012b and 2013).

NCDs, which by definition are non-infectious and non-transmissible, include autoimmune diseases, heart disease, some forms of cancers, and diabetes, among others. Over the last few decades, NCDs have reached epidemic levels in many parts of the world. The severity of this problem is particularly pronounced in the Caribbean region, and has resulted in considerable loss of life, as well as economic and social costs. The prevalence of NCDs affects labor market outcomes, including significant productivity losses due to absenteeism, disability, reduced productivity, and less years of working life. The costs of NCDs are increasingly a burden for low- and middle-income countries, affecting people’s lives by reducing household income and increasing spending on treatment. NCDs are putting more pressure on already stretched health systems and family and government budgets. Addressing NCDs is no longer solely a health sector strategy, but rather a requirement for maximizing investments in human capital to enhance productivity and achieve sustained economic growth.

This paper reviews the status of NCDs in the Caribbean and the risk factors that contribute to the increase of NCDs, then assesses economic impact of NCDs on productivity and followed by the review of some international evidences on NCDs and productivity. The final section of the paper discusses policy options for moving forward.

THE EMERGENCE AND PREDOMINANCE OF NCDS

Key demographic and migration trends have contributed to the predominance of NCDs. Since 1960, the rate of life expectancy at birth in the Caribbean region has increased from 61 to 72 years. During this period there has also been a move towards urbanization as workers often relocate from rural communities to city settings. The percentage of urban dwellers varies across the region, with countries such as the Dominican Republic (69 percent) and the Bahamas (84 percent) having among the highest proportion of citizens in urban settings.
The result is an increasingly aging population concentrated in high-density locations. Crowded living conditions and significant environmental pollution due to air, land and marine based sources such as increased cruise ships traffic or rising tide of household and industrial wastes are some of many factors that contribute to heightened health risks in the region. Sewage is one of the most significant pollutants affecting the coastal environments of the Caribbean. In 1993, Pan American Health Organization (PAHO) indicated that only 10% of the sewage generated in the Central American and Caribbean Island countries was properly treated (UNEP). These factors contribute to the rise of chronic non-communicable diseases in the region.

NCDs are linked to more than 70 percent of deaths in the Caribbean region, well above the global average of nearly 60 percent. In contrast, the occurrences of deaths as a result of communicable diseases are on average 8 to 15 percent in the region. Within the Organization of Eastern Caribbean States (OECS) countries, the three types of NCDs that account for the largest portion of deaths includes: cardiovascular disease (30 to 46 percent of deaths), malignant neoplasms (10 to 20 percent of deaths), and diabetes mellitus (3 to 14 percent of deaths) (World Bank 2011b). Table 1 contains detailed information on burden of diseases for some OECS countries.

Table 1. Burden of disease in selected OECS countries: age standardized disability adjusted life-years per 100,000 of population by cause

<table>
<thead>
<tr>
<th></th>
<th>Antigua and Barbuda</th>
<th>Dominica</th>
<th>Grenada</th>
<th>St. Kitts and Nevis</th>
<th>St. Lucia</th>
<th>St. Vincent and the Grenadines</th>
</tr>
</thead>
<tbody>
<tr>
<td>All causes*</td>
<td>16511</td>
<td>16395</td>
<td>20810</td>
<td>18234</td>
<td>16329</td>
<td>20278</td>
</tr>
<tr>
<td>Communicable</td>
<td>2103</td>
<td>2317</td>
<td>3582</td>
<td>3227</td>
<td>2109</td>
<td>4128</td>
</tr>
<tr>
<td>NCDs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selected Causes</td>
<td>12871</td>
<td>12798</td>
<td>15601</td>
<td>13433</td>
<td>11856</td>
<td>13828</td>
</tr>
<tr>
<td>Malignant neoplasms</td>
<td>1363</td>
<td>1768</td>
<td>2136</td>
<td>1073</td>
<td>1333</td>
<td>1655</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>869</td>
<td>629</td>
<td>784</td>
<td>506</td>
<td>915</td>
<td>1301</td>
</tr>
<tr>
<td>Endocrine disorders</td>
<td>694</td>
<td>303</td>
<td>-</td>
<td>672</td>
<td>400</td>
<td>376</td>
</tr>
<tr>
<td>Neuropsychiatric conditions</td>
<td>3554</td>
<td>4141</td>
<td>3626</td>
<td>3713</td>
<td>3609</td>
<td>3674</td>
</tr>
<tr>
<td>Cardiovascular diseases</td>
<td>2616</td>
<td>2117</td>
<td>4065</td>
<td>3569</td>
<td>1849</td>
<td>2804</td>
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<tr>
<td>Respiratory diseases</td>
<td>750</td>
<td>646</td>
<td>1169</td>
<td>530</td>
<td>782</td>
<td>833</td>
</tr>
<tr>
<td>Digestive diseases</td>
<td>654</td>
<td>691</td>
<td>1199</td>
<td>702</td>
<td>573</td>
<td>700</td>
</tr>
<tr>
<td>Genitourinary diseases</td>
<td>214</td>
<td>241</td>
<td>437</td>
<td>414</td>
<td>200</td>
<td>241</td>
</tr>
<tr>
<td>Percentage of NCDs</td>
<td>78%</td>
<td>78%</td>
<td>75%</td>
<td>74%</td>
<td>73%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Data source: WHO 2004
* Communicable diseases, NCDs, and injuries
Box 1: Risk factors of NCDs

NCDs share common underlying, interrelated risk factors, including tobacco use, unhealthy diets, physical inactivity, and excessive alcohol consumption. Despite overwhelming evidence of the harmful health consequences associated with these risk factors, the prevalence of these factors is on the rise in Caribbean countries.

- Unhealthy diet: Due to the change from a diet high in fruit and vegetables to a diet that is increasingly high in sugar, salt, and trans fat, the rate of obesity and overweight people in the Caribbean has steadily increased across all countries and age cohorts since the 1970s. Diets rich in salt, sugar, and fat increase the risk of cardiovascular diseases, diabetes, cancers and dental diseases (WHO 2003).

- Physical inactivity: Physical inactivity is the fourth leading risk factor of global mortality. Country surveys provide moderate insight and demonstrate that populations are insufficiently active.

- Smoking: Smoking kills more than five million people a year worldwide – more than tuberculosis, HIV/AIDS and malaria combined (WHO) and it is responsible for at least 10 percent of all deaths in Caribbean countries. Among countries possessing statistical data tracking tobacco usage, the rate is highest in Trinidad and Tobago, where 33 percent of adult male and 6 percent of the adult females smoke cigarettes.

- Alcohol: The excessive use of alcohol is a global problem that compromises both individual and social development, and can result in serious health concerns. Data from a subset of Caribbean countries shows that the total per capita consumption of alcohol per year is in excess of 5 liters in most countries. Studies show that alcohol is causally linked to eight different cancers with the risk increasing with the volume consumed. Alcohol use is also related to many cardiovascular diseases (Parry, Patra and Rehm 2012; and Rehm, Room and Monteiro, 2009).

ECONOMIC IMPACT OF NCDs

Reducing the prominence of NCDs is an important economic growth strategy. Along with the social and human merits for intervention, there are strong economic motives for addressing NCDs. NCDs contribute to poverty and is becoming a major barrier to development and achievement of the MDGs. The loss of productivity reduces the effective labor force and economic output. For every 10% increase in mortality due to NCDs, the yearly economic growth decreases by about 0.5% (Beaglehole, Bonita, Adams Alleyne et al. 2011). A global analysis of the economic impact of NCDs by the World Economic Forum and the Harvard School of Public Health indicates that if the intervention efforts remain static and rates of NCDs continue to increase, cumulative economic losses from four major NCDs between 2011-2025 are expected to total nearly US$500 billion per year for low and middle income countries (WHO 2011). The Caribbean region is expected to bear a heavy burden of NCDs, since they were particularly affected by the 2008 global financial crisis and have not fully recovered. They are heavily indebted, and economic growth has slowed.

NCDs are costly, and have a direct and significant impact on economies, health systems, households and individuals. Even though the analysis of the economic impact of NCDs on economy in the Caribbean is limited, some case studies show that the cost of NCDs is high. The World Bank’s study in Jamaica estimated that an individual suffering from NCDs spends on average approximately one third of household per capita expenditure on healthcare services and purchases of pharmaceuticals. National aggregate out of pocket health expenditure amounted to 3.08 percent of Jamaica’s GDP. The poorest, the elderly, and persons with hypertension spent more on healthcare, indicating important targets for government intervention (World Bank 2011a).

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The four NCDs under this analysis are cardiovascular diseases, diabetes, cancer and chronic respiratory diseases.
Public health systems bear a significant portion of direct costs as a result of NCDs. People with NCDs have a higher rate of utilization of health care services. Data for Jamaica from the period 1990 to 2007 shows that over the 18-year period, the percentage of health care visits by patients without NCDs was relatively stable, whereas the rate for patients with NCDs increased 20 percentage points (World Bank 2011a). These visits are labor intensive and require costly technology and physical space, which results in the diversion of limited financial and human resources away from other pressing needs in the medical system. For example, in the OECS the total annual public health expenditure per diabetic patient ranges from USD 326 in St. Vincent and Grenadines to as high as USD 776 in Antigua and Barbuda. Expenditure on diabetes patients totaled USD 1.8 million and USD 2.4 million in the two countries presented, respectively (World Bank 2011a).

Figure 1: Jamaican Health Services Visits for individuals with and without NCDs (%)

The economic burden of NCDs on individuals is high. Both direct and indirect economic burdens must be examined in order to estimate the total economic burden of NCDs to individuals. The direct economic burden can be defined as the sum of out-of-pocket spending by NCD patients on outpatient visits, inpatient care, and medication. In contrast, an evaluation of the indirect economic burden measures the reduction of productivity due to illness. A 2006 study estimates the total average private economic burden of NCDs to be approximately USD 1,320 in St. Lucia per year, or roughly 25% of per capita GDP. The implications of this high level of expenditure can be seen in many different ways. Allocating scarce financial resources to treat NCDs can impoverish families, diverting financial resources from other important areas, such as extracurricular activities for children and quality of life activities. Data from Colombia, Nicaragua and Peru also show that out-of-pocket expenditures in households that include someone with a chronic condition more than double those of households that do not. The use of health care services is higher among people who reported to have a chronic condition, regardless of gender, age and education level, socio-economic status or urban/rural residence (World Bank, 2013).
NCDs disproportionately affect the poor more and increase inequality.

NCDs usually require prolonged treatment, and if a household lacks insurance, or resources to cover these expenditures, they can drive people into poverty. Among NCD patients, the poor suffer more from lack of resources to access to care and treatment. The St. Lucia household data show that the economic burden of NCDs is heavier for poorer people. Poorer households spend 48 percent of their per capita expenditure on healthcare while better off households spend less than 20 percent. Even though the poor spent less, their spending represents a higher proportion of their annual income triggering a vicious circle, since poverty often increases exposure to NCD risk factors and NCDs in turn drive the poor into deeper poverty, unless strong interventions take place (World Bank, 2011b).

ADDRESSING NCDS TO ENHANCE PRODUCTIVITY

Reducing the prevalence of NCDs can lead to positive labor market outcomes. NCDs can affect labor market status in three ways: labor force participation and type of employment; labor supply or hours worked; and labor earnings. NCDs create barriers and impediments that limit employees’ abilities to perform duties in the work place, which in turn affects the level of labor force participation and type of employment, and results in a lower labor supply and less hours worked. Although there is insufficient information to accurately assess the full extent in the Caribbean region, data from select South American countries shows that individuals with NCDs work less hours than do average workers, and have more pronounced working life cycles (that is, a greater share of hours are worked mid-career compared with early and late stages of a career). Anecdotal evidence also suggests that individuals with NCD-related disabilities are less able to undertake a full spectrum of work duties, which limits employment opportunities.

International evidence shows that individuals with NCDs have lower income. Studies undertaken in Brazil and Chile find that workers without NCDs earn between 30 and 40 percent more than those with NCDs (World Bank 2013). Research also indicates a relationship between income and productivity. However this relationship is difficult to quantify because labor earnings are a result of several factors, including education, ability, industry, and technological factors, amongst others (World Bank, 2013). To assess the full impact of NCDs on income requires a detailed analysis in the Caribbean region. Individuals suffering from NCDs in the Caribbean are already at a disadvantage. Reduced income potential, coupled with the high cost of treatment, leads to reduced quality of life for individuals with NCDs and to a diminished stock of human capital. Employers may then suffer from reduced profits as a result of higher labor costs and inefficiencies, and each level of government receives less revenue from taxation (from both business and personal taxation, World Bank 2013).
Addressing NCDs should be at the forefront of the economic growth agenda in the Caribbean. In recent years, the World Bank has conducted and supported several studies, both in the Caribbean region and internationally, to underline the impediments, risk factors, and consequences associated with NCDs and to complement the efforts that governments in the Caribbean region have undertaken to address NCDs. The Bank has the technical expertise to support the development of customized road maps that combine short, medium, and long-term policy actions to curb the prominence of NCDs and mitigate risks factors. Much of the NCDs and associated costs are avoidable, since NCDs and related risk factors are preventable. Experiences and lessons learned from developed countries in addressing NCDs could be useful for developing national strategies to control their impact. The following are some policy options for the Caribbean to consider:

• Tackle risk factors. The four priority population-based programs should tackle excessive alcohol consumption, tobacco use, unhealthy diet, and promote physical activity. Together with the traditional diet of starchy and high-sugar foods, such unhealthy habits are fueling an NCD crisis in the region. Across the Caribbean, women tend to be more obese and less physically active than men. Smoking prevalence is low but is responsible for ten percent of all deaths in the Caribbean. The limited information available on alcohol consumption indicates that it has been increasing since 1961. Of particular concern is the growing trend of the risk factors in adolescents. Specific policy options should be developed to address the higher tendencies for women’s obesity and physically inactivity, and for prevention programs to reach the adolescent population but a first step should be education on healthy food choices, while ensuring accessibility and affordability.

• Develop and enforce legislative and policy actions. Develop pricing and taxation regulations on tobacco and alcohol, such as smoke-free work and public places, and restrictions on alcohol outlets and operating hours. Develop standards and improve enforcement, especially on sales restrictions, advertising and drunk driving.
• Develop health promotion policies. The private sector should be involved in disease prevention and health promotion, starting at the work place and in schools. Work place health promotion should extend beyond occupational safety to target smoking, alcohol, stress, and healthy eating. Middle-aged, employed males often neglect their health, and are a difficult target group to reach. School programs have the largest return on investment in promoting a healthy lifestyle and decreasing the future disease burden. Health ministries should work with education authorities to integrate prevention efforts and health promotion into curricula and teach about the risk factors that lead to NCDs, and the importance of diet and physical activity. Governments need to develop strategies and incentives to encourage the food industry to manufacture, distribute, and market healthier products, and to include health messages in marketing campaigns.

• Develop primary prevention through population-based programs that target the whole population. Successful programs require an integrated approach with: (a) mass media activities to promote healthy lifestyles; (b) feasible public awareness and health education campaigns; (c) supportive structures that engage non-governmental organizations and private sectors; and (d) health promotion messages based on reliable, evidence-based information with wide distribution of material through different channels.

• Develop secondary prevention through individual clinical intervention programs to identify high-risk individuals at the point of service delivery. Interventions and follow up are needed for individuals with risk factors to prevent deterioration, incapacity, and fatality. Clinical interventions require a focus on primary healthcare with an emphasis on continuity, integrated management of key chronic conditions, ensuring adherence, periodic re-testing and adjusting of treatment regimens. An effective primary healthcare system with close links to secondary and social care can improve prevention and management of NCDs.

• Train health professionals in delivering preventive services. The capacity and motivation of physicians and nurses is often key to promoting health and preventive care. The Caribbean countries have a history of using regional institutions for training health workers, especially physicians, so regional cooperation can develop new qualifications to prevent and treat NCDs and share faculty, didactic materials, educational strategies, learning methods and lessons learnt. They should increase the involvement of health professionals in health promotion; organize continuing education on prevention, especially intervention strategies and methods; involve nurses in screening and management of risk factors; organize risk factor management services for health professionals (e.g. smoking cessation), and enhance collaboration between health professionals in primary healthcare and other public and civil society entities involved in prevention and health promotion.
• Apply a multisectoral approach. Experience with implementing HIV/AIDS projects has given the OECS countries the tools and methods they need in order to change behavior and to advocate changes in lifestyles through awareness raising, sensitization campaigns, working with mass media and NGOs, prevention activities, and treatment programs. These could be applied to reduce the impact of NCD risk factors. Reducing the occurrence of NCDs will require regional and national coordination, as well as intersectoral strategies that involve the public and private sectors; government and non-governmental organizations; and communities and families. The Caribbean Public Health Agency could coordinate technical assistance to countries. The experience of high-income countries could be examined for insights into tried and tested approaches that yield results in addressing NCDs.

• Develop a regional approach. Successful prevention requires harmonized legislation and policies, especially in the areas of tobacco, alcohol, food, essential medicines, and information technologies. A regional strategy would be cost-effective for reasons of economies of scale and the presence of positive or negative externalities. This will be gradual, however, as countries will move at different speeds according to internal pressures and abilities. Harmonization could be achieved by assigning overall coordination to an already existing regional authority. The Mesoamerican Initiative and other diagonal approaches offer opportunities to learn about regional approaches.

• Mobilize resources for implementing strategies and programs. Lessons from other countries can help identify approaches for mobilizing resources. For example, Jamaica’s experience may provide insight on how NCD treatment can be financed as well as ensure that incentives are designed to focus on prevention programs. Jamaica’s National Health Fund (NHF) provides free or subsidized medicines to patients with NCDs and finances prevention programs. It generates a sustained revenue stream through tobacco tax and special consumption taxes on petrol, alcohol, and motor vehicles.

The prevalence of NCDs is rampant, and the consequences well documented. From an economic perspective, Caribbean governments must address NCDs in order to increase labor productivity and achieve sustained economic growth.
REFERENCES


