



REGIONAL PRIVATE SECTOR DIAGNOSTIC (RPSD)

# PROMOTING PRIVATE SECTOR-LED GROWTH TO FOSTER RECOVERY AND RESILIENCE IN THE CARIBBEAN

Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, and Trinidad and Tobago

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# EXECUTIVE SUMMARY

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The World Bank Group prepared this Regional Private Sector Diagnostic (RPSD) for 12 Caribbean states (CARI-12) as part of its ongoing efforts to boost private sector participation in key sectors and accelerate economic growth and development over the next three to five years. The CARI-12 states are Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.<sup>1</sup> These countries have similar cultures, languages, and geographies, and they face comparable development challenges. These similarities create opportunities for collaboration and mutual learning such as through the regional cooperation agenda of the Caribbean Community (CARICOM), of which the CARI-12 are members. As in other small states, trade has historically been critical to growth in the CARI-12. However, economic diversification has proved elusive, making the CARI-12 vulnerable to external demand shocks and heightening volatility in growth, investment, and consumption patterns. Moreover, as a result of their geographic location and features, the CARI-12 are highly exposed to natural disasters and the attendant repercussions on growth and fiscal health. In this context, CARI-12 countries can accelerate private sector development, support economic recovery, and create jobs by addressing their key sources of vulnerability and improving the investment climate.

Per capita incomes in the CARI-12 are well above the Latin American and Caribbean average and have been growing slowly since 2005, while progress in social development outcomes has been mixed. The CARI-12 economies rely overwhelmingly on tourism (the Bahamas, Barbados, Belize,<sup>2</sup> and the six CARI-12 countries that are members of the Organization of Eastern Caribbean States [OECS])<sup>3</sup> and on commodities exports (Guyana, Suriname, and Trinidad and Tobago). Overall, gross domestic product (GDP) per capita in the tourism-dependent countries is above the levels recorded in the commodity-dependent peers. The regionwide average GDP per capita peaked at US\$13,877 in 2019 (US\$16,369 in tourism-dependent countries; US\$10,196 in commodity-dependent ones), compared with the Latin American and Caribbean average of US\$8,700.<sup>4</sup> Poverty rates in the CARI-12 are comparable to those of other emerging markets and developing economies (EMDEs), but progress toward the living standards of advanced economies has slowed down in recent decades and youth unemployment is very high.<sup>5</sup> As of 2019, the average GDP per capita in the CARI-12 had risen by 7.0 percent since 2005—mainly thanks to progress in the commodity-dependent countries—versus a rise of 19.5 percent in the wider Latin America and Caribbean over the same period. High youth unemployment in most CARI-12 economies prevents them from reaping the demographic dividend and prompts the migration of talent. Although many of the CARI-12 have greatly expanded access to basic education—including for women—within the past 20 years, issues in the quality of education persist, and tertiary education levels are lower than in countries at similar stages of development. Consequently, the private sector has noted a continued increase in skills mismatches in the region. In addition, progress toward gender parity in education has not been matched by a comparable increase in economic opportunities for women.

**Small geographic size and high economic concentration make the CARI-12 countries susceptible to economic shocks, resulting in low and volatile levels of growth.** The CARI-12 comprise small states and microstates, with populations that range from 52,000 in St. Kitts and Nevis to 1.4 million in Trinidad and Tobago. For comparison, their combined population of 4.5 million is approximately equal to that of Panama. Among the CARI-12, the six OECS countries rank in the bottom 15th percentile globally by population, land area, and GDP. As noted previously, tourism is responsible for a significant share of economic activity in nine of the CARI-12, where it accounts for 29 percent of GDP on average; on the other hand, the rest of the CARI-12 depend on a few agricultural or mineral commodities, such as gold, bauxite, other precious metals, oil, and gas. High economic concentration has made the CARI-12 vulnerable to external demand shocks and has stymied their rate of growth, which has been 3.4 percent lower than the emerging-market average over the past 20 years. The region suffered a noticeable and prolonged slowdown in the aftermath of the Global Financial Crisis of 2007–08, as falls in foreign direct investment (FDI) and tourism activity compounded fiscal challenges, and the region has also been slow to recover after subsequent shocks. In this context, the COVID-19 pandemic, which has affected education and other key sectors such as tourism, is likely to have a negative impact on long-term growth.

**The CARI-12 countries are also highly vulnerable to the impacts of climate change and natural disasters, because of their geographic location, size, and topography.** Six of the CARI-12 are among the 20 countries globally that suffered the largest economic losses (as a percentage of GDP) from extreme weather events between 2000 and 2019.<sup>6</sup> The concentration of economic activity in sectors that are highly sensitive to climate change—such as tourism and agriculture—is likely to further undermine economic growth and development outcomes. Tourism is especially affected by hurricanes and coastal inundation, with 95 percent of accommodation facilities and 80 percent of tourist attractions in the region located at sea level along the coast. Agriculture is mainly rain fed and subject to the vagaries of changing patterns in rainfall and temperature. Recurrent natural disasters inflict direct damage on physical assets, disrupt economic activity, and increase the public spending necessary for disaster recovery and business continuity efforts. As the effects of a rapidly changing climate continue to build<sup>7</sup>—exacerbating natural disaster risks with more extreme temperatures, sea level rise, and changes in rainfall patterns—the social and economic development of the Caribbean countries will be further threatened. In addition to the impact of natural disasters, the region’s blue economy could be affected by the inadequate protection of its rich natural endowments.

**A lack of fiscal space constrains the ability of CARI-12 governments to develop adequate infrastructure and build resilience to economic and climate shocks, affecting the prospects for long-term growth.** Debt levels in the CARI-12 are high, due to successive demand- and climate-related shocks and to poor management of available resources. Although debt levels had stabilized in certain countries, public debt levels across the region were already elevated pre-pandemic (averaging 73.9 percent of GDP as of 2019), and they limited investments into much-needed infrastructure. This dynamic thwarts the development of the private sector in the CARI-12 countries and, in a vicious cycle, exacerbates their vulnerability to economic shocks. In the wake of the pandemic, public debt has further risen by almost 20 percentage points, to an average of 93.5 percent of GDP.

**This RPSD comes at a crucial time, in the aftermath of the pandemic, as the region seeks new opportunities for the private sector to drive long-term growth and development.** With the exception of Guyana, the pandemic has caused a severe economic contraction, a rise in already-high unemployment rates, and a deterioration of fiscal positions across the CARI-12. GDP contraction was especially acute (10 percent or more) in the tourism-dependent economies as international arrivals plunged by more than 65 percent in 2020. A modest GDP recovery followed in 2021 as borders slowly reopened and economic activity restarted. On the other hand, commodity exporters recorded mixed results influenced by fluctuations in oil and gas prices. GDP levels in Trinidad and Tobago tumbled in 2020 and recovered in 2021, while Guyana was one of the world's fastest-growing economies in 2021 as a result of its first full year of oil production. Overall, the Caribbean's recovery from the pandemic is set to be slow, and real GDP in the tourism-dependent CARI-12 economies is not expected to reach pre-pandemic levels before 2024.

**By addressing their key vulnerabilities and implementing a more favorable investment climate, the CARI-12 can accelerate the development of the private sector, support economic recovery, and create jobs.** The CARI-12 have abundant natural resources, which they have been relatively successful in leveraging to drive economic growth and development over the past two decades. The geography and natural assets of the region's tourism-dependent countries have made them top global tourist destinations. They are also exploring opportunities in other services, in particular finance and business processing services, that are not constrained by scale. Advancing the development of the private sector is critical to sustainable and inclusive growth. Currently, the private sector in the region is predominantly composed of low-productivity small and medium enterprises (SMEs) with average productivity levels lower than the Latin American and Caribbean average. About 90 percent of firms are micro, small, and medium enterprises (MSMEs) and are mostly domestically owned and lack strong links with the international economy that could provide the potential for positive spillovers. These MSMEs are two to three times less productive than large enterprises. In the smallest CARI-12 countries, MSMEs are largely concentrated in the low-skilled services sector—mainly tourism—which is highly susceptible to economic shocks. In the larger CARI-12 countries, although SMEs are engaged in a more diverse set of activities in the services, manufacturing, and agricultural sectors, productivity is also low. Trade offers firms the opportunities to expand scale of production by tapping larger foreign markets, to gain access to new technologies, and to satisfy local demand for products that are not produced within the region. Yet, except for Trinidad and Tobago, the CARI-12 countries have consistently recorded negative trade balances, which reflect their narrow export base and low productivity. The potential for intraregional trade, which accounts for only 9 percent of the region's total exports, remains largely untapped. Considering the small size and limited resources of the CARI-12 economies, regional integration could greatly enhance development outcomes. In particular, the regional harmonization of investment codes, which has been supported by CARICOM but has had slow progress to date, would help foster investment and attract FDI.

## Cross-cutting constraints to private sector growth

**The private sector in the CARI-12 faces major cross-cutting constraints and addressing them would foster an environment more conducive to trade, investment, and growth.**

These constraints are (a) gaps in trade policy, trade facilitation, and connectivity; (b) skills mismatches; (c) limited access to finance, especially for SMEs; and (d) vulnerability to climate change. The findings of an Innovation, Firm Performance and Gender (IFPG) survey and the private sector consultations conducted for this report corroborated these constraints and pointed to the high cost of electricity and gaps in digital infrastructure as additional key constraints. COVID-19 accentuated the importance of adequate telecommunications infrastructure and digital payments, as well as the need to boost the prospects for medium- and long-term growth by reducing key drivers of cost and improving business efficiency—hence the selection of renewable energy and the digital economy for sector assessments. Governments in the region have been working in many of these areas to enhance competitiveness, but much remains to be done, including at the regional level. Greater regional integration and collaboration will be crucial in helping overcome these constraints and achieving more viable and effective solutions in the medium to long term. The development of the University of the West Indies and the establishment of the Eastern Caribbean Currency Union (ECCU) are strong examples of regional integration that can motivate further progress.

### **Gaps in trade policy, trade facilitation, and connectivity**

**The CARI-12 suffer from frictions that raise their cost of trade and hamper their competitiveness.** Tariff and nontariff measures, weak trade facilitation, and poor transport connectivity make trade expensive and depress export volumes. The CARICOM Common External Tariff underpins a regime of high tariffs on consumer goods (especially food, which attracts tariffs in excess of 20 percent), as well as on intermediate and capital goods, that affects the performance of export industries, including tourism. Scarce and poorly enforced regional guidelines allow CARI-12 authorities to apply numerous and inconsistent nontariff measures, which further raise the costs and diminish the transparency of trade. Shortcomings in market intelligence and quality-control infrastructure (with the partial exceptions of Barbados and Trinidad and Tobago)<sup>8</sup> inhibit exporters' ability to meet technical requirements imposed by foreign markets and cut the chances of survival for new exporters. Cumbersome processes and insufficient automation in border controls disturb the flow and timeliness of trade, while seaports and airports are not equipped to support efficient cargo handling. The pandemic's disruption of global maritime and air transport and the ensuing collapse in tourism exacerbated the region's preexisting challenges in logistics and connectivity.

### **Reducing trade costs and logistics frictions can spur trade-led growth in the Caribbean.**

First, common external tariffs and nontariff measures must be simplified to lower the costs and improve the predictability and transparency of trade. Second, trade facilitation can be greatly enhanced through streamlined, digitized processes and better access to information, achievable via national single windows, maritime single windows, and trade information portals. Establishing National Trade Facilitation Committees (NTFCs) (or strengthening them where they exist) and improving their coordination with the CARICOM Regional Trade Facilitation Committee could help accelerate such reforms. Third, the enabling environment for connectivity and logistics needs to become more robust, including through greater coordination at the regional level and participation from the private sector. For example, expanded ferry services are much needed across the Eastern Caribbean, while digital logistics platforms could help match the demand for and supply of air and sea shipments. In a region highly dependent on trade, enhancing trade performance is critical to both short-term recovery and long-term growth.



### ***Skills gaps stifle the productivity of firms***

**An acute skills gap compromises the productivity of the labor force and, in turn, the competitiveness of firms in the region.** A structural shift from agriculture to services has altered the mix of skills needed across the CARI-12, but the region's educational system has not adjusted quickly enough. As a result, there is increasing but unmet demand in the CARI-12 for workers with both technical and soft skills (such as critical-thinking, problem-solving, and socio-emotional skills). High rates of migration among the most educated people have exacerbated the skills gap in several countries, especially Guyana.

**The CARI-12 suffer from gaps in the quality of secondary education and from insufficient access to tertiary education.** Although secondary enrollment and completion rates in the CARI-12 are generally above the Latin American and Caribbean average (except in the Bahamas, Belize, Trinidad and Tobago, and Suriname), major gaps in quality limit the opportunities for advancement to tertiary education. Indeed, tertiary-school enrollment rates in the region are below the Latin American and Caribbean average of 46 percent, except in Barbados, Grenada, and St. Kitts and Nevis. Insufficient academic readiness among students can be compounded by high costs and limited financial support for tertiary education. In addition, few graduates are trained in science, technology, engineering, and mathematics (STEM), the fields that offer access to the most promising pipeline for both current and future job opportunities. The COVID-19 pandemic has likely widened the skills gap. The shift to online learning in the wake of school closures proved challenging, owing to the shortage of time for training teachers and offering equipment and broadband service access to lower-income students.

**Developing a productive labor force requires improvements to the quality and market relevance of secondary and tertiary education, as well as greater access to the latter.** Improving the quality of secondary education hinges on attracting and retaining well-trained teachers, paying competitive salaries, establishing retention procedures based on satisfactory performance, and providing special incentives to teachers in underserved communities. Better-quality secondary education would make students more academically ready to transition to higher education or the job market. At the same time, greater access to tertiary education will entail the expansion of needs- and results-based financial assistance for students from disadvantaged backgrounds. Proper planning will be critical to avoid an influx of students who are not academically ready or the introduction of measures that are not fiscally sustainable. In addition, the CARI-12 region needs to forge stronger partnerships with the private sector to inform and shape the educational offering and to put in place robust quality-assurance mechanisms to monitor the quality and relevance of educational services.

### ***Limited access to finance by SMEs***

**Although financial systems in the CARI-12 region are generally large relative to the local economies, the growth of credit to the private sector, and especially to SMEs, has been lackluster.** The banking sector, which dominates the system, has become more concentrated and less competitive as foreign banks have exited smaller countries, especially in the ECCU,<sup>9</sup> and have reduced operations in several others. This trend—combined with undeveloped credit infrastructure and high rates of loan delinquency in the wake of the Global Financial Crisis—has contributed to the historically low growth in new lending to the private sector, despite high bank liquidity. Slow economic growth in the region, exacerbated by the pandemic, has also dampened credit demand. In addition, private sector credit has primarily focused on corporates, mortgages, and consumers, while access for SMEs has been far more restricted. The availability of alternative sources of financing for SMEs and the use of digital financial services (DFS)

are also very limited. Asset-based lending (such as factoring) is underdeveloped and has not been recognized in several jurisdictions, such as in the ECCU. Digital payments and the financial technology (fintech) infrastructure are in their infancy in most countries, as will be further discussed. In addition, several Eastern Caribbean countries and Belize have lost correspondent banking relationships because of their inclusion on international anti-money laundering and combating the financing of terrorism (AML/CTF) watch lists, with negative implications for cross-border trade and finance.

**Insurance penetration in the CARI-12 (except Guyana) is above the Latin American and Caribbean average, but coverage varies widely across countries and there is ample scope to better meet the insurance needs of SMEs, including for climate-related risks.** Deeper insurance markets are hampered by a combination of demand- and supply-side impediments. On the one hand, limited understanding of insurance among potential clients hinders uptake. On the other hand, the significant losses suffered by insurance companies due to adverse weather events and the lack of economies of scale and regulatory harmonization across jurisdictions complicate the operational environment.

**Expanding access to finance, especially for SMEs, will require a multipronged approach.** Resolving the long-standing problem of legacy nonperforming loans (NPLs) will provide stronger foundations for banks to lend to the private sector. In this vein, the role of asset management companies in addressing NPLs could be further explored. Regulatory tools and capacities need to be updated to better understand and manage the risks of climate change and to foster a greener banking system (as discussed in the next section). The implementation of the Eastern Caribbean Credit Bureau needs to be accelerated. The development of the Eastern Caribbean Partial Credit Guarantee Corporation, still in its early days, is welcome and can potentially represent a best practice that sets an example for the rest of the region. A review of the impact of state-owned development banks could provide new ideas on how to enhance their effectiveness, incorporating lessons from the reform of other development banks in the Latin America and Caribbean region. Development banks could also play a greater role in fostering new green finance instruments in a nondistortive manner. The insurance sector could be further promoted, especially with products that insure farms, fisheries, and other businesses against climate risk. Finally, a stronger AML/CTF compliance regime would promote better connections with the international banking system, which is essential for cross-border trade.

### ***High vulnerability to climate change***

**The growth potential of the CARI-12 is tied to economic sectors that are highly sensitive to climate change, such as tourism, fishing, and agriculture.** Vulnerability to climate change has a statistically and economically significant impact on international tourism revenues across the Caribbean. On average, a 10 percentage-point increase in climate change vulnerability is associated with a 9 percentage-point decline in tourism earnings per visitor, or a 10 percentage-point reduction in tourism revenues as a share of GDP.<sup>10</sup> Agriculture in the region has been severely affected by extreme events, including hurricanes, droughts, flooding, and major landslides; moreover, its rainfed nature makes the region's agriculture especially sensitive to effects from climate change such as alterations in temperature and precipitation patterns. Although agriculture is not a major contributor to many CARI-12 economies, it does account for 16.9 percent of GDP in Guyana, 11.5 percent in Belize, and 8.2 percent in Suriname.

**Although the CARI-12's contributions to global emissions are minimal, adapting to climate change is critical for them.** To address current and future climate risks, the CARI-12 governments are focusing on building resilient infrastructure and landscapes (which includes investing in the climate resilience of energy and transport infrastructure), supporting the adoption of climate-smart approaches and technologies, and leveraging finance to enable the green transition. Considering their limited fiscal spaces, governments will need to lean on the private sector for investments in adaptation and mitigation measures.

**Given the scale of the upfront capital investments required, small countries such as the CARI-12 need to incentivize private financing of the transition to climate-friendly technology.** The initial costs of adopting climate-smart approaches in key sectors, such as tourism, may be prohibitive in such small markets. The CARI-12 need instruments to enhance access to green finance, especially for MSMEs, as well as de-risking and credit-enhancement tools to crowd in the private sector. Green or blue bonds, which offer access to a wider pool of institutional investors while benefiting from slightly lower interest rates than conventional bonds, are proving attractive to many countries. However, significant barriers to green finance persist in the CARI-12, including misalignment of financial sector policies and incentives with climate and environmental objectives, poor transparency and labeling of green assets, and low penetration and availability of relevant insurance products.

**Policy changes to encourage private sector investment in climate adaptation and mitigation should include** (a) developing fiscal policies that offer appropriate incentives for moving to cleaner production models; (b) adopting financial sector regulations that enhance disclosure of climate risks and encourage investment in green technologies; (c) advancing the work on green taxonomies, environmental, social, and governance (ESG) regulations, and reporting and compliance guidelines; and (d) building capacity for green finance in the financial sector, including through the development of new instruments by national development banks and the issuance of sovereign green bonds that could promote the bonds' adoption by corporate issuers.

### Identifying sector-specific opportunities

The COVID-19 crisis has highlighted the limitations of the Caribbean economic model as well as the need to bolster regional links and economic diversification and to contribute to greener and more inclusive growth. In this context, this RPSD identified the following criteria for selecting sectors for deeper assessment: (a) sectors that contribute to export diversification and job creation across most countries or clusters of countries, (b) sectors with the potential to enhance productivity while contributing to economic diversification, and (c) sectors with the potential to strengthen resilience to climate change and natural disasters. The feasibility of implementation in the medium term (three to five years) is an added consideration for RPSD sector selection. On the basis of these criteria, building the foundations for the digital economy was selected for deeper assessment, followed by transitioning to renewable energy. Leveraging digital services could be transformational in the region, repositioning the region in newer and more complex services, increasing the productivity of traditional sectors, and enhancing the quality and inclusiveness of public services. Transitioning to renewable energy could generate green growth, jobs, and diversified income, while also mitigating the region's dependence on imported heavy fuels and reducing costs for key sectors such as tourism (between 2015 and 2020, the average price of electricity in the CARI-12 was US\$0.277 per kilowatt-hour, compared

with US\$0.165 per kilowatt-hour in Latin America and the Caribbean). This transition would also help the CARI-12 comply with commitments under the Paris Agreement of 2015. Moreover, digital services and renewable energy are mutually reinforcing: lower electricity costs and higher energy stability can provide more fertile ground for the digital economy, while climate-smart grid technologies require well-developed and affordable digital networks. Finally, developing these sectors would allow the region to enhance its resilience and better manage external risks.

### ***Building the foundations for vibrant digital economies***

**The digital economy can open major growth opportunities, but digital development in the CARI-12 is falling short of its enormous potential, despite its progress during the pandemic.** The digital economy can increase productivity in the public and private sectors, forge new businesses (especially in services), and allow firms to further integrate into regional and international markets. Digital technologies can reshape traditional sectors—tourism, agriculture, mining, and logistics—as well as help develop new export niches in digitally enabled services. Importantly, such technologies can improve the quality and coverage of public services, from health and education to regulatory compliance. Spurred by the pandemic, the CARI-12 have accelerated the adoption of digital services. Yet, several indicators show that the region is still lagging. For example, the 2020 UN E-Government Development Index (EGDI) for online services ranked all the CARI-12, except the Bahamas, Barbados, and Trinidad and Tobago, below the 122nd position of 193 UN member states, and the share of the population with access to fixed broadband is lower than 25 percent in 8 out of 12 countries.

**Building strong foundations for the digital economy will require a robust digital infrastructure, a larger pool of talent with advanced digital skills, and well-functioning digital payments.** Widespread, reliable, and affordable broadband connectivity forms the “rails” for the digital economy. While the Bahamas and Barbados have done relatively better, the rest of the region has major ground to cover (albeit to varying degrees) on speed, coverage, and penetration of both fixed and mobile broadband. Data services and devices are expensive; for example, only in the Bahamas do prices for both fixed and mobile broadband services remain within the affordability threshold of 2 percent of gross national income per capita. The number of service providers is small and they tend to be vertically integrated, which limits competition. Cybersecurity—an important enabling element—is weak across the region. Expanding the pool of talent with digital skills, especially advanced skills, is another challenge. Some progress has been made; for example, the Caribbean Examinations Council has designed programs to expand basic digital skills education. However, schools in the region have not widely adopted such programs because of ill-equipped information and communication technology (ICT) labs and insufficient teacher training. Except for Trinidad and Tobago and, to a lesser degree, the Bahamas and Barbados, the number of secondary-level graduates in ICT tends to be low. Public and private universities are also expanding their teaching of advanced digital skills, but their offerings fall short of existing needs and their quality could be enhanced. For example, the number of STEM graduates (who have strong ICT training) as a share of all tertiary-level graduates ranges from 3.5 percent in Belize to 12.4 percent in Barbados, and the number is slightly higher in Dominica. These low figures are even more concerning when considering that the absolute number of tertiary-level graduates in the region is low. The private sector provides some training in digital skills but, while it remains a worthy effort, this contribution does not fill the current gap in the educational system.

The CARI-12 are lagging in digital financial services (DFS), including digital payments. The CARI-12 are largely cash centric, with limited use of and access to credit cards or online payments. Payment systems are fragmented within countries and their interoperability across the region is very limited, creating inefficiencies and constraining the wider development of e-commerce and DFS. Transaction costs for end-users of DFS are still high owing to the small number of active DFS providers and the low adoption rates.

To seize on the momentum achieved during the past two years, governments across the CARI-12 need to design and implement far more ambitious digital economy strategies. Improving affordability, quality, and coverage of digital infrastructure will require additional public and private investments within a more competitive environment. The degree of regulatory reform needed to enhance the enabling environment varies across countries. Certain countries may focus on promoting nondiscriminatory access, active and passive infrastructure sharing, and modern spectrum management. The least connected countries, on the other hand, may need more fundamental reforms that adapt legal frameworks that have been rooted in voice communication to the requirements of broadband-based electronic communication. Public-private partnership models could support the expansion of high-speed broadband connectivity and help close the digital divide. Institutional strengthening, such as ensuring the independence of ICT regulators, is also a priority to enable investment in infrastructure.

**Governments and the private sector could do more to promote digital skills. Digitizing public services would, by itself, incentivize citizens to improve their digital skills.**

Furthermore, investment is needed at both the secondary and tertiary levels of education. At a minimum, secondary schools should offer the Caribbean Examinations Council's Digital Literacy course to all students, which would entail technological upgrades to school facilities and teacher training. At the university level, ICT programs need enhanced curricula and an increased allocation of merit- and needs-based scholarships. In addition, the private sector can partner with the public sector and training institutions to support a pipeline of talent, such as by offering internships to students and trainees.

Reforms to the regulatory framework for digital payments could go a long way in fostering competition, promoting open banking, and boosting innovation within a safeguarded environment. Importantly, regulatory frameworks need to facilitate access to financial infrastructure for new typologies of payment service providers if they meet minimum technical criteria. The Eastern Caribbean Central Bank is in the process of modernizing the bloc's Payment Systems Act, and other jurisdictions should follow suit. In addition, public authorities could actively promote access to and usage of DFS through multiple means, including fostering digital payments to and from government agencies; simplifying customer due diligence processes for the opening of basic, low-value transaction accounts; and encouraging the channeling of the region's sizable remittance flows into e-money wallets (e-wallets). Efforts to establish well-functioning national digital ID systems—essential for DFS—need to accelerate.

### **Unleashing the power of renewable energy**

The CARI-12's vast renewable energy potential is currently overshadowed by the states' heavy dependence on expensive fossil fuels. Most of the CARI-12 satisfy less than 16 percent of their energy needs through renewable energy, with only Dominica (27 percent), Suriname (35 percent), and Belize (56 percent) exceeding this threshold. At least 85 percent of the 311 megawatts of installed, utility-scale energy capacity for renewable energy in the CARI-12 countries was financed by the public sector, and more than half of it comes from a single 189-megawatt hydropower plant in Suriname. Although households and firms generally enjoy high electrification rates, electricity costs in many of the CARI-12 are much more elevated and volatile than in the rest of Latin America and the Caribbean. A shift to renewable energy would provide the region with a greener development path, greater resilience, stronger energy independence, and more competitive exports, especially in the tourism-dependent economies. In this context, Guyana started commercial production of oil in 2020 and recent oil discoveries in Suriname will likely increase the country's dependence on fossil fuels—unless the windfall from oil earnings boosts investments in renewable alternatives.

**The region's abundant renewable energy resources—biomass, geothermal, hydropower, solar, waste-to-energy, and wind—offer opportunities to change the energy mix.** Many CARI-12 countries can deploy renewable energy solutions such as wind farms, solar water heating, solar photovoltaics, geothermal, and hydropower plants. However, the role of the private sector can be expanded if countries work toward renewable utility-scale independent power producers, renewable distributed generation, and energy efficiency.

**The renewable energy sector needs reforms that boost its attractiveness and competitiveness.** The sector faces technical and physical barriers (such as the lack of long-term system planning), commercial barriers (such as financing challenges), policy and regulatory barriers (such as the lack of independent regulation and the ability to set cost-recovery tariffs), and institutional barriers (such as the lack of technical capacity in the public sector for renewable energy procurement, structuring, and development). Strong coordination—both within governments and between the public and private sectors—is needed to develop more renewable energy generation capacity, with clear action plans and well-defined roles and responsibilities. Notably, regional solutions exist that can help achieve greater economies of scale, reduce costs, and improve the bankability of projects (for example, through viability gap funding).

### **Key recommendations**

**This Caribbean RPSD is forward looking and focuses on effective action to address key issues and boost private sector development over the next three to five years.** This analysis highlights starting points where policy intervention can contribute to breaking the region's current low-growth and low-productivity trend. Table ES.1 highlights a subset of priority recommendations to support the role of the private sector as an engine for greater inclusion, innovation, and resilience in the region.

**TABLE ES.1 MATRIX OF POLICY RECOMMENDATIONS**

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>CROSS-CUTTING CONSTRAINTS</b>			
<b>Reduce trade and investment frictions and enhance connectivity</b>			
<b>Harmonize investment regimes</b>	Harmonize or establish a common regime for the promotion and facilitation of investments in the region.	Short to medium term	National/ regional
<b>Reduce CETs</b>	Reduce CETs to decrease the cost of importing capital and intermediate goods and enhance competitiveness.	Short term	National/ regional
<b>Streamline and harmonize NTMs</b>	CARICOM to help countries assess NTMs and develop a regional agenda to streamline and harmonize trade regulations.	Short to medium term	National/ regional
<b>Establish NTFCs and the RTFC</b>	Establish/activate National Trade Facilitation Committees and a Regional Trade Facilitation Committee.	Short term	National/ regional
<b>Digitize and simplify trade procedures</b>	Develop the regulatory framework for/activate national single windows and trade information portals.	Short to medium term	National/ subregional <sup>a</sup>
<b>Increase the supply and efficiency of air and maritime cargo shipping</b>	Develop a more efficient ferry system within the Eastern Caribbean.	Short to medium term	Subregional
	Promote digital logistics platforms through PPPs, focusing on less-than-container loads and airfreight.	Medium term	Regional/ subregional
<b>Expand the coverage, quality, and relevance of the educational system</b>			
<b>Expand access to tertiary education</b>	Design and implement need- and results-based tuition assistance programs for students from disadvantaged backgrounds.	Short to medium term	National/ subregional
<b>Improve the quality of secondary education</b>	Enhance teacher training and increase the number of well-trained teachers in schools through better incentives.	Short to medium term	National/ subregional
<b>Reduce mismatch between skills in demand and those produced through the educational system</b>	In partnership with the private sector, systematically collect information on skills in demand and job-search methods.	Short to medium term	National/ subregional
	Set up quality-assurance mechanisms to monitor and enhance the quality and relevance of services provided by educational institutions.	Medium term	National/ subregional

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Facilitate access to finance for SMEs</b>			
<b>Foster credit products for SMEs</b>	Reduce nonperforming loans through enhanced prudential regulation and the potential development of asset management companies.	Short and medium term	National/ subregional
	Activate the Eastern Caribbean Credit Bureau.	Short to medium term	National/ subregional
<b>Expand insurance coverage</b>	Encourage the development of the insurance sector, focusing on the supply of and demand for non-life insurance and expanding protection from climate change risks.	Medium term	National/ subregional
<b>Enhance AML/CTF compliance</b>	Bolster AML/CTF compliance to strengthen connections with the international banking system.	Short to medium term	National/ subregional
<b>Accelerate private sector investment into climate resilience and mitigation</b>			
<b>Incentivize the private sector to invest in climate resilience and mitigation</b>	Support and enable decarbonization with fiscal policies that encourage the move toward cleaner production models.	Short term	National
	Enhance financial sector regulation to encourage investment in green technologies, advance disclosure requirements for climate-related financial risks, and disseminate information on investment opportunities.	Short to medium term	National/ regional
<b>Develop new financial instruments</b>	Build capacity in the financial sector and expand the role of national development banks in providing green finance.		
	Stimulate long-term investment in green projects by issuing sovereign green bonds, which set an important precedent for corporate issuers.	Medium term	National/ regional
<b>BUILDING THE FOUNDATIONS FOR THE DIGITAL ECONOMY</b>			
<b>Develop high-quality, affordable, and widely accessible digital infrastructure</b>			
<b>Enhance legal and regulatory framework for the telecommunications sector, and strengthen the capabilities of regulators</b>	Adopt robust legal frameworks that are better suited to broadband- and data-driven communications sectors; enhance consumer protection and the independence of regulators.	Medium term	National
	Harmonize legal and regulatory frameworks across the Eastern Caribbean.	Medium term	Subregional
	Increase funding and human resources for institutions responsible for telecommunications regulation.	Short to medium term	National



RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Simplify rules for broadband deployment and infrastructure sharing</b>	Simplify regulation of infrastructure sharing to lower costs and foster broadband deployment in underserved areas. Harmonize such rules across the Eastern Caribbean.	Short to medium term	National/ subregional
<b>Foster access through PPP models</b>	Design and implement PPP models to mobilize private investment into high-speed broadband connectivity, including in rural and other underserved areas.	Short to medium term	National/ subregional
<b>Expand the pool of digital talent</b>			
<b>Increase the supply of digital skills at the secondary and tertiary levels</b>	Enrich the ICT offerings at the secondary and tertiary levels.	Short to medium term	National/ regional
	Increase merit- and needs-based scholarships for ICT-related programs at the tertiary level.	Short term	National
<b>Foster open, innovative, and efficient digital payment systems</b>			
<b>Foster competition, open access, and innovation</b>	Amend the legal and regulatory frameworks for digital payment systems to encourage competition, open banking, and innovation. Enact the new Payment Systems Act in the Eastern Caribbean and issue complementary regulations.	Short to medium term	National/ subregional
<b>Incentivize access and usage</b>	Issue regulations permitting simplified customer due diligence for basic accounts.	Short term	National
	Issue regulations allowing e-money wallet payment service providers to channel inward remittances into the transaction accounts of recipients.	Short term	National
<b>Develop national ID systems</b>	Accelerate or initiate implementation of national ID systems.	Short to medium term	National
<b>E-government</b>			
<b>Digitize key public services</b>	Accelerate the digitization of key public services such as social transfers, tax payments, customs clearances, and the licensing of firms.	Short to medium term	National
<b>TRANSITIONING TO RENEWABLE ENERGY</b>			
<b>Standardize and apply replicable transaction models that account for country-specific barriers</b>			
<b>Develop replicable transaction models for utility-scale independent power producers</b>	Develop models that reduce transaction and development costs for replicable projects. Elements that could be standardized include contracts, procurement models, tender documents, and security packages.	Short to medium term	National

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Improve system planning and grid infrastructure capacity to integrate renewable energy and climate resilience</b>			
<b>Develop/update and publish integrated resource plans</b>	Develop and publish integrated resource plans to prepare for future electricity demands, including expected grid investment, to inform the private sector and policy makers.	Medium term	National/ regional
	Undertake variable renewable energy integration studies to determine the grid investments needed to achieve both the optimal amount of renewable generation and system stability. Develop vulnerability maps to manage climate risks.	Medium term	National/ regional
<b>Modernize the policy and regulatory environments</b>			
<b>Set cost-recovery tariffs</b>	Allow utilities to set cost-recovery tariffs that enable them to maintain grid infrastructure, and to invest to accommodate a large uptake of variable renewable energy.	Short to medium term	National
<b>Improve the technical environment</b>			
<b>Invest in grid stability</b>	Invest in grid stability, including firm power capacity or fast-acting reserves such as spinning reserves and battery-energy storage systems, as well as other infrastructure that can support distributed energy.	Medium term	National
<b>Bundle infrastructure</b>	Exploit opportunities for shared infrastructure or bundling of renewable energy projects across countries to achieve economies of scale and reduce costs.	Medium term	Regional/ subregional

Note: AEO = authorized economic operator; API-ZF = Agence de Promotion des Investissements—Zone Franche; Note: AML/CTF = anti-money laundering/combatting the financing of terrorism; CARI-12 = the 12 Caribbean countries covered in this report; CARICOM = the Caribbean Community; CET = common external tariff; ICT = information and communication technology; NTFC = National Trade Facilitation Committee; NTM = nontariff measures OECS = Organization of Eastern Caribbean States; PPP = public-private partnership; RTFC = Regional Trade Facilitation Committee; SMEs = small and medium enterprises.

- a. Subregional refers to the six OECS countries within the CARI-12: Antigua and Barbuda, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines.

## Notes

1. Country Private Sector Diagnostics have been recently published for Jamaica (2022) and Haiti (2021), while one for the Dominican Republic is in progress.
2. Belize has a more diversified export base comprising both tourism services and commodities, but for ease it is grouped here among the tourism-dependent countries.
3. Antigua and Barbuda, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines. Unless noted otherwise, this group is referred to as “OECS countries” in this report. The wider OECS also includes Montserrat, while Anguilla, the British Virgin Islands, Guadeloupe, and Martinique have associate member status.
4. World Bank Group, World Bank Open Data, 2021, <https://data.worldbank.org>.
5. Trevor Alleyne et al., “Unleashing Growth and Strengthening Resilience in the Caribbean” (Washington, DC: International Monetary Fund, 2017).
6. David Eckstein, Vera Künzel, and Laura Schäfer, “Global Climate Risk Index: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000–2019” (Germanwatch, Bonn, Germany, 2021). Based on data from MunichRE NatCatSERVICE. [https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021\\_1.pdf](https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf).
7. IPCC, “Summary for Policymakers” in Climate Change 2021: The Physical Science Basis (Geneva, Switzerland: IPCC, 2021), <https://www.ipcc.ch/report/ar6/wg1/>; IPCC, “Summary for Policymakers” in Climate Change 2022: Impacts, Adaptation and Vulnerability (Geneva, Switzerland: IPCC, 2022), <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>.
8. Excluding Barbados and Trinidad and Tobago, UNIDO (2017) rated the national quality control infrastructure systems in the region as having low maturity. UNIDO (United Nations Industrial Development Organization), “Quality Infrastructure of the Americas: Strategic Roadmap” (UNIDO, Vienna, Austria, 2017), [https://www.unido.org/sites/default/files/files/2018-01/NQI\\_Americas\\_Report\\_EN.pdf](https://www.unido.org/sites/default/files/files/2018-01/NQI_Americas_Report_EN.pdf).
9. The ECCU comprises Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines.
10. Results from an International Monetary Fund (IMF) study of 15 Caribbean countries, controlling for conventional macroeconomic and social factors. Serhan Cevik and Manuk Ghazanchyan, “Perfect Storm: Climate Change and Tourism” (IMF Working Paper 243, IMF, Washington, DC, 2020), <https://www.elibrary.imf.org/view/journals/001/2020/243/article-A001-en.xml>.

# ABBREVIATIONS AND ACRONYMS

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ACH	automatic clearing house
AEO	authorized economic operator
ALMPs	active labor market programs
AML/CFT	anti-money-laundering/combating the financing of terrorism
CARI-12	Caribbean countries covered by the Regional Private Sector Diagnostic
CARICOM	Caribbean Community
CBR	correspondent banking relationship
CET	common external tariff
DFS	digital financial services
DG	distributed generation
ECCU	Eastern Caribbean Currency Union
EC\$	Eastern Caribbean dollar
EGDI	E-Government Development Index
EMDEs	emerging markets and developing economies
FDI	foreign direct investment
fintech	financial technology
GDP	gross domestic product
GNI	gross national income
ICT	information and communication technology
IFPG	Innovation, Firm Performance and Gender
IDB	Inter-American Development Bank
ILO	International Labour Organization
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPPs	independent power producers
IRP	integrated resource plan
IT	information technology
MSME	micro, small, and medium enterprises
MSW	maritime single window (system)
NDC	nationally determined contributions
NPL	nonperforming loan
NSW	national single window (system)
NTFC	National Trade Facilitation Committee
NTM	nontariff measure

<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OECS</b>	Organization of Eastern Caribbean States
<b>PPA</b>	power purchase agreement
<b>PPP</b>	public-private partnership
<b>PV</b>	photovoltaic
<b>RPSD</b>	Regional Private Sector Diagnostic
<b>RTFC</b>	Regional Trade Facilitation Committee
<b>SIDS</b>	small island developing states
<b>SME</b>	small and medium enterprises
<b>SOE</b>	state-owned enterprise
<b>STEM</b>	science, technology, engineering, and mathematics
<b>TIP</b>	trade information portal
<b>TVET</b>	technical and vocational education and training
<b>UK</b>	United Kingdom
<b>UN</b>	United Nations
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>US</b>	United States
<b>vRE</b>	variable renewable energy
<b>WBG</b>	World Bank Group
<b>WDI</b>	World Development Indicators
<b>WITS</b>	World Integrated Trade Solution

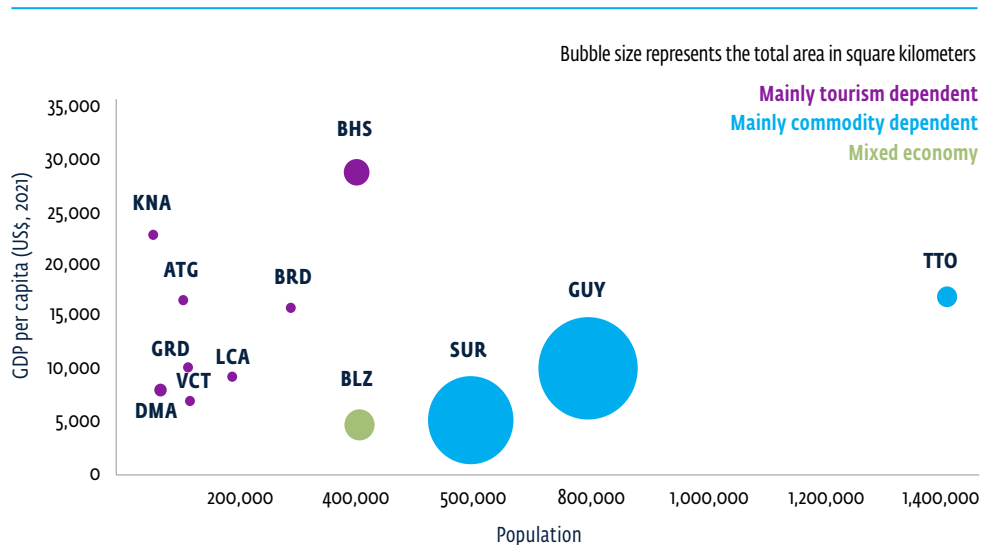


## **1. REGIONAL ECONOMIC CONTEXT**

## 1.1 STAGNATING AND VOLATILE ECONOMIC AND FISCAL PERFORMANCE

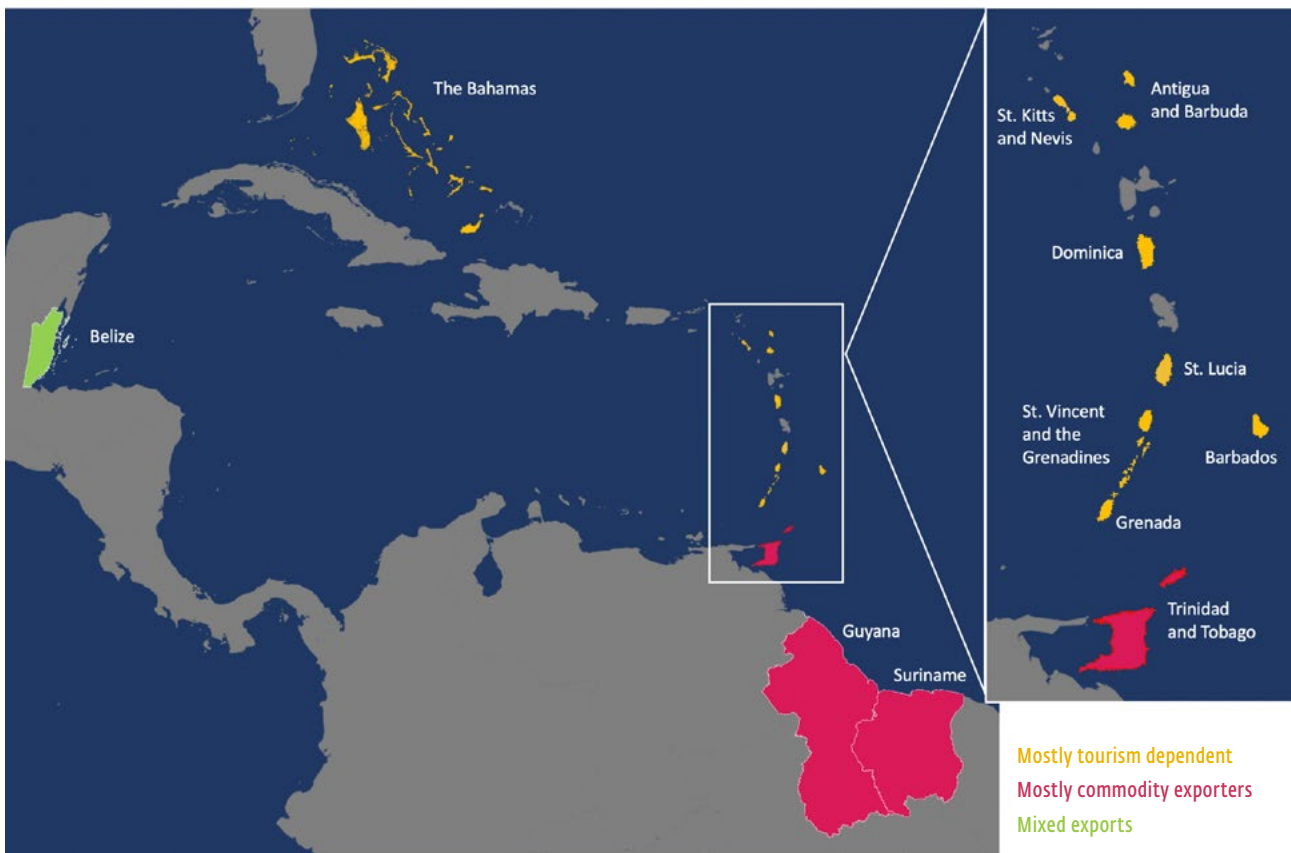
This Regional Private Sector Diagnostic (RPSD) covers 12 small states and microstates in the Caribbean (collectively, the CARI-12), which share many structural features and challenges but still present marked differences.<sup>1</sup> Several of the countries rank in the bottom 15th percentile globally by population, land area, and GDP and share similarities (figures 1.1 and 1.2). With populations ranging from 52,000 in St. Kitts and Nevis to 1 million in Trinidad and Tobago, the CARI-12 are home to 4.5 million people—roughly equal to the population of Panama. The geography and natural assets of most of the CARI-12 have turned them into global tourist destinations, boosting their GDP per capita far above the Latin American and Caribbean average (figure 1.3). However, these features also bring exposure to natural disasters—and the ensuing economic and fiscal volatility (see “Unsustainable fiscal positions” later in this section)—further complicating the path toward economic diversification.

**FIGURE 1.1 THE CARI-12: POPULATION × LAND AREA × GDP PER CAPITA**



Source: World Bank’s World Development Indicators (WDI), WBG calculations.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BLZ = Belize; BRB = Barbados; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

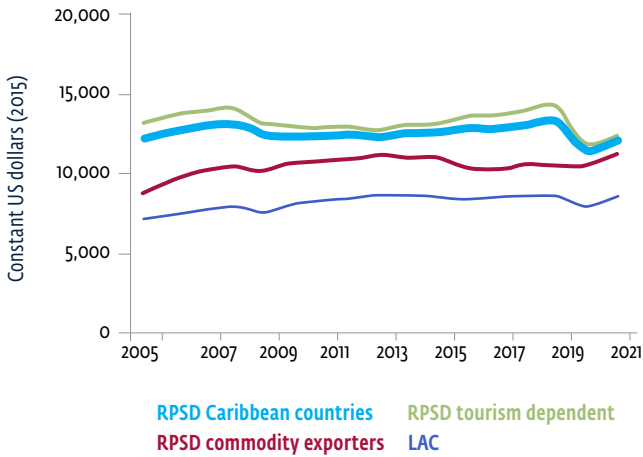
**FIGURE 1.2 MAP OF THE CARI-12**

Source: WBG elaboration.

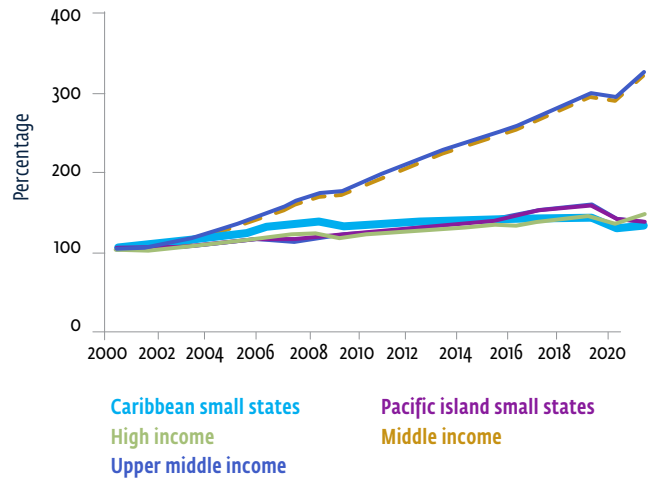
In recent decades, real GDP in the CARI-12 countries has grown at roughly half the pace as that in other emerging markets and developing economies (EMDEs) (figure 1.4). Average annual growth in CARI-12 countries was 3.4 percent lower than in other EMDEs over the past two decades, averaging 2.9 percent between 2000 and 2010 and decelerating to 0.8 percent since 2011. The commodity-exporting CARI-12 economies (Guyana, Suriname, and Trinidad and Tobago) grew at an average annual rate of 2.2 percent between 2012 and 2021, compared to a rate of 0.4 percent in the tourism-dependent economies (Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines). However, the difference is largely due to the pandemic-induced, double-digit contraction experienced by the latter group in 2020. In fact, the commodity-exporting countries grew more slowly than the tourism-dependent ones between 2012 and 2019 as a result of slumping oil prices.<sup>2</sup> Overall, the spell of low growth throughout the CARI-12 over the last decade began as a repercussion of the Global Financial Crisis of 2007–08, with an accompanying fall in foreign direct investment (FDI) and tourism, as well as attendant fiscal challenges. FDI growth slowed across most of the CARI-12, from 27 percent year-on-year in the pre-Global Financial Crisis period to 18 percent between 2009 and 2019. Beyond the averages, FDI flows into the region are highly volatile—especially in tourism-dependent countries—with annual fluctuations ranging between -20 percent (in 2011) to +101 percent (in 2016) over the last decade.



**FIGURE 1.3 GDP PER CAPITA (CONSTANT 2015 US\$, 2005–21)**



**FIGURE 1.4 REAL GDP PERFORMANCE (% , 2000–21)<sup>1</sup>**



Source: World Bank’s World Development Indicators (WDI), and IMF estimates.

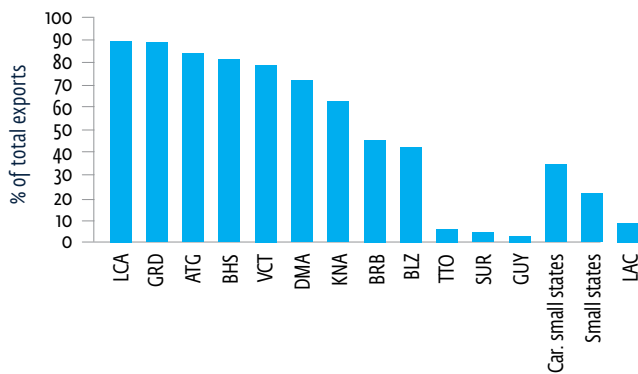
Note: The WDI’s Caribbean small states subgroup includes the CARI-12 countries plus Jamaica. LAC = Latin America and the Caribbean; RPSD = Regional Private Sector Diagnostic.

**Limited diversification affects the pace of growth; the CARI-12 economies are relatively concentrated in one or two major sectors and are therefore highly vulnerable to economic shocks and volatility** (see figure 1.1). Tourism is responsible for a significant share of economic activity in nine of the CARI-12; it accounts for 29 percent of GDP on average, but for as much as 42.7, 40.7, and 40.5 percent in Antigua and Barbuda, Saint Lucia, and Grenada, respectively.<sup>3</sup> Tourism receipts make up over 50 percent of total exports in 7 out of 12 countries, and the sector accounts for almost 15 percent of total employment across the whole group (figures 1.5 and 1.6). Belize is the sole country in the CARI-12 to rely significantly on both tourism and commodities production, with agriculture and tourism contributing 10 percent and 37.3 percent of GDP, respectively, in 2019 (figure 1.7), but it is classified in this RPSD as tourism dependent. Conversely, the economies of Guyana, Suriname, and Trinidad and Tobago depend mainly on their commodities: agricultural products; gold, bauxite, other precious metals; and oil and gas. In recent years, Guyana and Suriname have discovered large deposits of oil and gas, which are expected to drive rapid economic growth in the coming decade.<sup>4</sup> Trinidad and Tobago has historically been reliant on the oil and gas sector, which accounts for 30 percent of the country’s GDP. External shocks, such as frequent natural disasters, global economic recessions, and fluctuations in commodity prices, have increased economic volatility throughout the region. Natural disasters have had devastating impacts over the past decade, resulting in losses of more than 100 percent of GDP in certain countries (such as Dominica in 2017

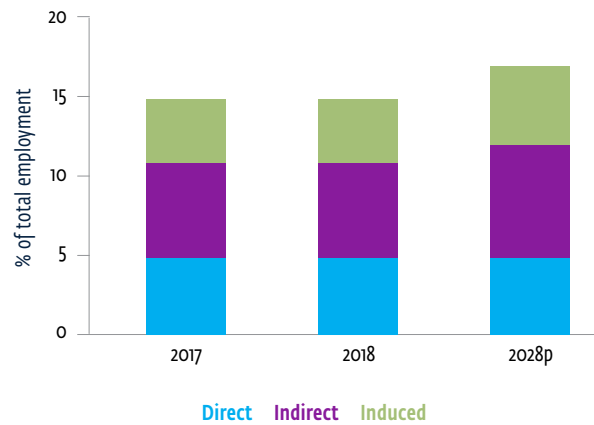
1. The World Bank assigns the world’s economies to four income groups—low, lower-middle, upper-middle, and high-income countries. For the current 2023 fiscal year, low-income economies are defined as those with a GNI per capita, calculated using the World Bank Atlas method, of \$1,085 or less in 2021; lower middle-income economies are those with a GNI per capita between \$1,086 and \$4,255; upper middle-income economies are those with a GNI per capita between \$4,256 and \$13,205; high-income economies are those with a GNI per capita of \$13,205 or more.

and St. Kitts and Nevis in 1998). Similarly, because of the drop in global oil prices in 2015 and 2016, Suriname’s GDP contracted by an average of 4.5 percent over that period, and Trinidad and Tobago’s GDP contracted by 4.0 percent. In addition to the impact of natural disasters, the region’s blue economy could be affected by the inadequate protection of its rich natural endowments<sup>5</sup> and its limited resources.

**FIGURE 1.5 TOURISM RECEIPTS AS THE PERCENTAGE OF TOTAL EXPORTS (2019 OR LATEST AVAILABLE)**



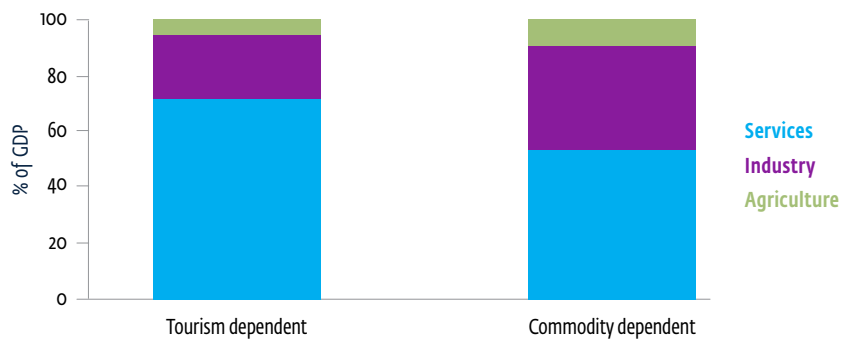
**FIGURE 1.6 TRAVEL AND TOURISM EMPLOYMENT (CARIBBEAN AVERAGE)**



Source: World Travel & Tourism Council; KNOMAD/World Bank, World Development Indicators (WDI), 2022.

Note: The WDI’s Caribbean small states subgroup includes the CARI-12 countries plus Jamaica. 2028p = predicted value for 2028, ATG = Antigua and Barbuda; BHS = the Bahamas; BLZ = Belize; BRB = Barbados; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines. LAC = Latin America and the Caribbean.

**FIGURE 1.7 SECTORAL CONTRIBUTIONS TO GDP IN TOURISM- AND COMMODITY-DEPENDENT COUNTRIES, 2019**

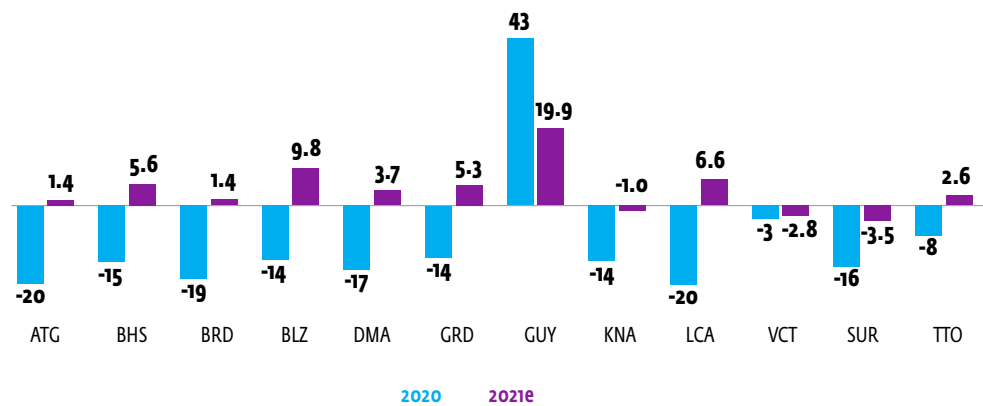


Source: World Travel & Tourism Council; KNOMAD/World Bank, World Development Indicators, 2022.

The pandemic caused a severe fall of GDP in most of the CARI-12 in 2020, followed by uneven recoveries in 2021 and potential medium-term effects on growth and the fiscal outlook. Most tourism-dependent countries experienced double-digit contractions in real GDP in 2020—when international arrivals plunged by more than 65 percent—followed by a modest recovery in 2021 (figure 1.8). Commodity exporters, on the other hand, had mixed results. A collapse in oil and gas prices resulted in a loss of 7.9 percent of GDP in Trinidad and Tobago in 2020, followed by a modest recovery of 2.6 percent in 2021. In contrast, Guyana’s real GDP is estimated to have grown by an extraordinary 43.5 percent in 2020, as the country’s first oil sales after a full year of production more than offset a 7.3 percent contraction in the non-oil economy.<sup>6</sup>

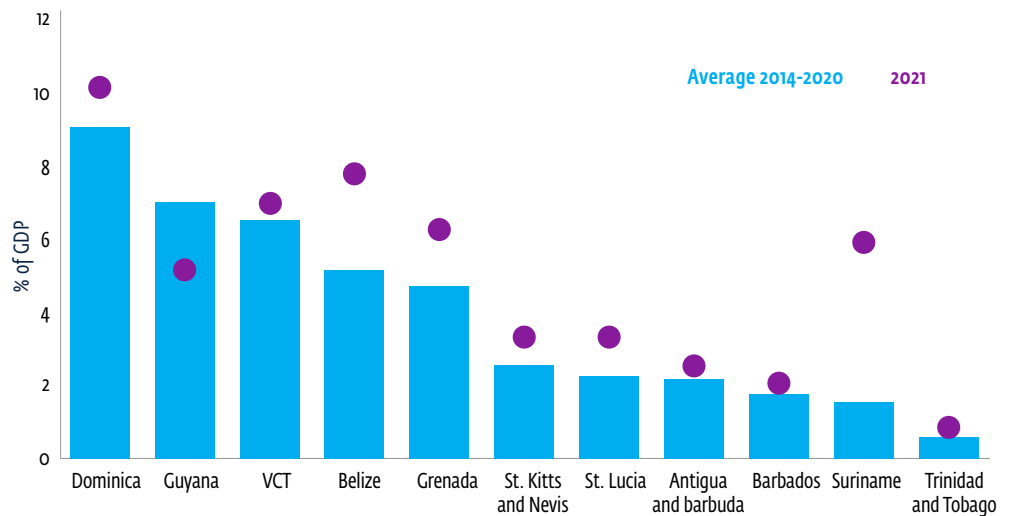
The recovery from COVID-19 is set to be slow in the CARI-12, with real GDP in tourism-dependent countries—as well as in Belize and Trinidad and Tobago—not expected to reach pre-pandemic levels before 2024. Oil sales should continue to fuel Guyana’s growth. On the other hand, Suriname’s outlook will depend on restoring macroeconomic stability post-pandemic, while recent oil discoveries may have a positive effect on growth and fiscal revenues. The war in Ukraine and the associated inflation are expected to further delay the recovery because of their impact on the economic growth of major economies and the higher import costs. Remittances remain an important source of income in the region (figure 1.9); notably, post-pandemic inflows across the CARI-12 have been higher than the average for the 2014–19 period. Overall, the prospects for long-term growth in the region suffer from a lack of fiscal space to mitigate future shocks and invest in infrastructure, education, and health.

**FIGURE 1.8 REAL GDP GROWTH, 2020–21, %**



Source: World Travel & Tourism Council; KNOMAD/World Bank, World Development Indicators (WDI), 2022.

Note: The WDI’s Caribbean small states subgroup includes the CARI-12 countries plus Jamaica. 2021e = expected values for 2021. ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**FIGURE 1.9 REMITTANCES INFLOWS (% GDP)**

Source: World Travel & Tourism Council; KNOMAD/World Bank, World Development Indicators (WDI), 2022.

Note: The WDI's Caribbean small states subgroup includes the CARI-12 countries plus Jamaica. For remittances, data on the Bahamas is not available. VCT = St. Vincent and the Grenadines.

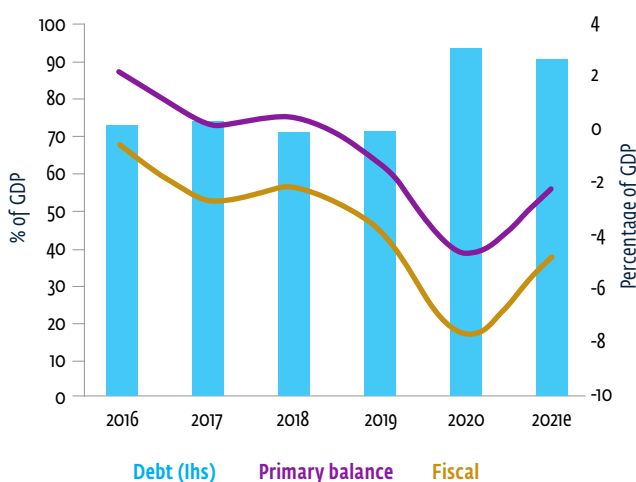
### Unsustainable fiscal positions

**Fiscal sustainability is a long-standing concern across the CARI-12 countries, hampering both public and private long-term investment.** Large fiscal deficits and growing debt stem from weak macroeconomic policies, financial sector crises requiring costly government interventions, overspending by large and inefficient public bodies and state-owned enterprises (SOEs),<sup>7</sup> commodity price shocks, and frequent and severe natural disasters. On the latter point, recent joint analyses by the International Monetary Fund (IMF) and the World Bank across the region suggest that a natural disaster could increase a country's debt-to-GDP ratio by more than 10 percentage points, as was the case in Dominica following Hurricane Maria in 2017. Commodity exporters face a major challenge from volatile commodity prices, which affect fiscal planning over both the short and long term.

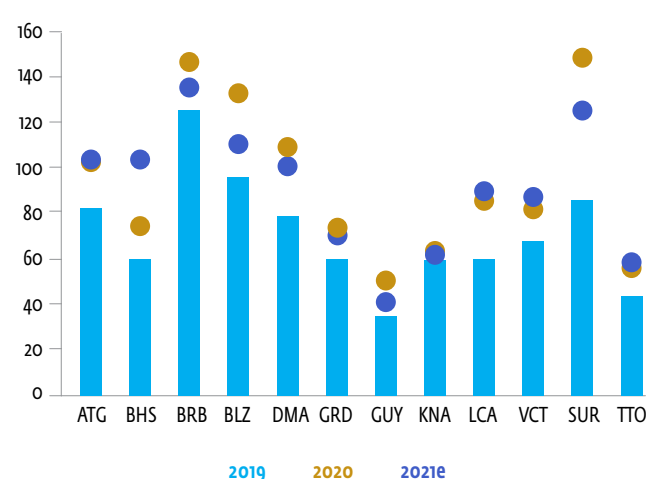
**The fiscal performance of the CARI-12 before the pandemic was mixed, with the tourism-dependent economies showing more stable fiscal positions than their commodity-focused counterparts.** While the region overall is one of the world's most indebted (figure 1.10), the fiscal deficit in the tourism-dependent countries remained relatively stable between 2015 and 2019, from 1.6 to 2.1 percent of GDP, just as slumping commodity prices were pushing the fiscal deficit in the commodity-exporting countries to 8.4 percent of GDP in 2019 (from a 2010–15 average of 2.7 percent). However, the pandemic degraded fiscal balances across both groups because of the interruption of tourism, a fall in commodity prices, and higher health expenditures. Debt levels across the region were already high pre-pandemic, with public debt at an

average of 70.9 percent of GDP in 2019 (figure 1.11) and external debt as a share of GDP averaging a significant 53.9 percent. In 2020, public debt in the region increased by over 20 percentage points to reach an average of 93.2 percent of GDP and is estimated to have only fallen to 90.5 percent of GDP in 2021. Reducing debt ratios will require major policy decisions about fiscal rules, revenue mobilization, and the efficiency of public expenditure. Concurrently, the CARI-12 countries will need to build resilience against natural disasters and reduce their significant infrastructure gap. These efforts will likely entail considerable economic costs and will only be sustainable if underpinned by sound public investment planning.

**FIGURE 1.10 FISCAL ACCOUNT AND DEBT DYNAMICS**



**FIGURE 1.11 GROSS DEBT, % GDP**



Source: World Bank, World Development Indicators; IMF, World Economic Outlook estimates.

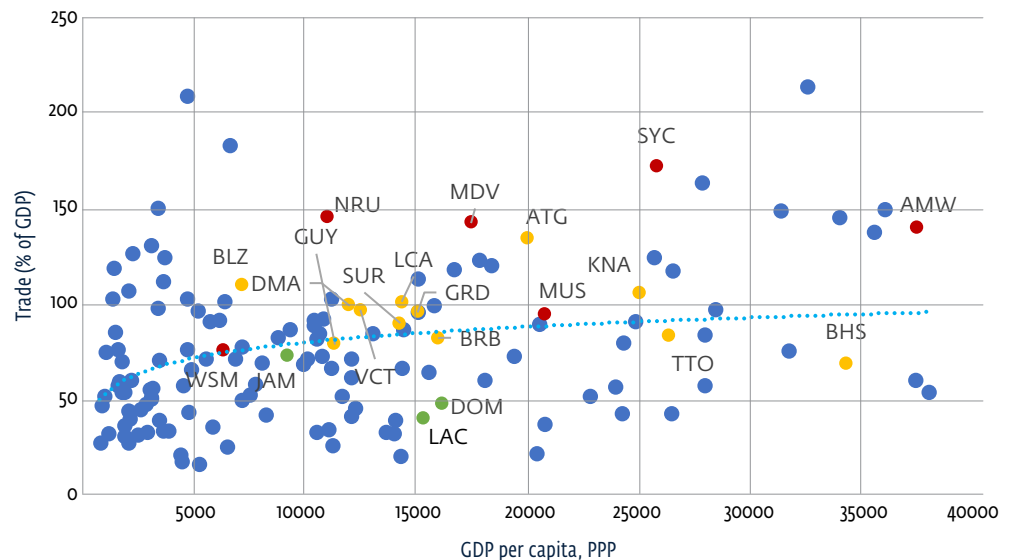
Note: Debt and primary/fiscal balance averages include the CARI-12. 2021e = expected values for 2021. ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**Lack of fiscal space, compounded by the frequency of natural disasters, affects the ability of governments to deliver adequate infrastructure and build resilience to economic and climate shocks.** Several studies showed that natural disasters such as hurricanes, floods, droughts, and earthquakes have a material negative effect on growth in the Caribbean (see section 3.4).<sup>8</sup> In addition to damaging physical assets and disrupting economic activity, especially in tourism, such disasters lead to increased public spending to mitigate their impact and ensure business continuity.<sup>9</sup> This, in turn, prompts additional government borrowing, further debt accumulation, and a reduction in the resources available for infrastructure development. This dynamic constrains private sector growth and further exacerbates the economy’s vulnerability to natural disasters, creating a vicious cycle. Against this background, this RPSD aims to outline policy reforms and actions that address key constraints to private sector development while boosting recovery and resilience across the CARI-12.

## 1.2 FRAGILE TRADE FUNDAMENTALS

Enhancing trade competitiveness will be critical to the CARI-12's recovery from the pandemic-induced economic downturn. As a group of small economies that are highly dependent on trade, the CARI-12 have much to gain from further integrating into global trade flows. Trade allows regional industries to achieve economies of scale by accessing larger markets abroad and to satisfy internal demand for goods and services that are not produced regionally. Trade-to-GDP ratios vary markedly across the CARI-12, ranging from 72 percent in the Bahamas to 137 percent in Antigua and Barbuda as of 2016 (figure 1.12). Although most CARI-12 countries are more trade oriented than similarly developed peers, they are less so than other comparable small states, such as Maldives, Nauru, and the Seychelles.

**FIGURE 1.12 TRADE-TO-GDP RATIO AND INCOME PER CAPITA, 2016**



Source: WBG estimates based on World Bank, World Development Indicators.

Note: The CARI-12 are yellow, peer comparators are green, and select countries with population sizes below 200,000 are red. The CARI-12: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago. Peer competitors: JAM = Jamaica; LAC = Latin America and the Caribbean; DOM = Dominican Republic. Select countries: SYC = Seychelles; NRU = Nauru; MDV = Maldives; AMW = Aruba; MUS = Mauritius; WSM = Samoa.

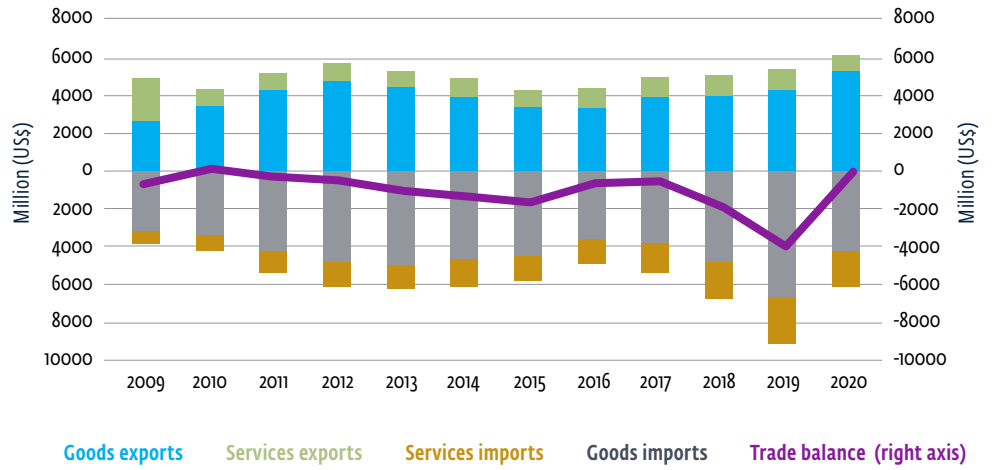
All CARI-12 countries, barring Trinidad and Tobago, have consistently maintained a negative trade balance in recent years as a result of poor competitiveness and insufficient diversification of exports (figures 1.13–1.16). Even Trinidad and Tobago’s positive trade balance nearly disappeared during the second half of the last decade from a drop in commodity prices (figure 1.15). In contrast, the trade balances of the Bahamas, Barbados, and the six CARI-12 countries that are members of the Organization of Eastern Caribbean States (OECS)<sup>10</sup> generally improved over the same period—as growth in tourism boosted services exports, which accounted for between 85 percent and 95 percent of their total exports. This trend in trade balances was reversed by the pandemic, although it is expected to resume with the rapid recovery in tourism. Conversely, the share of goods exports to total exports has declined in most OECS countries, falling to an average of less than 10 percent in 2019 from nearly 20 percent in 2009. Competitiveness challenges in agriculture were exacerbated by the loss of preferential treatment for OECS commodities in the European Union (EU) and the United Kingdom. Yet, goods make up about 90 percent of the total exports of Belize, Guyana, Suriname, and Trinidad and Tobago.

**FIGURE 1.13 EXPORTS, IMPORTS, AND TRADE BALANCE IN BARBADOS AND THE BAHAMAS, 2009–20**



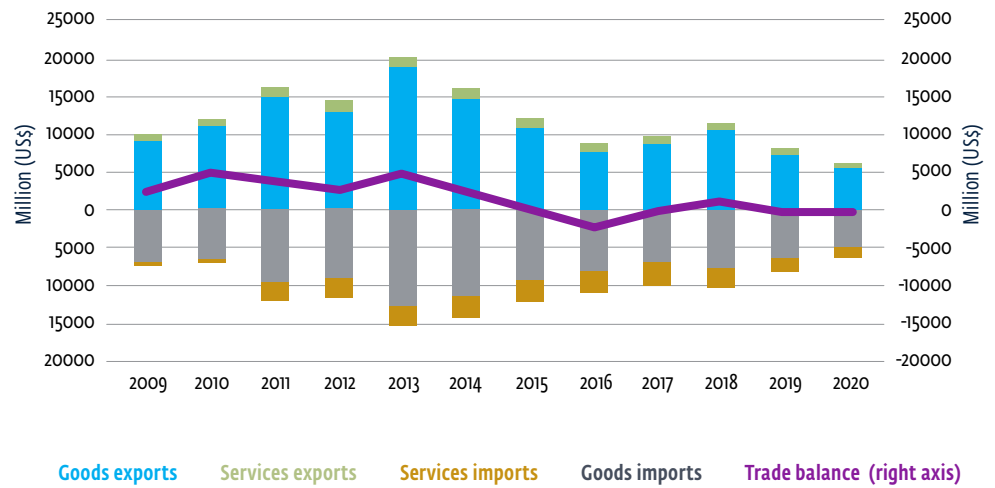
Source: WBG calculations based on data from UNCTAD.

**FIGURE 1.14 EXPORTS, IMPORTS, AND TRADE BALANCE IN BELIZE, GUYANA, AND SURINAME, 2009–20**



Source: WBG calculations based on data from UNCTAD.

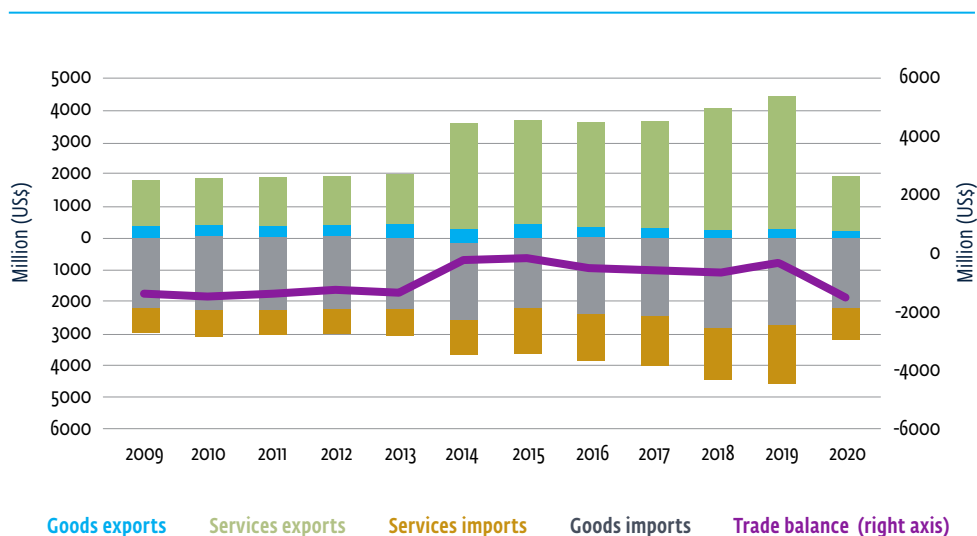
**FIGURE 1.15 EXPORTS, IMPORTS, AND TRADE BALANCE IN TRINIDAD AND TOBAGO, 2009–20**



Source: WBG calculations based on data from UNCTAD.



**FIGURE 1.16 EXPORTS, IMPORTS, AND TRADE BALANCE IN OECS COUNTRIES, 2009–20**

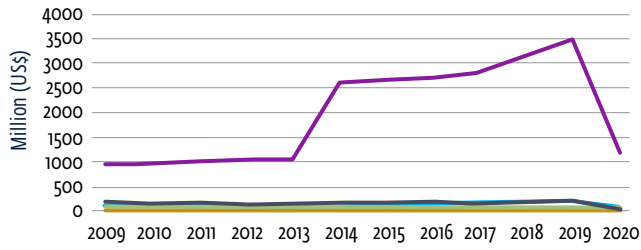


Source: WBG calculations based on data from UNCTAD.

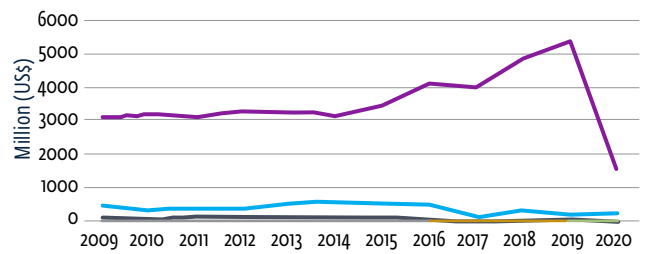
Travel (primarily for leisure) is the region’s key export service, whereas exports of modern business services remain low. Between 2013 and 2019, the OECS countries experienced the largest increase in travel services exports among the CARI-12 (229 percent), followed by the Bahamas and Barbados (61 percent each) (figure 1.17).<sup>11</sup> In the rest of the CARI-12, travel was also the main services export but, except for Belize, it accounted for a very small share of total exports. Notably, tourism-related exports rely heavily on just a handful of markets; as of 2020, almost 64 percent of travelers into the region came from North America, 18 percent came from Europe, and 11 percent came from the Caribbean.<sup>12</sup> On the other hand, modern business services—which have grown rapidly globally over the past decade—are yet to take off in the CARI-12, partly because of skills gaps (including in digital skills) and shortcomings in digital connectivity (see sections 3.2 and 4.2).

**FIGURE 1.17 SERVICES EXPORTS BY CARI-12 SUBGROUP, 2009–20**

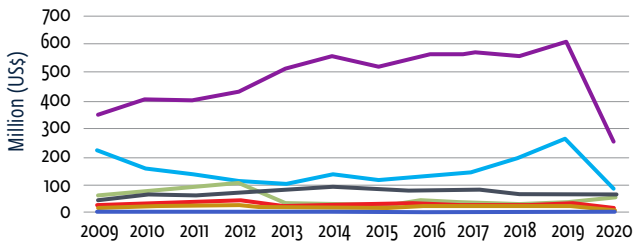
**a. Exports, OECS**



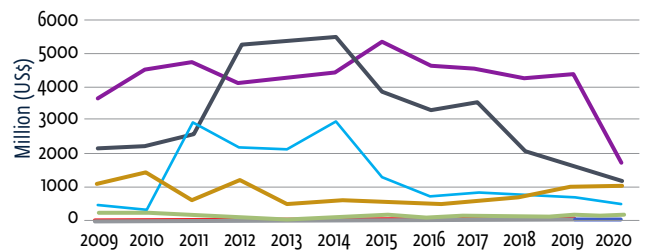
**b Exports, Barbados and the Bahamas**



**c. Exports, Belize, Guyana, and Suriname**



**d. Exports, Trinidad and Tobago**

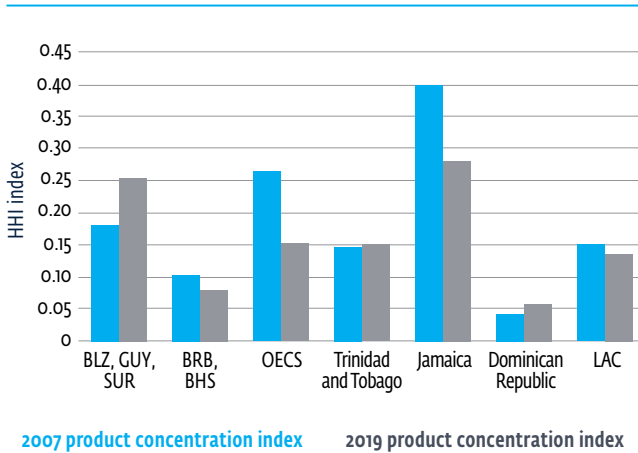


Construction   Financial   Goods related   Insurance   Other business   Telecommunications   Transport   Travel

Source: WBG elaboration based on data from the World Trade Organization.

The CARI-12’s goods exports are more concentrated than the Latin American and Caribbean average, which is consistent with the small size of their economies. Exports from Trinidad and Tobago have remained moderately concentrated over time, with a Herfindahl-Hirschman Index (HHI)<sup>13</sup> of 0.15—compared with an HHI of 0.25 for the other commodity-dependent CARI-12 countries, whose economies are smaller and less diversified (figure 1.18). The concentration of export markets for goods has been decreasing across the region, except in Belize, Guyana, and Suriname (figure 1.19). This drop has been more pronounced in Trinidad and Tobago, where oil exports that mostly flow to the United States have lost some relative prominence while exports of alcohols, ammonia, and boring machinery to China, Guyana, and Mexico have increased.

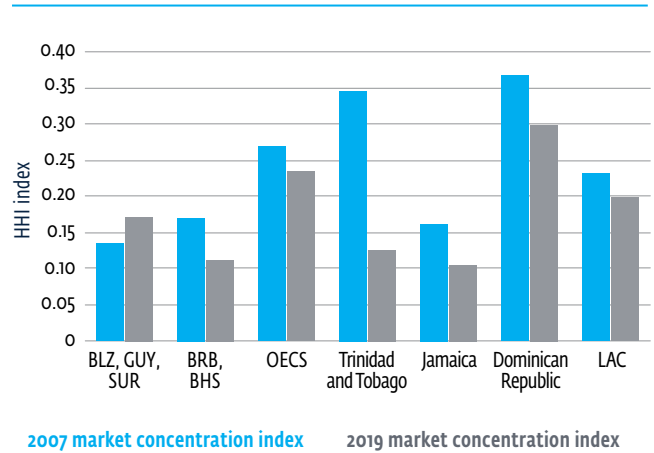
**FIGURE 1.18 CONCENTRATION OF EXPORTED GOODS, 2007 VERSUS 2019**



Source: WBG estimates using CEPII/BACI data.

Note: The analysis considered the year 2019, given pandemic-induced trade disruption in 2020 and 2021. BHS = the Bahamas; BLZ = Belize; BRB = Barbados; GUY = Guyana; SUR = Suriname; OECS = Organization of Eastern Caribbean States; LAC = Latin America and the Caribbean.

**FIGURE 1.19 CONCENTRATION OF EXPORT MARKETS FOR GOODS, 2007 VERSUS 2019**

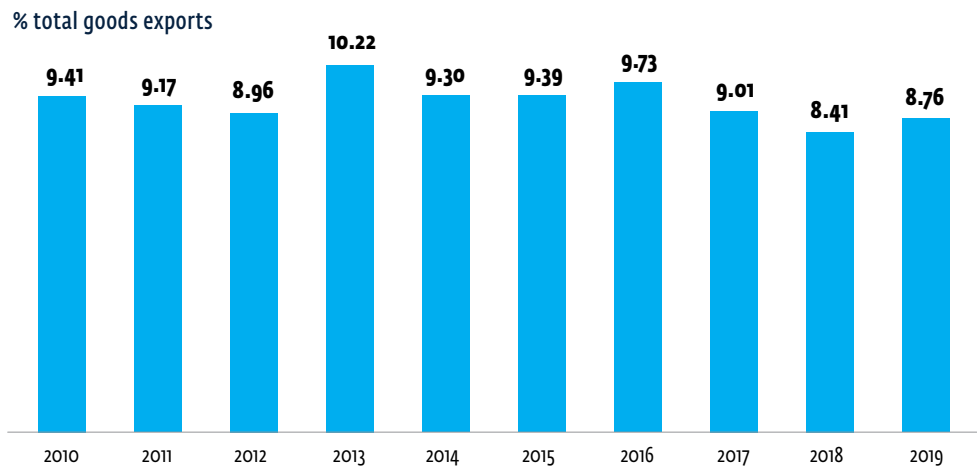


Source: WBG estimates using CEPII/BACI data.

Note: The analysis considered the year 2019, given pandemic-induced trade disruption in 2020 and 2021. BHS = the Bahamas; BLZ = Belize; BRB = Barbados; GUY = Guyana; SUR = Suriname; OECS = Organization of Eastern Caribbean States; LAC = Latin America and the Caribbean.

Intraregional trade within the CARI-12 is relatively low, with an emphasis on goods, and predominantly involves just a handful of countries, leaving room for further integration. Intraregional goods exports hovered around 9 percent of total CARI-12 goods exports over the past decade (figure 1.20), driven by the exports of Trinidad and Tobago (about 67 percent of total intraregional goods exports in 2018), followed by Barbados (12 percent) and Guyana (9 percent). Guyana is the leading local importer, accounting for 45 percent of intraregional goods imports, ahead of Barbados (18 percent), Saint Lucia (7 percent), and Trinidad and Tobago (7 percent).

**FIGURE 1.20 INTRAREGIONAL GOODS EXPORTS AS A SHARE OF TOTAL GOODS EXPORTS**



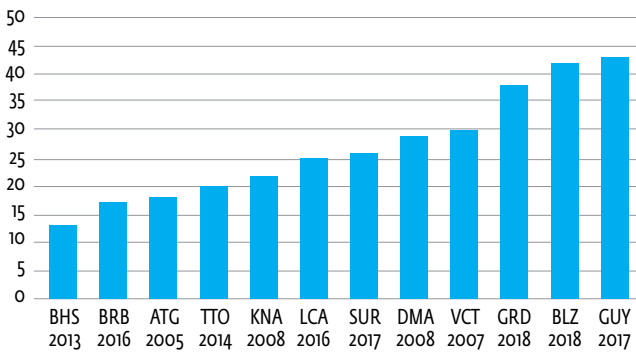
Source: WBG, World Integrated Trade Solution.

### 1.3 MIXED OUTCOMES IN SOCIAL DEVELOPMENT

GDP per capita in the CARI-12 is higher than the Latin American and Caribbean average, and poverty rates are comparable to those of other EMDEs; however, the region's progress toward the living standards of advanced economies has slowed down in recent decades, and youth unemployment is very high.<sup>14</sup> Average GDP per capita in the CARI-12 peaked at US\$11,981 in 2019, on the eve of the COVID-19 pandemic. This marked a 7.0 percent improvement since 2005—mainly driven by the commodity-dependent countries—relative to 19.5 percent growth in Latin America and the Caribbean over the same period. Highlighting the economic damage subsequently inflicted by the pandemic, World Bank Group estimates suggest that GDP per capita in several CARI-12 countries—especially those more reliant on tourism—will remain below 2019 levels over the medium term.<sup>15</sup> Despite improvements in living standards, the average poverty rate within the CARI-12 is 27 percent. A lack of timely and comparable data leaves uncertainty about the degree to which inequality has been reduced across the region and how much it may increase because of the pandemic. The latest available indicators show that the poverty

outlook has been improving in the Bahamas, Barbados, and Saint Lucia, while Belize, Grenada, and Guyana are lagging (figure 1.21). Inequality in the region ranges from moderate to high, with Gini index values between 37 and 58,<sup>16</sup> compared to the Latin American and Caribbean average of 46 (figure 1.22). Recent job losses stemming from the pandemic, especially in tourism-dependent countries, have particularly affected vulnerable groups such as low-income households, informal workers, and women. This turn of events is likely to erase some of the human development progress attained in recent years and cause an increase in poverty and inequality.

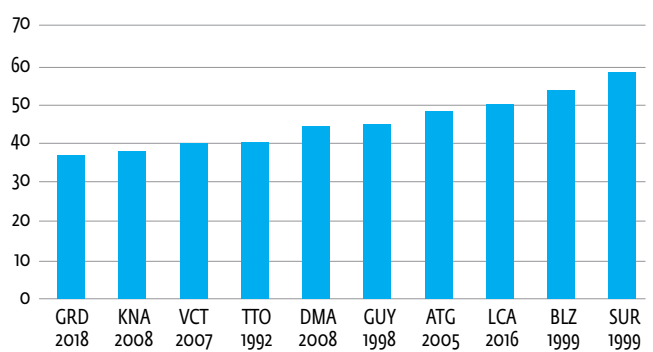
**FIGURE 1.21 POVERTY RATES (% POPULATION, LATEST AVAILABLE DATA)**



Source: World Bank, World Development Indicators and spring 2021 macro-poverty outlooks.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**FIGURE 1.22 GINI INDEX (LATEST AVAILABLE DATA)**



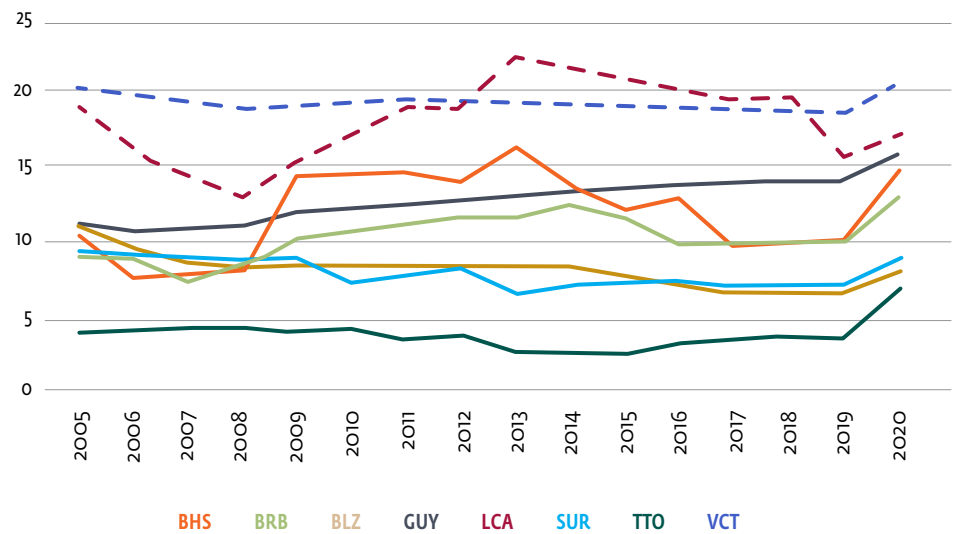
Source: World Bank, World Development Indicators.

Note: The higher the index, the greater the inequality. ATG = Antigua and Barbuda; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**Structural and cyclical factors, as well as the effects of the pandemic, contribute to high unemployment in many CARI-12 countries, especially among young people.** High unemployment rates, particularly in the OECS countries, date to the 1990s and 2000s and largely stem from two factors: (a) the loss of preferential access to the EU market for the region’s sugar and banana exports and (b) frequent natural disasters. For instance, after banana-producing countries in the Caribbean lost preferential access to the EU market in the mid-1990s, the number of registered banana growers in the region plunged from about 24,000 in 1993 to 5,000 in 2005.<sup>17</sup> Moreover, unemployment in Grenada and Dominica rose in the wake of catastrophic hurricanes in 2004–05 and 2017, respectively. Finally, the severe economic contraction brought about by the pandemic has caused a surge in unemployment across the region, especially in the tourism-dependent countries, with the average unemployment rate rising from 8.3 percent in 2019 to 10.1 in 2020.<sup>18</sup> Unemployment rates in 2020 ranged from 4.6 percent in Trinidad and Tobago to 21.0 percent in St. Vincent and the Grenadines, followed by Saint Lucia (16.9 percent) and Guyana (16.4 percent) (figure 1.23). Surveys conducted in Saint Lucia showed that,

as of August 2020, only 47.2 percent of working-age adults were working<sup>19</sup> and, as of November 2020, 32 percent of respondents had recently become unemployed.<sup>20</sup> In addition to demand shocks, structural factors such as labor market rigidities (for instance, in relation to setting wages) contribute to persistently high unemployment in certain countries.<sup>21</sup> Employment opportunities for young people, in particular, remain scarce. As of 2019, the youth unemployment rate was 38 percent in St. Vincent and the Grenadines and 36 percent in Saint Lucia—approximately twice the Latin American and Caribbean average of 19 percent<sup>22</sup>—and further rose to 41 percent and 39 percent, respectively, in 2020. Conversely, the lowest youth unemployment rate across the CARI-12 in 2019 was in Trinidad and Tobago (9.2 percent). Considering changes in the nature of work, progress in automation, and the expected slow pace of global economic recovery in the years to come, the World Economic Forum predicts that many of those who lost their jobs during the pandemic are at high risk of becoming long-term unemployed.

**FIGURE 1.23 UNEMPLOYMENT (AS % OF TOTAL LABOR FORCE)—MODELED INTERNATIONAL LABOUR ORGANIZATION ESTIMATE, 2005–20**

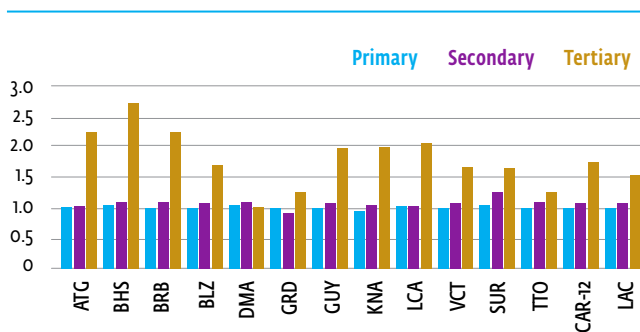


Source: World Bank, World Development Indicators.

Note: BHS = the Bahamas; BLZ = Belize; BRB = Barbados; GUY = Guyana; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

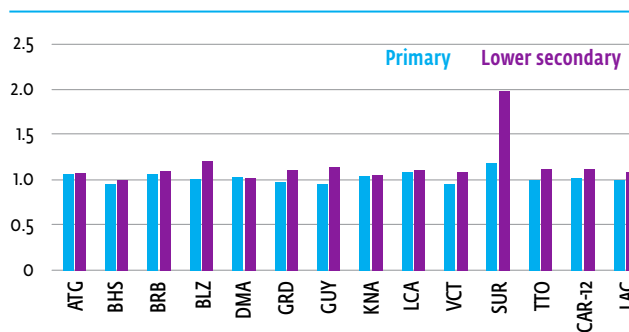
There has been major progress toward gender parity in education in the CARI-12 countries, but this is yet to result in improved economic opportunities for women (figures 1.24–1.27). The region has achieved gender equality in primary and secondary education, while more women tend to pursue tertiary education than men do. Female tertiary enrollment is double that of men in Antigua and Barbuda, the Bahamas, Barbados, Guyana, St. Kitts and Nevis, and Saint Lucia. However, higher female enrollment and completion rates do not translate into equal opportunities in the labor market. The average female labor force participation rate in the region is 62 percent, while the rate for men is 80 percent. Similarly, unemployment rates are higher among women than men in all countries except the Bahamas, Barbados, and Trinidad and Tobago (where the male and female unemployment rates are almost equal), as well as St. Vincent and the Grenadines (where more men are unemployed than women).

**FIGURE 1.24 RELATIVE SCHOOL ENROLLMENT, FEMALE TO MALE RATIO (2019 OR LATEST AVAILABLE)**



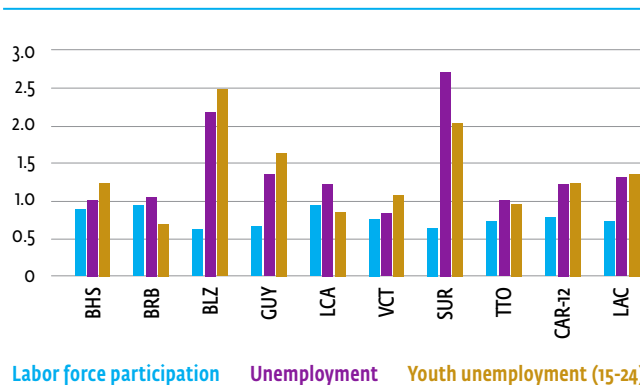
Source: World Development Indicators.  
 Note: Net enrollment for primary and secondary levels. Gross enrollment for tertiary level.

**FIGURE 1.25 RELATIVE SCHOOL COMPLETION, FEMALE TO MALE RATIO (2019 OR LATEST AVAILABLE)**



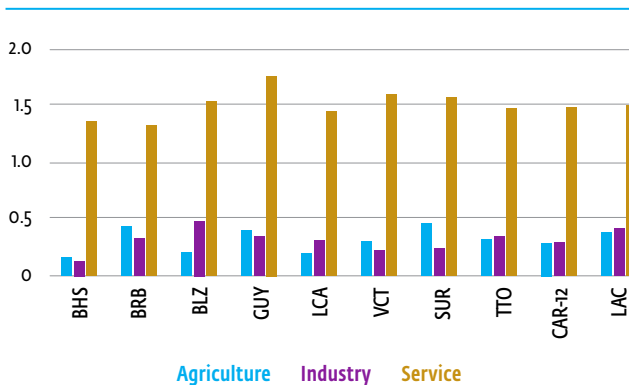
Source: World Development Indicators.

**FIGURE 1.26 RELATIVE LABOR FORCE AND UNEMPLOYMENT, FEMALE TO MALE RATIO (2020 OR LATEST AVAILABLE)**



Source: World Development Indicators.  
 Note: For figures 1.24–1.27: The CARI-12 countries are ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; LAC = Latin America and the Caribbean; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTD = Trinidad and Tobago.

**FIGURE 1.27 RATIO OF FEMALE-TO-MALE EMPLOYMENT BY SECTOR (2019 OR LATEST AVAILABLE)**



## Notes

1. The CARI-12 countries are Antigua and Barbuda, the Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Suriname, and Trinidad and Tobago.
2. Removing 2020 and 2021 from the calculation shows that the tourism-dependent CARI-12 economies grew more rapidly between 2012 and 2019, at an annual average of 1.8 percent, compared with 0.9 percent in the commodity-exporting countries.
3. WTTC (World Travel and Tourism Council), "Travel and Tourism: Global Economic Impact & Trends" (WTTC, London, 2020).
4. Such effects are already visible in Guyana, whose GDP has expanded by 43.5 percent and 19.9 percent in real terms in 2020 and 2021, respectively. In Suriname, oil production is expected to materialize only in the second half of this decade.
5. World Bank, "Technical Assessment on the Blue Economy on Dominica, Grenada, Saint Lucia, and Saint Vincent and the Grenadines" (Internal document, World Bank, Washington, DC, 2021).
6. Guyana's oil production averaged 74,300 barrels per day in 2020.
7. In the CARI-12, systematic country data to evaluate SOEs and incorporate their contingent liabilities into fiscal- or debt-risk analyses are limited. In Grenada, SOEs' contingent liabilities include nonguaranteed SOE debt—which amounted to EC\$501.1 million (or 16.5 percent of GDP) as of the end of September 2018—and other liabilities, including those from the national pension scheme. In Barbados, the Financial Management and Audit Act (FMA) enacted in January 2019, combined with other reforms, is expected to reduce the burden placed by SOEs on the public budget through a combination of stronger oversight from the Ministry of Finance, improved reporting, cost reductions, and revenue enhancements.
8. İnci Ötker and Krishna Srinivasan, "Bracing for the Storm: For the Caribbean, Building Resilience Is a Matter of Survival" *Finance & Development*, 55, no. 1 (2018).
9. Luisito Bertinelli and Eric Strobl, "Quantifying the Local Economic Growth Impact of Hurricane Strikes: An Analysis from Outer Space for the Caribbean" *Journal of Applied Meteorology and Climatology* 52, no. 8 (2013): 1688–97.
10. Antigua and Barbuda, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines. Unless noted otherwise, this group is referred to as "OECS countries" in this report. The wider OECS also comprises Montserrat, while Anguilla, the British Virgin Islands, Guadeloupe, and Martinique have associate member status.
11. UNCTAD (United Nations Conference on Trade and Development) statistics and World Bank Group data.
12. World Tourism Organization, Yearbook of Tourism Statistics dataset, UNWTO, Madrid. Data current as of October 20, 2020.
13. The Herfindahl-Hirschman Index (HHI) is a measure of the degree of concentration of exports by export lines and markets, assessing the degree to which the exports of an economy are dependent on specific sectors, products or trading partners. HHI is derived as the (weighted) sum of the squares of the share of each sector or product group in the total exports of an economy.
14. Trevor Alleyne et al., *Unleashing Growth and Strengthening Resilience in the Caribbean* (Washington, DC: International Monetary Fund, 2017).
15. WBG (World Bank Group). "Global Economic Prospects: Latin America and the Caribbean" (World Bank, Washington, DC, 2021).
16. Available Gini index values for the CARI-12 countries are generally outdated, except for Grenada and Saint Lucia.
17. World Bank Group, Organization of Eastern Caribbean States Systematic Regional Diagnostic (Washington, DC: World Bank, 2018).
18. World Bank, World Development Indicators.
19. World Bank and Central Statistics Office Saint Lucia, "The Socio-Economic Impact of the COVID-19 Pandemic in Saint Lucia: Findings from the Saint Lucia COVID-19 High Frequency Phone Survey (COVID-19 HFPS) Analysis of the 2nd Round of Data Collection (July 27 to August 20, 2020)" (2021), 2.
20. According to the National Insurance Corporation, 42,000 people lost their jobs in Saint Lucia in 2020—more than half the country's workforce (83,000). According to another study, job losses affected 39,000 people, particularly among the lower-skilled, the young, and women. See David Jordan, *Saint Lucia Labour Market Needs Assessment Survey Report, 2020* (Washington, DC: World Bank, 2020), 1, 60.
21. Ronald James et al., "Explaining High Unemployment in ECCU Countries" (IMF Working Paper 2019/144, International Monetary Fund, Washington, DC, 2019).
22. More than 60 percent of the population in each country in the region is between ages 15 and 64. On average, 23 percent of the region's population is between ages 0 and 14, and 9 percent is above 65.

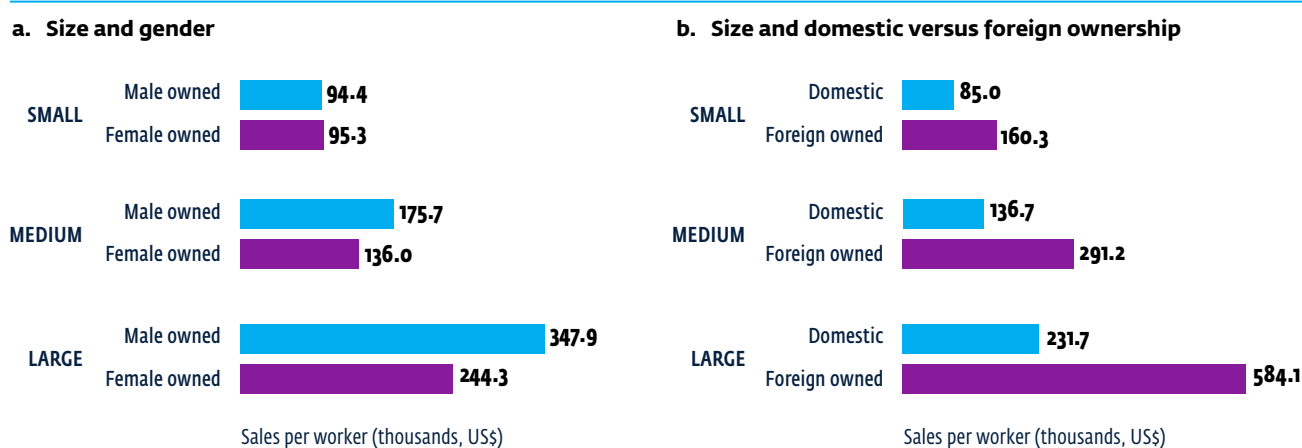




## **2. STATE OF THE PRIVATE SECTOR IN THE CARIBBEAN**

Although there is a paucity of data, private enterprises in the CARI-12 appear to be relatively small and unproductive, while the informal sector remains sizable. The predominance of small and medium enterprises (SMEs) was highlighted by the Innovation, Firm Performance and Gender (IFPG) survey conducted by Compete Caribbean<sup>1</sup> in 2020, which found that about 60 percent of firms across the CARI-12 and Jamaica had fewer than 20 employees, while only about 11 percent had more than 100 employees. These percentages were similar across manufacturing and services. In addition, SMEs are estimated to account for almost 70 percent of jobs.<sup>2</sup> In terms of labor productivity, measured as sales per worker, data from the 2019 IFPG survey show that large firms were about three times and two times more productive than small and medium firms, respectively. Notably, the average firm in the CARI-12 tends to be less productive than its Jamaican peers. On average, foreign-owned firms in the region are more than twice as productive as those owned by locals, and the difference is even greater for large firms (figure 2.1b). Gaps in labor productivity between male- and female-owned enterprises are minimal when considering small firms, but become sizable for larger firms, especially those with more than 100 employees (figure 2.1a). Moreover, the percentage of female-owned firms diminishes as the size of the firm grows,<sup>3</sup> which suggests that constraints to scaling up are greater for female-owned enterprises. Finally, firms in the CARI-12 region—especially in the tourism-dependent countries—are more export oriented than the Latin American and Caribbean average.<sup>4</sup>

**FIGURE 2.1 LABOR PRODUCTIVITY DIFFERENCES IN THE CARI-12 BY FIRM SIZE, OWNER GENDER, AND OWNER NATIONALITY**

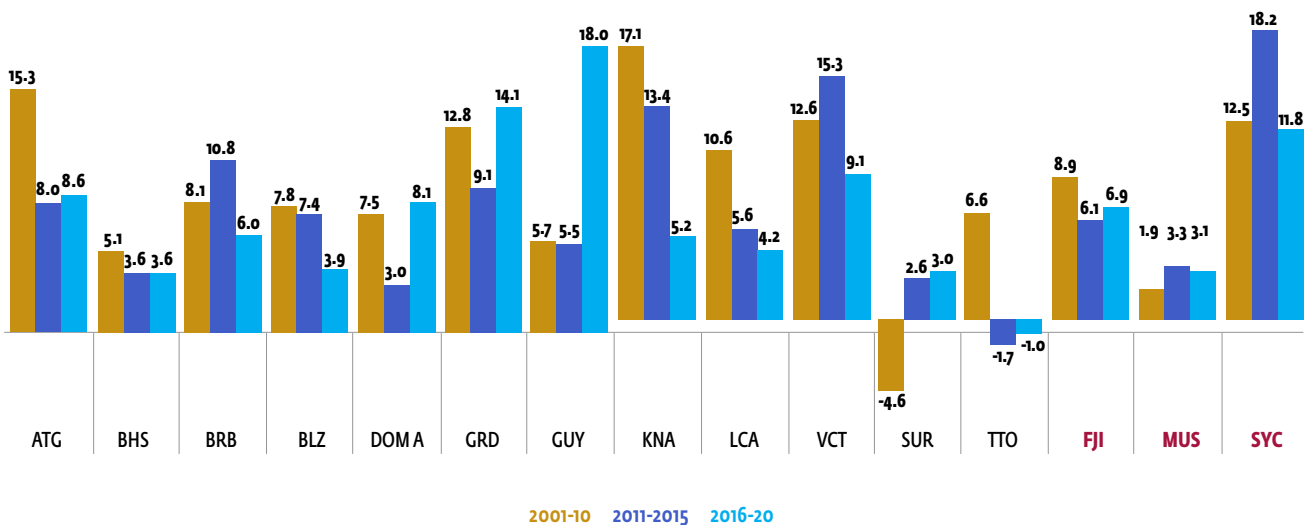


Source: IFPG (Innovation, Firm Performance and Gender) Survey 2021.

Note: Labor productivity was measured by sales per worker. Small, medium, and large firms are those with less than 20 employees, between 20 and 99 employees, and more than 100 employees, respectively. Foreign-owned firms are those with more than 50 percent of foreign ownership.

Net FDI as a share of GDP dropped across the region in the 2010s from the levels seen in the previous decade, and investment flows were unequal between countries. For example, major oil and gas discoveries accelerated FDI flows into Guyana during the second half of the 2010s (figure 2.2) and are expected to have a similar effect in Suriname in the near future. By contrast, Trinidad and Tobago—which benefited from sizable FDI inflows throughout the 1980s and 1990s—recorded net outflows over the past decade, reflecting the maturity of its oil and gas sector. In the tourism-dependent countries, net FDI flows in the 2010s were generally lower than in the previous decade but varied markedly across countries, from 11.0 percent of GDP in Grenada to 3.6 percent of GDP in the Bahamas. This variance shows that greater international integration can be pursued in several CARI-12 countries, if backed by improvements to the investment climate and enhanced export diversification. The regional harmonization of investment codes, which has been supported by the Caribbean Community (CARICOM) but has had slow progress to date, would help with FDI attraction.<sup>5</sup> Last, in five countries—mainly those focused on tourism—net FDI flows in 2020 were lower than in 2019, likely as a result of the COVID-19 pandemic.

**FIGURE 2.2 AVERAGE NET FDI INFLOWS IN CARI-12 AND SELECT COMPARATORS, 2001–20 (AS A % OF GDP)**



Source: World Bank Open Data.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago; FJI = Fiji; MUS = Mauritius; SYC = the Seychelles.

**In the smallest and most tourism-dependent CARI-12 countries (Barbados, the Bahamas, and the OECS), private enterprise is largely concentrated in services.** Private firms mostly operate in tourism and hospitality, as well as in wholesale and retail trade, real estate, business services, transport, and financial services. Manufacturing generally represents less than 5 percent of GDP in these countries, and agriculture has been declining over recent decades. Tourism, which was severely affected by the pandemic during 2020 and much of 2021, picked up substantially in 2022 with the rollout of vaccines, better health and safety measures, and the easing of travel restrictions.

**In the larger CARI-12 countries (Guyana, Suriname, and Trinidad and Tobago), the private sector is more diversified.** In Trinidad and Tobago, large multinational companies (along with three major SOEs) drive economic activity in mining and oil and gas, which make up a large share of the country's GDP and exports. SMEs are concentrated in services (construction, retail, hospitality, and finance) and manufacturing (food, beverages, and tobacco).<sup>6</sup> The expansion of the energy industry over time has created a dual economy in the country, as real exchange rate appreciation (the so-called Dutch disease) and an unfavorable investment climate stifled the non-energy sectors. However, more and more domestic SMEs now supply goods and services to multinational energy companies and are also expanding across regional markets. In Guyana, gold—the country's main export until oil discoveries in the mid-2010s—is largely mined by SMEs using dated technology, while other SMEs operate in agriculture (rice and sugarcane), fishing, livestock farming, and services (wholesale and retail trade, transportation and storage, and construction). In Suriname, large foreign companies and a government-owned company dominate the key export sectors—oil and mining (bauxite and gold)—with limited spillovers into the rest of the economy. Local SMEs mainly operate in services (wholesale and retail trade, and construction), agriculture (rice and bananas), and small-scale gold mining. Overall, the private sector in the larger CARI-12 countries is expected to rebound from the COVID-19 crisis thanks to the recovery in international demand for commodities and the attendant rise in prices. However, the rebound will remain vulnerable to changes in global economic conditions, which are currently affected by rising inflation, disruption to supply chains, and the war in Ukraine.

**Lack of competition and the dominance of a few firms in certain industries (such as the financial sector, energy, and other infrastructure areas) also appear to have slowed the development of the private sector.** The implementation of the Revised Treaty of Chaguaramas provides for the harmonization of competition policy across the Caribbean Single Market and Economy, but progress has been slow.<sup>7</sup> Since the Competition Commission was established in 2017, a model competition bill has been approved. However, only a few member states (Guyana, Suriname, and Trinidad and Tobago) have started to put in place the necessary legislation and institutional arrangements. The OECS countries have agreed in principle to a supranational agency for competition matters, but none of the member states have enacted the legislation to date.

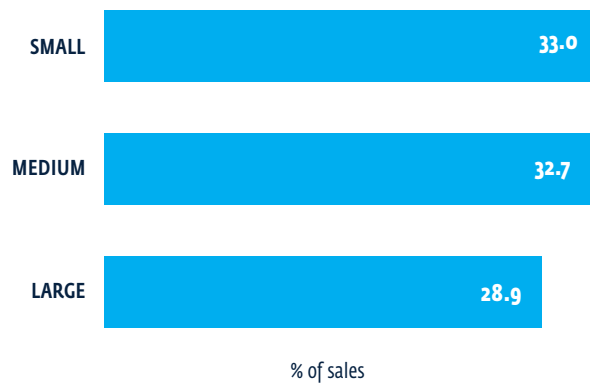
**Informality is relatively high in the CARI-12, but is slightly below the Latin American and Caribbean average of 40 percent of GDP.<sup>8</sup>** The informal economy is estimated to amount to 20–30 percent of GDP in the Bahamas, 30–40 percent of GDP in Barbados, 29–33 percent of GDP in Guyana, 35–45 percent of GDP in Suriname, and 26–33 percent of GDP in Trinidad and Tobago.<sup>9</sup> The informal employment rate is estimated to be 57.6 percent in the larger Caribbean countries, compared to 58 percent in Central America and Mexico and 50.8 percent in South America.<sup>10</sup> Most informal firms in the region have fewer than three employees and operate in commerce, transportation, or hospitality. In Guyana and Suriname, informality is also high in small-scale gold mining.

**The COVID-19 pandemic seriously hampered the performance of private firms.**

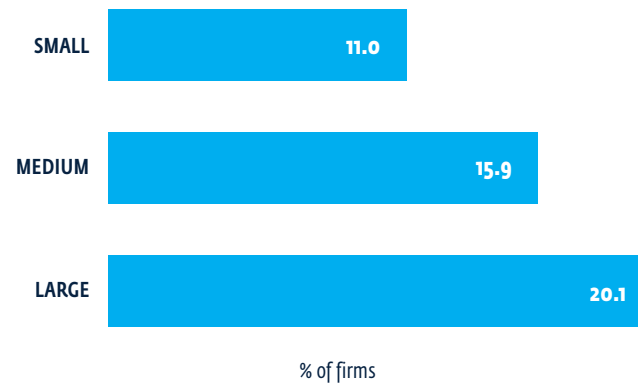
Companies were confronted with prolonged lockdowns and a sharp drop in commodity prices, while tourism came to a standstill. According to the IFPG survey, nearly 90 percent of formal firms in the region suffered from the pandemic, with sales decreasing by almost 30 percent on average (figure 2.3a). As a result, 34 percent of firms had to reduce their workforce. Shifting to online sales was the primary strategy for firms to cope with the pandemic (figure 2.3b), but smaller, domestically owned, and female-owned firms had more difficulty in implementing this approach.<sup>11</sup>

**FIGURE 2.3 EFFECT OF COVID-19 PANDEMIC ON RETAIL SALES, CARI-12**

**a. Drop in sales for CARI-12 firms due to the COVID-19 pandemic**



**b. Adoption of online sales by firm size in response to the pandemic**



Source: IFPG (Innovation, Firm Performance and Gender) Survey 2021.

Note: The IFPG survey was conducted between March and November 2020, and the survey asked firms how the constraints they faced had changed from the previous year.

## Notes

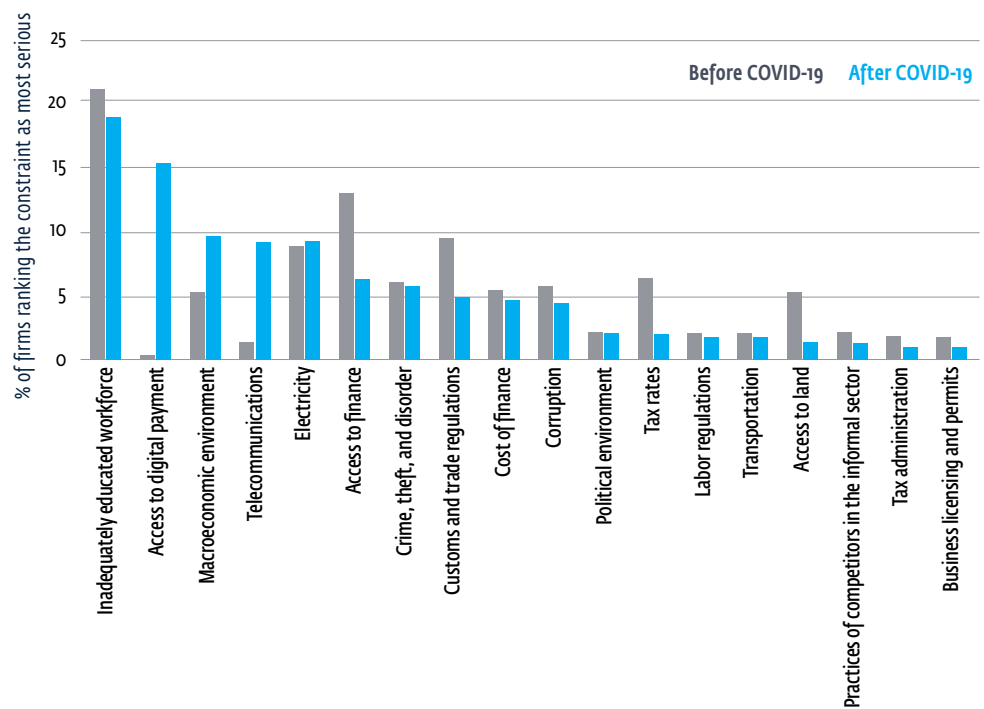
1. The Innovation, Firm Performance, and Gender (IFPG) survey is a firm-level survey covering 13 Caribbean countries that is statistically representative and internationally comparable. The datasets record firm-level behavior related to sales, finance, foreign trade and competition, innovation behavior, crime prevention, business environment and government relations, labor and skills, gender, and performance, among other factors. The data available were collected between March 2020 and November 2020.
2. Caribbean Development Bank, "MSME Sector's Big Impact on Economies," February 4, 2021, <https://www.caribank.org/newsroom/news-and-events/msme-sectors-big-impact-economies>
3. The percentage of female-owned firms is 18.5 percent, 17.9 percent, and 12.9 percent for small, medium, and large firms, respectively.
4. Per the IFPG, 31.0 percent of small firms, 39.3 percent of medium firms, and 45.3 percent of large firms in the CARI-12 made direct exports. The Latin American and Caribbean average is less than 10 percent, according to World Bank Enterprise Surveys conducted in the 2010s.
5. The CARICOM Secretariat has been working for several years on a draft CARICOM Investment Code and a template that countries could use for investment agreements, which include investment treaty best practices. Multiple consultations have been conducted, but the code has not yet been finalized with the contribution and approval of all member states. The code would help establish a common regime for the protection, promotion, and facilitation of investments in the region. Key features of the draft investment code include standards of treatment of investors, measures to promote and facilitate investment flows (investment approval process, cross-borders registration, and investment promotion policy), and investor-state dispute mechanisms. Along with the draft investment code, proposals for a harmonized regime of investment incentives have been prepared for further consultation with member states.
6. US State Department, 2018 Investment Climate Statements: Trinidad and Tobago.
7. The Revised Treaty of Chaguaramas established inter alia the CARICOM Single Market and Economy. See "Chapter Eight: Competition Policy and Consumer Protection," in the Revised Treaty of Chaguaramas (July 2017).
8. OECD (Organisation for Economic Co-operation and Development), "Informal Economy in Latin America and the Caribbean: Implications for Competition Policy" (Background note, Latin America and Caribbean Competition Forum, Session I, updated 2019).
9. Amos Peters, "Estimating the Size of the Informal Economy in Caribbean States" (Technical Note IDB-TN-1248, Inter-American Development Bank, Washington, DC, 2017), <https://publications.iadb.org/en/estimating-size-informal-economy-caribbean-states>.
10. Juan Chacaltana, "Formalization Policies in Latin America" (International Labour Organization Presentation in the Seminar "New and Old Forms of Informality," United Nations Economic Commission for Latin America and the Caribbean, Santiago, Chile, 2019).
11. On average, online sales were adopted by 14.5 percent of male-owned firms, 7.6 percent of female-owned firms, 23.4 percent of foreign-owned firms, and 11.3 percent of domestically owned firms.



### **3. CROSS-CUTTING ISSUES AFFECTING PRIVATE SECTOR GROWTH**

This section outlines the key constraints affecting the private sector in the CARI-12 that stand in the way of increased trade, investment, and growth. The constraints emerged from discussions with private and public sector stakeholders and were corroborated by a recent IFPG survey (figure 3.1). These constraints are (a) gaps in trade policy, trade facilitation, and connectivity; (b) skills mismatches; (c) limited access to finance for SMEs; and (d) vulnerability to climate change. The IFPG survey and private sector consultations also highlighted the high cost of electricity and gaps in digital infrastructure. Governments in the region have been focusing on many of these areas to enhance competitiveness, but much remains to be done, including regionally. Greater regional integration and collaboration will be crucial in helping overcome many of these constraints and in achieving more viable and effective solutions in the medium to long term.

**FIGURE 3.1 MAIN CONSTRAINTS TO FIRM OPERATIONS IN THE CARI-12, BEFORE AND AFTER THE COVID-19 PANDEMIC**



Source: IFPG survey.

Note: The IFPG survey was conducted between March and November 2020, and the survey asked firms how the constraints they faced had changed from the previous year.



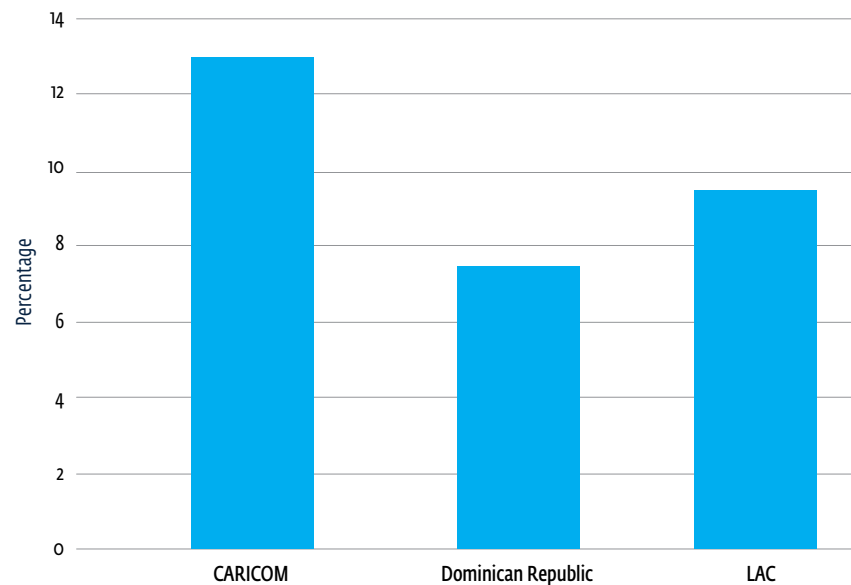
### 3.1 GAPS IN TRADE POLICY, TRADE FACILITATION, AND CONNECTIVITY

Shortcomings in customs and trade regulations were among the main constraints identified by firms before the COVID-19 pandemic, although they became less relevant as a result of the crisis. The drop in merchandise trade during 2020, and the lessened need for local firms to engage in trade, might explain this shift. Nevertheless, the CARI-12 countries face significant trade frictions, which add substantially to the cost of trade and hamper their competitiveness. First, tariff and nontariff measures raise costs for exports and imports. Second, insufficient trade facilitation affects the duration, cost, and predictability of export and import operations. Third, the geographic features of the CARI-12 countries and the small size of their domestic markets lead to poor connectivity, low traffic volumes, and high transport costs.

#### High and discretionary tariff and nontariff measures

The CARI-12 adopted the common external tariff (CET) of CARICOM, which is high by international standards. CARICOM was established as a customs union in 1973. Its CET on imports from outside CARICOM amounts to 13 percent on average. By way of comparison, the average most-favored-nation (MFN) import tariff in a regional peer such as the Dominican Republic is 7.6 percent, while the average for Latin America and the Caribbean is 9.5 percent (figure 3.2).

**FIGURE 3.2 AVERAGE MFN TARIFF IN CARICOM AND REGIONAL PEERS, 2019**



Source: World Integrated Trade Solution/World Trade Organization.

Note: CARICOM = the Caribbean Community; LAC = Latin America and the Caribbean; MFN = most favored nation.

Tariffs are high for most goods and in key sectors, affecting the competitiveness of exporters. Rates are highest on food and vegetable products, with averages in excess of 20 percent (table 3.1).

**TABLE 3.1 AVERAGE MFN TARIFF IN CARICOM BY SECTOR OF TARIFF SCHEDULE, 2019**

	AVERAGE TARIFF	STAND. DEV.	# OF HS6 LINES	PERCENTAGE WITH T>10%
<b>01–05, Animal products</b>	16.9	15.2	269	72.9
<b>06–15, Vegetable products</b>	21.1	16.4	356	54.2
<b>16–24, Food products</b>	22.6	16.6	205	86.3
<b>27, Fuels</b>	8.0	6.8	34	38.2
<b>28–38, Chemicals</b>	10.0	7.7	632	11.2
<b>39–40, Plastic, rubber</b>	11.4	6.7	204	31.4
<b>44–49, Wood, paper products</b>	12.2	8.5	234	39.3
<b>50–63, Textiles and articles</b>	16.2	7.0	654	44.0
<b>68–71, Stone, ceramic, glass</b>	14.2	9.7	173	43.4
<b>84–85, Machinery, electrical equipment</b>	8.2	8.1	752	17.2
<b>86–89, Vehicles and transport</b>	14.5	9.3	124	35.5

Source: World Integrated Trade Solution/World Trade Organization.

Note: CARICOM = the Caribbean Community; HS = Harmonized System [code]; MFN = most favored nation..

**High tariffs on food and other consumer goods raise the operating costs of the tourism industry as well.** Duty-free concessions on key inputs to this sector exist in certain countries, but they largely benefit hotels and do not extend to many tourism-related services. Tariffs on capital and intermediate goods are also high compared to the Dominican Republic and the Latin American and Caribbean average, affecting the competitiveness of downstream exporters (table 3.2).

**TABLE 3.2 AVERAGE MFN TARIFFS BY BROAD ECONOMIC CATEGORIES**

	CARIBBEAN COUNTRIES			DOMINICAN REPUBLIC			LATIN AMERICA AND THE CARIBBEAN		
	Mean	Stand. Dev.	# of HS6 lines	Mean	Stand. Dev.	# of HS6 lines	Mean	Stand. Dev.	# of HS6 lines
Capital goods	6.58	6.83	601	2.31	5.41	679	5.87	4.70	641
Consumer goods	19.27	10.82	1,241	19.10	9.60	1,350	15.05	7.84	1,333
Intermediates	8.74	7.45	2,523	3.71	7.50	3,280	7.44	5.24	3,130
Other	19.58	13.92	269	16.55	6.12	77	10.55	9.16	375

Source: World Integrated Trade Solution/World Trade Organization.

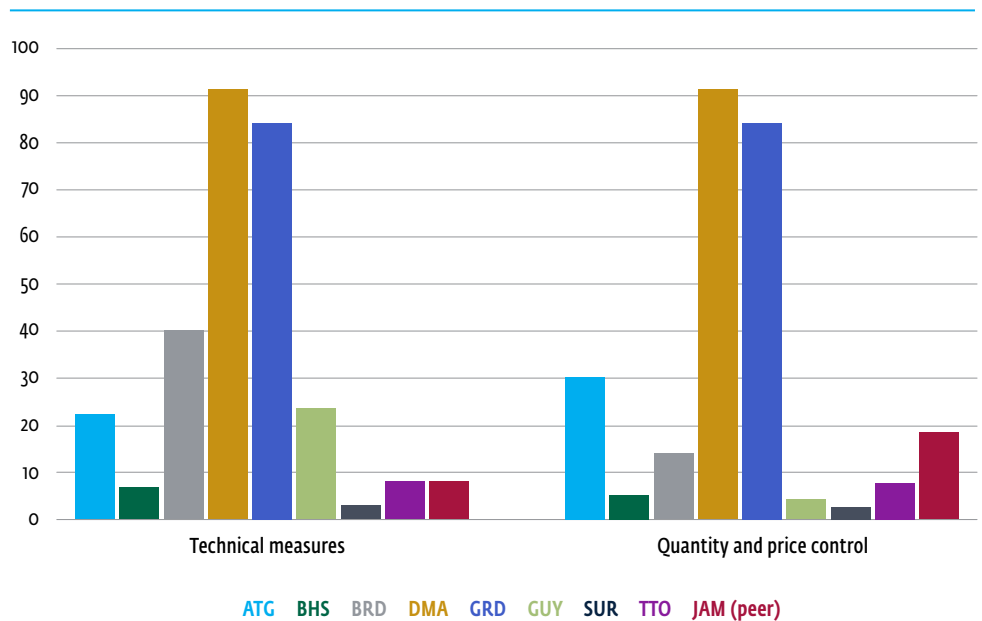
Note: HS = Harmonized System [code]; MFN = most favored nation.

**CARICOM members can deviate from the CET on several products, thereby reducing the predictability and transparency of the system.** CARICOM's Council for Trade and Economic Development (COTED) identified 96 tariff lines for which duties lower than the CET can be applied, covering several consumer and intermediate goods. For a further 224 tariff lines, national import duties can be applied on top of the CET. This second group includes intermediate and capital goods such as machinery, electric equipment, and transport vehicles. In addition, member states can and often do waive tariff collection, by means of permits that are specific to volume, period, and importer. A long-overdue revision of the CET should decrease tariff protection and bring the average tariff closer to the level of regional peers, thus discouraging deviations from the common tariff regime and enhancing its predictability and transparency.

**Heterogeneous nontariff measures (NTMs) are widely applied across the region, with negative effects on trade costs and transparency.** NTMs include technical standards for importation, quantity and price controls, and discretionary import licenses. Across the CARI-12, chemicals are the products affected by the highest number of NTMs. NTMs are particularly onerous in Dominica and Grenada (figure 3.3) where, according to United Nations Conference on Trade and Development (UNCTAD) data, nearly 90 percent of product categories are subject to technical standards for importation. These two countries also apply the most stringent quantity and price controls in the region. Common guidelines for NTM adoption are vague and their enforcement is weak,

contributing to the heterogeneity of NTMs in the CARI-12. In 2011, the Caribbean Agricultural Health and Food Safety Agency (CAHFSA) was created to coordinate an effective regional regime of sanitary and phytosanitary (SPS) rules, and to execute SPS activities on behalf of member states. However, its capacities remain limited, and technical requirements are still mostly defined at the national level. In addition, many products are subject to nonautomatic licensing in most CARI-12 countries, especially in Barbados and Trinidad and Tobago.

**FIGURE 3.3 % OF PRODUCTS SUBJECT TO NTMS, BY TYPE OF NTM AND COUNTRY, 2015**



Source: WBG estimates based on TRAINS-NTM data.

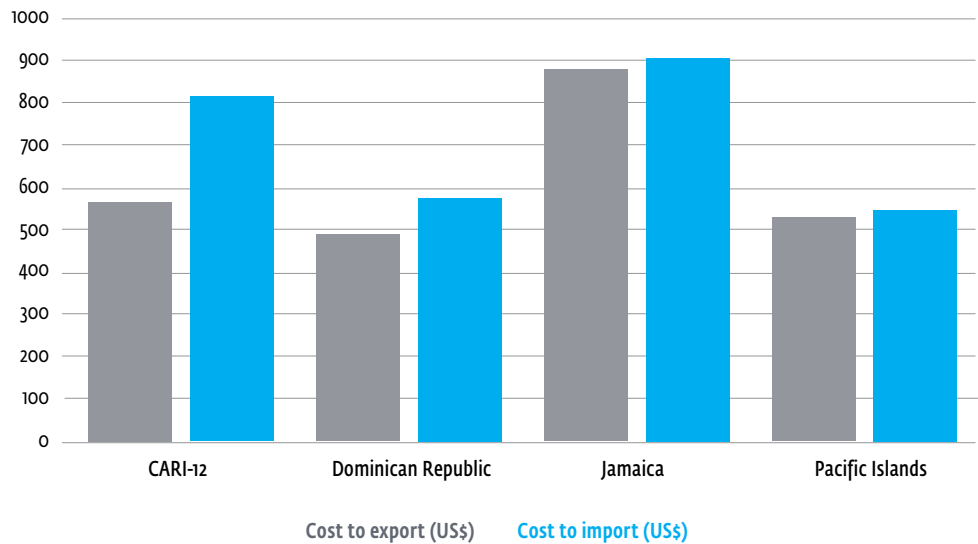
Note: 2016 data for Antigua and Barbuda. ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; DMA = Dominica; GRD = Grenada; GUY = Guyana; SUR = Suriname; TTO = Trinidad and Tobago; JAM = Jamaica. NTM = nontariff measure.

On the export side, the CARI-12 struggle to satisfy NTMs imposed by demanding foreign markets because of information gaps and an inadequate quality, standards, testing, and metrology (QSTM) system. Local knowledge of technical requirements for exports outside CARICOM is often lacking, with instances of shipments rejected abroad over SPS deficiencies or other technical shortcomings—for example, the presence of prohibited preservatives or inadequate labeling. Satisfying technical requirements in high-income markets also depends on a solid QSTM infrastructure, which is inadequate in most CARI-12 countries. Notably, a benchmarking of national quality control infrastructure in the Americas rated most CARI-12 countries as having low maturity, with only Barbados and Trinidad and Tobago rated at medium maturity.<sup>1</sup>

### Cumbersome and costly trade facilitation processes

Across the region, cumbersome trade processes, insufficient automation, and inadequate coordination among border agencies hinder the flow of cargo between countries. According to data from the 2020 Doing Business report,<sup>2</sup> export and import times in the CARI-12 are shortest in Saint Lucia (46 hours and 41 hours, respectively) and longest in Guyana (272 hours and 240 hours, respectively). In Belize, the time to export (134 hours) is more than twice the time to import (66 hours). This places a major burden on exporting firms (particularly those of small size), reduces the chances of survival for new exporters, and deters market entry. The inefficiencies also translate to high costs for trading (figure 3.4).

**FIGURE 3.4 COST OF TRADE IN THE CARI-12, THE DOMINICAN REPUBLIC, JAMAICA, AND SMALL PACIFIC ISLAND STATES**



Source: World Bank, Doing Business 2020 (Washington, DC: World Bank, 2020).

Note: CARI-12 states are those Caribbean states addressed in this RPSD. The Pacific island states include the Federated States of Micronesia, Fiji, the Marshall Islands, Palau, Papua New Guinea, Samoa, the Solomon Islands, Timor-Leste, Tonga, and Vanuatu.

**Trade automation is lagging, and the development of National Single Window (NSW)<sup>3</sup> and Maritime Single Window (MSW)<sup>4</sup> systems has not made the expected amount of progress.** Despite the implementation of the UNCTAD Automated System for Customs Data (ASYCUDA),<sup>5</sup> certain customs processes require traders to submit documentation twice—on paper and online.<sup>6</sup> In addition, there is little harmonization or interoperability of data at the national or regional level. Overall, coordination among public authorities—border agencies, port authorities, and maritime authorities—is poor. Even where private terminal operators have adopted simplified processes, most public sector stakeholders have failed to adjust. Other than in the Bahamas and Trinidad and Tobago, the development of NSWs in the region is mostly at the discussion stage. The successful implementation of NSWs will require improving the regulatory framework, putting adequate infrastructure in place, simplifying business processes, and harmonizing procedures and data-exchange protocols among border agencies. In addition, MSWs could enable the digitalization of maritime logistics operations, but to date only Antigua and Barbuda has prioritized establishing one.<sup>7</sup> A recent initiative by the OECS Commission under the CARICOM Implementation Agency for Crime and Security (IMPACS) program<sup>8</sup> is moving in the right direction: it aims to enable data exchange between port and maritime authorities while involving relevant border-control agencies in vessel release and clearance.

**Weak coordination among border agencies and inadequate automation lead to over-inspection and delays.** Despite various technical assistance projects aiming to improve risk management at the country level, private parties still face numerous separate inspections by customs and other border agencies. Only a handful of countries, such as the Bahamas and Grenada, have adopted national authorized economic operator (AEO) programs that allow pre-approved parties to operate in a simplified customs environment.<sup>9</sup>

**Trade information portals (TIPs)<sup>10</sup> could increase transparency and offer valuable market intelligence.** Trading and logistics companies across the CARI-12 tend to have little awareness of the spectrum of laws, regulations, and procedures applicable to them. The Bahamas is the sole country in the region to have developed a TIP, while Trinidad and Tobago uses its Single Window platform<sup>11</sup> as a quasi-TIP. Most countries make use of government websites (usually those of their customs agencies) to share information with the private sector. Although this is a step in the right direction, it remains far from the best practice that a TIP represents. In addition, national enquiry points<sup>12</sup>—an effective source of information about import, export, or transit requirements for the private sector—are either partially or entirely nonfunctional in all CARI-12 countries.

**National Trade Facilitation Committees (NTFCs) could play an important role, but most of them are still nascent.** Most CARI-12 countries have established NTFCs to coordinate trade facilitation reforms, while Antigua and Barbuda and Belize are in the process of establishing them (table 3.3). The capabilities of most NTFCs, however, remain limited. Some of them do not meet regularly and they have not developed plans to address key trade challenges. In addition, regional coordination of trade facilitation is weak. For that reason, CARICOM announced plans to implement a regional committee on trade facilitation, tasked with overseeing regional coordination and ensuring consistency between national and regional trade facilitation priorities.

**TABLE 3.3 NATIONAL TRADE FACILITATION COMMITTEES (NTFCs) IN THE CARI-12**

COUNTRY				SCOPE OF WORK	
	Official set up	Meets regularly	Work plan	TFA-specific (1-5) <sup>a</sup>	Regional integration
Antigua and Barbuda	Ongoing	No	Yes	4	Greatly considered
Barbados	Yes	Yes	Yes	4	Greatly considered
Belize	Ongoing	Yes	Yes	3	Considered to some extent
Dominica	Yes	No	No	3	Greatly considered
Grenada	Yes	Yes	Yes	5	Greatly considered
Guyana	Yes	Yes	No	3	Greatly considered
St. Kitts and Nevis	Yes	Yes	Yes	4	Greatly considered
St. Vincent and the Grenadines	Yes	Yes	Yes	3	Greatly considered
Suriname	Yes	No	No	3	Not considered
Trinidad and Tobago	Yes	Yes	No	4	Greatly considered

Source: UNCTAD Database for National Trade Facilitation Committees.

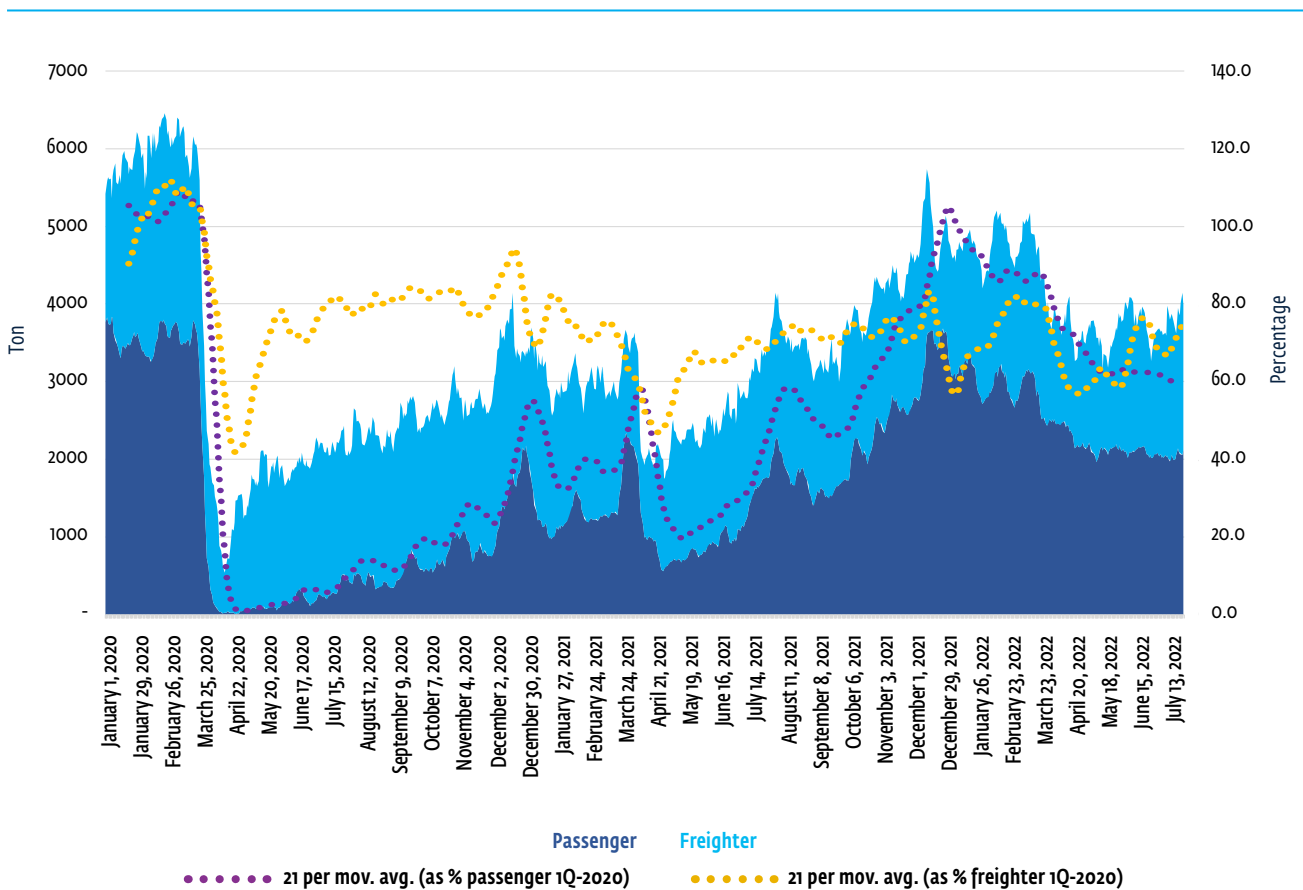
- a. 1 = scope of work limited to World Trade Organization Trade Facilitation Agreement (TFA);  
5 = scope much broader than WTO TFA.

### High connectivity and logistics costs

**Intraregional trade and direct logistics flows in the CARI-12 are limited, contributing to high costs for local traders.** Goods flow southbound from North America (especially the United States) into the CARI-12, but most cargo ships and airplanes make the return trip empty, increasing logistics costs. Trade within the CARI-12 is usually modest in volume and does not allow for economies of scale. Because most local traders ship relatively small amounts of cargo (a “less-than-container load,” or a shipment too small to fill a container), they must usually send their goods to Miami, where they are consolidated with other shipments and forwarded to their final destinations, including in the Caribbean itself. For urgent, high-priority shipments within the region, traders may choose quicker but more expensive modalities, such as using a container for a single pallet of goods (instead of the customary 10 pallets) or chartering a plane.

The pandemic has greatly reduced air cargo capacity in the Caribbean. Air freight has become an eligible option for most shipments—beyond those of urgent or high-value goods—as rising expenses and delays have eroded the competitiveness of sea freight. However, air freight logistics largely depend on passenger flights, which were heavily disrupted by the pandemic. Figure 3.5 shows the daily cargo uplift capacity on domestic, regional, and extra-regional flights from selected airports in the region since January 2020. As of July 2022, uplift capacity was about 70 percent of the level recorded in the first quarter of 2020. After March 2020, uplift capacity on passenger aircraft was no more than 20 percent of pre-pandemic levels and only recovered decisively after May 2021. Meanwhile, freighter uplift capacity remained steady, albeit at 80 percent of pre-pandemic levels.

**FIGURE 3.5 DAILY AIR CARGO UPLIFT CAPACITY (TONS) AT SELECTED AIRPORTS IN THE CARIBBEAN, 2020–22**



Source: WBG calculations based on data from Flight Radar 24.



**Seaports and airports in the CARI-12 are not equipped to handle cargo efficiently.** Most ports are poorly managed by the relevant government entities<sup>13</sup> and lack the resources to modernize. In addition, port tariffs and labor regulations have not evolved to meet the requirements of handling containerized cargo.<sup>14</sup> In airports, inefficient handling and warehousing facilities complicate air cargo shipments. Overall, cargo infrastructure has received less attention than tourism facilities in the CARI-12 countries. Several jurisdictions lack temperature-controlled storage space for perishable goods<sup>15</sup> and prioritize the needs of cruise ships over those of cargo ships. Finally, most ports and airports in the region are yet to adopt collaborative information technology (IT) systems, such as port and air cargo community systems.

**The combination of the COVID-19 pandemic, the subsequent disruption to maritime and air transport, and the collapse of tourism has aggravated existing challenges to logistics and connectivity in the region.** As previously noted, the sudden halt to tourism removed most air cargo transport capacity. In addition, the consolidation and reorganization of regional shipping lines, especially those connecting with the United States and Canada, have affected most of the CARI-12. Three out of four regional shipping lines pulled out of the Caribbean in October 2021, reducing transport capacity both between the United States and the Caribbean and within the Caribbean itself. Indeed, shipping capacity in CARI-12 ports was 32 percent lower in the fourth quarter of 2021 than it was during the same period in 2019,<sup>16</sup> contributing to shortages and price increases that affect both consumers and manufacturers. To ensure supply in the face of such bottlenecks, manufacturers and retailers have had a tendency to overstock, thus placing added pressure on warehousing capacity and companies' cashflows.

## Recommendations

Enhancing the competitiveness of the private sector in the CARI-12 will require major steps to reduce trade costs and information gaps and to improve access to logistics (table 3.4).

- **First, it is important to simplify the CET and NTM regimes, with the goal of reducing trade costs and enhancing the predictability and transparency of tariffs.** Reform of the CET regime, including the exceptions that allow for above-CET duties, will help lower tariffs on imports. Reducing the cost of importing capital and intermediate goods will have a beneficial effect on the production costs and competitiveness of the private sector. In addition, the region's complex web of NTMs should be streamlined and trade regulations harmonized in line with the World Trade Organization (WTO) Trade Facilitation Agreement.
- **Second, trade facilitation can be greatly improved through streamlined and digitized processes and more comprehensive public access to information.** Greater engagement is required from governments to help redesign inefficient or complex processes and encourage the development of trade automation tools—such as NSWs, MSWs, and TIPs—through a mix of policy, legal, regulatory, and technical reforms. Such steps could be accelerated by establishing and strengthening NTFCs to complement the CARICOM Regional Trade Facilitation Committee.
- **Third, the enabling environment for connectivity and access to logistics requires strengthening, including through enhanced participation from the private sector.** Digital logistics platforms organized through public-private partnerships (PPPs) could better serve the needs of operators focusing on less-than-container loads and air freight, help match supply and demand, optimize routes, reduce empty returns, and enable real-time information exchange for air and sea shipments. PPPs could also be explored to develop cold storage, or alternative facilities, in support of agricultural and seafood trade. Finally, PPPs may contribute to developing resilient transport and logistics infrastructure, with the goal of mitigating the region's vulnerability to natural disasters and climate change.

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Simplify CET and NTMs</b>			
<b>Reform Common External Tariff</b>	Enact CET reforms to lower tariffs on imports, reducing the cost of importing capital and intermediate goods and enhancing competitiveness.	Short term	National/
<b>Streamline and harmonize NTMs</b>	Enlist CARICOM to help assess NTMs in each country and develop an agenda to streamline and harmonize trade regulations at the regional level.	Short to medium term	National/ regional
	Focus on improving the private sector's awareness of technical requirements for exports to key markets.	Short term	National/ regional
<b>Enhance trade facilitation</b>			
<b>Activate NTFCs and the RTFC</b>	Establish and activate NTFCs and the RTFC.	Short term	National/ regional
<b>Digitize and simplify trade procedures while strengthening border management</b>	Create regulatory frameworks to develop TIPs and MSWs. Strengthen trade digitization via NSWs, MSWs and TIPs.	Short term	National
	Strengthen national risk management frameworks and develop a regulatory/ institutional framework for national and (sub) regional AEO programs.	Short to medium term	National/ subregional
<b>Improve connectivity and access to logistics</b>			
<b>Increase the supply of air and maritime cargo space</b>	Allow freight trucks onboard ferries.	Short term	National/ subregional
	Develop an efficient ferry network in the Eastern Caribbean.	Short to medium term	National/ subregional
	Promote the Multilateral Air Services Agreement to allow private aircraft owners to supply additional air cargo space.	Short term	National/ subregional
<b>Promote digital logistics platforms</b>	Promote digital logistics platforms through PPPs, focusing on less-than-container loads and air freight.	Medium term	National/ regional
<b>Cooperate with private sector</b>	Explore PPPs to support regional trade of agricultural goods and seafood and to develop resilient transport and logistics infrastructure.	Medium term	National/ regional

Note: AEO = authorized economic operator; CARICOM = Caribbean Community; CET = common external tariff; MSW = Maritime Single Window; NSW = National Single Window; NTM = nontariff measure; NTFC = National Trade Facilitation Committee; PPP = public-private partnership; RTFC = Regional Trade Facilitation Committee; TIP = trade information portal.

### 3.2 SKILLS GAPS STIFLE FIRM PRODUCTIVITY

**Gaps in skills and training stifle the growth and productivity of firms in the CARI-12.**

In the 2020 IFPG survey, firms in 10 CARI-12 countries cited an inadequately trained workforce as being among their top three challenges. It was the most serious concern identified by firms in Barbados, Grenada, Guyana, St. Kitts and Nevis, and Trinidad and Tobago and was the second-most serious in Dominica, Saint Lucia, and Suriname and the third-most serious in Antigua and Barbuda and the Bahamas.

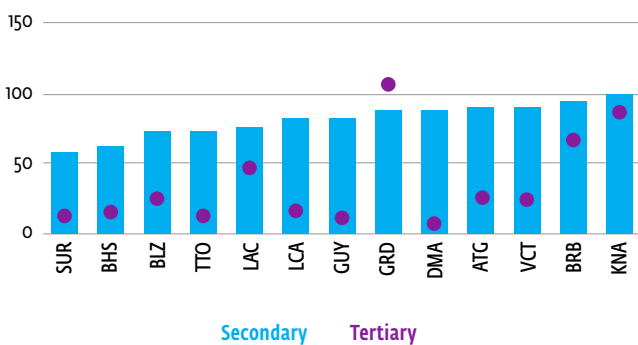
The skills gap in the CARI-12 countries is partly due to the changing features of their economies and high emigration rates among their most skilled citizens. The ongoing structural transformation of the CARI-12 economies, with a decline of agriculture and expansion of services, has created a disconnect between labor market needs and the labor force's knowledge and skills. Moreover, the COVID-19 pandemic created a need for more services to be delivered digitally, highlighting the scarcity of local digital capabilities. The loss of skills from migration is also high in the region. Outmigration rates exceed 5 percent of the population in most countries and are as high as 30 percent in Antigua and Barbuda.<sup>17</sup> While emigration offers an important source of financing in the form of remittances, it can affect a country's supply of productive labor when it is concentrated among its most educated citizens. More than 20 percent of those who migrate to Organisation for Economic Co-operation and Development (OECD) countries from the CARI-12 region (excluding the Bahamas) have completed tertiary education, with a peak of 73 percent among migrants from Guyana.<sup>18</sup>

There is increasing demand in the region for workers with both technical and soft skills—such as critical thinking, problem solving, and socio-emotional skills—but meeting it is a challenge. In the Bahamas, a 2019 skills gap survey<sup>19</sup> highlighted shortcomings in literacy, numeracy, problem solving, teamwork, and other soft skills as among the gaps noted by employers when hiring potential employees. In Barbados, an assessment of the skills required for green jobs identified a major shortage of individuals qualified for the design and installation of solar photovoltaic facilities and energy auditors.<sup>20</sup> In Belize, employers voiced an interest in recruiting more workers with digital-transformation, critical-thinking, and socio-emotional skills.<sup>21</sup> In Saint Lucia, employers listed communication skills (91 percent), strong work ethic (71 percent), and adaptability (61.5 percent)<sup>22</sup> as the most valued features they look for in employees, but deemed most employees to be lacking in soft skills (such as customer service), technical skills, and basic skills (such as literacy). Finally, in St. Vincent and the Grenadines, a 2021 survey identified customer service, communication, and information and communication technology (ICT) literacy as the most sought-after skills, but also as the areas where the workforce is most in need of training.<sup>23</sup>

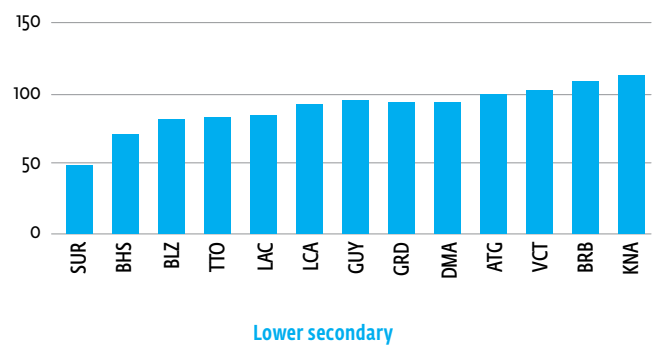
Many workers are underskilled relative to the requirements of their jobs. As of 2021, no more than 6 percent of the working-age population in Guyana had completed tertiary education, and only 5 percent had a formal technical and vocational education and training qualification.<sup>24</sup> In Saint Lucia, the share of workers underqualified for their jobs rose from 50 percent in 2017 to 57 percent in 2019.<sup>25</sup> Moreover, 27 percent of job openings in St. Vincent and the Grenadines in 2020 required tertiary education, but more than 50 percent of them remained unfilled due to a lack of applicants with the requisite skills.<sup>26</sup>

Enhancing the competitiveness of the workforce requires improving secondary education and expanding access to tertiary education. The CARI-12 countries have achieved almost universal primary education, with enrollment rates generally higher than the Latin American and Caribbean average of 91 percent—except in Suriname (86 percent) and the Bahamas (74 percent). Similarly, secondary education enrollment rates and lower-secondary education completion rates are higher than the Latin American and Caribbean averages of 76 percent and 82 percent, respectively, with few exceptions (figures 3.6 and 3.7).<sup>27</sup> Major gaps in the quality of secondary education, however, constrain the advancement to tertiary education. Indeed, tertiary school enrollment rates are below the Latin American and Caribbean average of 46 percent (except in Barbados, Grenada, and St. Kitts and Nevis), limiting opportunities for people in the CARI-12 to find quality employment.

**FIGURE 3.6 SECONDARY AND TERTIARY SCHOOL ENROLLMENT RATES IN THE CARI-12 (2020 OR LATEST AVAILABLE)**



**FIGURE 3.7 LOWER-SECONDARY SCHOOL COMPLETION RATES (2020 OR LATEST AVAILABLE)**

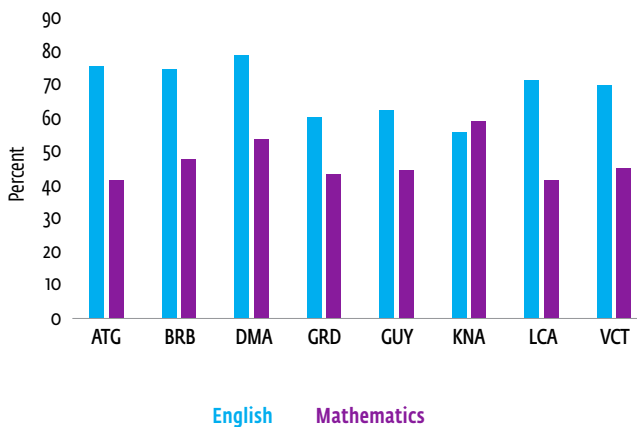


Source: World Bank.

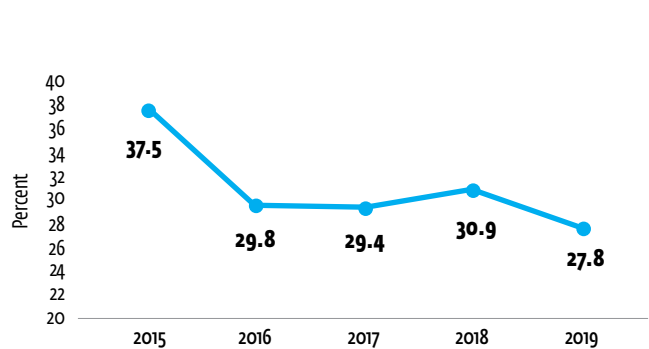
Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LAC = Latin America and the Caribbean; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**Lack of academic readiness, high costs, and limited financial support are the key barriers to accessing tertiary education.** In many CARI-12 countries, a sizable percentage of students complete secondary schooling without obtaining the formal qualifications to progress to higher education. Results from the Caribbean Secondary Education Certificate (CSEC) exams show that in most OECS countries and in Guyana between 2015 and 2019, only a minority of the students who took the exams obtained passing grades in five or more subjects (figures 3.8 and 3.9).<sup>28</sup> Passing grades in at least 5 CSEC exams (grades I–III) are an entry requirement for four-year programs at universities, community colleges, teachers’ colleges, and other tertiary institutions in the region. In 2019, however, only 27.8 percent of OECS students who took the exams obtained passing grades in English, mathematics, and three more subjects. In addition, post-secondary education—which is usually paid for by students and their families—is expensive, with typical tuition fees for an associate degree amounting to around EC\$2,000 (approximately US\$740) per year.<sup>29</sup> In this context, measures to boost access to higher education are warranted, to the extent that they help students meet academic requirements and are in tune with the needs of the labor market.

**FIGURE 3.8 STUDENTS ACHIEVING GRADES I–III IN ENGLISH AND MATHEMATICS (2015–19)**



**FIGURE 3.9 STUDENTS ACHIEVING 5 CSEC SUBJECT PASSES IN THE OECS (2015–19)**



Source: Educational Statistical Digest, 2018–19; national websites.

Source: Educational Statistical Digest, 2018–19.

Note: English represents English A. Grade I is outstanding, grade II is good, and grade III is fairly good. Data for Barbados refers to 2018 and 2019; for Grenada, it refers to 2015–17. ATG = Antigua and Barbuda; BRB = Barbados; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines.

Few graduates have trained in science, technology, engineering, and mathematics (STEM) fields, where there are current and future employment opportunities. Less than 5 percent of tertiary graduates trained in STEM-related fields in Antigua and Barbuda, and less than 20 percent were trained in Belize, Grenada, and Guyana compared with 23 percent of graduates in OECD countries (table 3.5).<sup>30</sup> Digital skills are often cited among those in high demand in the region, but educational institutions are falling short in providing them. An IDB report<sup>31</sup> highlights that in Belize, the few post-secondary programs available in ICT fields do not adequately prepare students for medium-skilled jobs, especially in software development, web development, and database networking.<sup>32</sup> Many CARI-12 countries offer technical courses and vocational certificates known as Caribbean Vocational Qualification (CVQ), but these mostly prepare for blue-collar jobs, with few of them offering more advanced technical training.

**TABLE 3.5 GRADUATIONS FROM TERTIARY EDUCATION BY FIELD OF STUDY (LATEST AVAILABLE DATA)**

	ANTIGUA AND BARBUDA	BELIZE	GRENADA	GUYANA
<b>Science, Technology, Engineering, and Mathematics</b>	4.7	18.0	15.7	14.2
Engineering, Manufacturing, and Construction	0.0	1.3	4.5	8.3
Information and Communication Technologies	4.7	4.2	3.4	4.3
Natural Sciences, Mathematics, and Statistics	0.0	12.5	7.7	1.6
<b>Agriculture, Forestry, Fisheries, and Veterinary</b>	0.0	2.0	7.4	1.8
<b>Arts and Humanities</b>	1.2	2.9	4.3	1.6
<b>Business, Administration, and Law</b>	9.4	39.0	7.2	15.0
<b>Education</b>	78.0	16.2	1.0	45.7
<b>Health and Welfare</b>	6.7	4.3	48.6	13.7
<b>Unspecified Fields</b>	0.0	4.1	5.7	0.0
<b>Services</b>	0.0	10.4	5.1	0.0
<b>Social Sciences, Journalism, and Information</b>	0.0	3.1	4.9	8.1

Source: World Bank Education Statistics.

Note: The data for Antigua and Barbuda and Guyana are for 2012, and the data for Belize and Grenada are for 2015 and 2018, respectively.

The COVID-19 pandemic disrupted the educational sector in the CARI-12 and potentially widened the skills gap. Virtually all students at primary, secondary, and tertiary levels experienced full or partial school closures during the pandemic,<sup>33</sup> most notably in Barbados, Belize, Grenada, Guyana, Suriname, and Trinidad and Tobago.<sup>34</sup> Governments enacted special measures (table 3.6) to support education during the pandemic, but the shift to online learning proved challenging, particularly because of the time needed to offer access to equipment and broadband services to many students. Even then, access was especially limited for low-income students, those with disabilities, or those from rural communities. Furthermore, the sudden move to digital learning left little time for students to adjust and for teachers to acquire the necessary skills and equipment, thus degrading the quality of teaching. Students focusing on technical subjects, which require access to laboratories and technical equipment, were especially affected by the virtual learning format. At the same time, job losses squeezed the incomes of low-income households, pushing some students to seek complementary incomes and drop out of school—thus widening the skills gap by reducing the building of skills.

**TABLE 3.6 EDUCATIONAL MEASURES IMPLEMENTED IN THE CARI-12 DURING THE COVID-19 PANDEMIC**

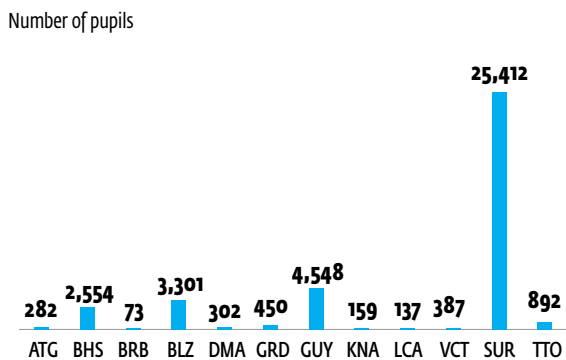
COUNTRY	SUSPENSION OF CLASSES	PROVISION OF TOOLS FOR DISTANCE LEARNING	DISTRIBUTION OF ICT EQUIPMENT TO LEARNERS	PROVISION OF BROADBAND SERVICES TO LEARNERS
Antigua and Barbuda	✓			
The Bahamas	✓	✓	✓	
Barbados	✓	✓	✓	✓
Belize	✓	✓	✓	
Dominica	✓	✓		
Grenada	✓	✓		
Guyana	✓	✓	✓	✓
St. Kitts and Nevis	✓			
Saint Lucia	✓	✓		
St. Vincent and the Grenadines	✓	✓		
Suriname	✓	✓		
Trinidad and Tobago	✓	✓	✓	✓

Source: A. Bleeker and R. Crowder, "Selected Online Learning Experiences in the Caribbean during COVID-19" (Studies and Perspectives series—ECLAC Subregional Headquarters for the Caribbean, 105 [LC/TS.2021/212-LC/CAR/TS.2021/7], Santiago, Chile, Economic Commission for Latin America and the Caribbean, 2022).

Note: Tools for distance learning include online platforms, TV, radio, and other distance-learning equipment. ICT = information and communication technology.

Technical and Vocational Education and Training (TVET) are offered by both public and private agencies across the region through formal and informal programs. The formal track, which falls within the standard education system, includes technical and professional programs leading to certificates, diplomas, or degrees, primarily offered to students at the upper-secondary level. Informal training, on the other hand, remains outside the standard education system. In this context, the number of students enrolled in vocational training at the secondary level is small—except in the Bahamas, Belize, Guyana, and Suriname (figure 3.10). Outside of Dominica, less than half of vocational students are female (figure 3.11).

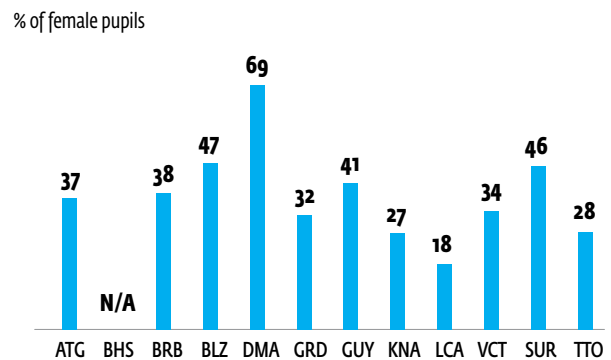
**FIGURE 3.10 SECONDARY EDUCATION, VOCATIONAL PUPILS (2018 OR LATEST AVAILABLE DATA)**



Source: World Bank, WDI.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**FIGURE 3.11 SECONDARY EDUCATION VOCATIONAL PUPILS, % OF FEMALES (2018 OR LATEST AVAILABLE DATA)**



Source: World Bank, WDI.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

Governments in the CARI-12 have sponsored active labor market programs (ALMPs) to mitigate skills mismatches. ALMPs offer training on a wide range of subjects (such as entrepreneurship skills) to both job seekers and employees, as well as some public employment services. For example, the IMANI Youth Employment Program in Grenada provides skills training and other services for youth, and the Youth Training and Employment Partnership Program (YTEPP) and Multi-sector Skills Training Program (MuST) in Trinidad and Tobago offer training to the unemployed. Public spending on ALMPs is considerable in certain CARI-12 countries, but little information is available about their effectiveness. Studies of the ALMPs of Saint Lucia and Grenada as of 2015 found that they were allocated 1.61 percent and 1.97 percent of GDP, respectively, which is higher than in other Latin American and Caribbean countries.<sup>35</sup> However, the region still lacks well-established labor intermediation services to link job seekers with employment opportunities in the private sector.



**Enhancing the quality and relevancy of secondary and tertiary education and expanding access to the latter are critical to developing a productive labor force and a competitive private sector.** Improving the quality of secondary education hinges on attracting and retaining well-trained teachers, offering competitive salaries to the teachers with the highest academic qualifications, establishing feedback mechanisms on teaching quality and having performance-based retention procedures, and providing special incentives to teachers in underserved communities. Improved secondary education will better prepare students for the transition to higher education or the job market. At the same time, greater inclusion by boosting access to tertiary education, especially for students from disadvantaged backgrounds, will require more needs- and results-based financial assistance. Sound planning will be critical to avoid an influx of students who are not academically ready or to avoid the introduction of fiscally unsustainable measures. In addition, CARI-12 governments would benefit from systematically gathering and analyzing labor market data (potentially on a regional basis), pooling their limited national resources, and forging stronger partnerships with the private sector to inform and shape the educational offering. Finally, robust quality-assurance mechanisms are key to monitoring and improving the services of educational institutions and their relevance to the labor market.

**TABLE 3.7 RECOMMENDATIONS FOR ADDRESSING THE SKILLS GAP IN THE CARI-12**

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Expand access to tertiary education</b>	Design and implement needs- and results-based tuition assistance programs for students from disadvantaged backgrounds.	Short to medium term	National/ subregional
<b>Improve the quality of secondary education</b>	Enhance teacher training and encourage periodic professional training.	Short to medium term	National/ subregional
	Increase the number of well-trained teachers in schools by offering better incentives.	Medium term	National/ subregional
	Complement teaching of academic subjects with soft-skills training.	Short to medium term	National/ subregional
<b>Mitigate mismatches between skills in demand on the labor market and those developed through the educational system</b>	Develop partnerships with the private sector to attune the educational and training systems to market needs.	Short to medium term	National/ subregional
	Systematically collect information on existing jobs, skills required by employers, and job search methods.	Short to medium term	National/ subregional
	Set up quality-assurance mechanisms to monitor and enhance the quality and relevance of services provided by educational institutions.	Medium term	National/ subregional
	Incentivize employers to offer continuous on-the-job training to employees.	Medium term	National/ subregional

### 3.3 LIMITED ACCESS TO FINANCE FOR SMES

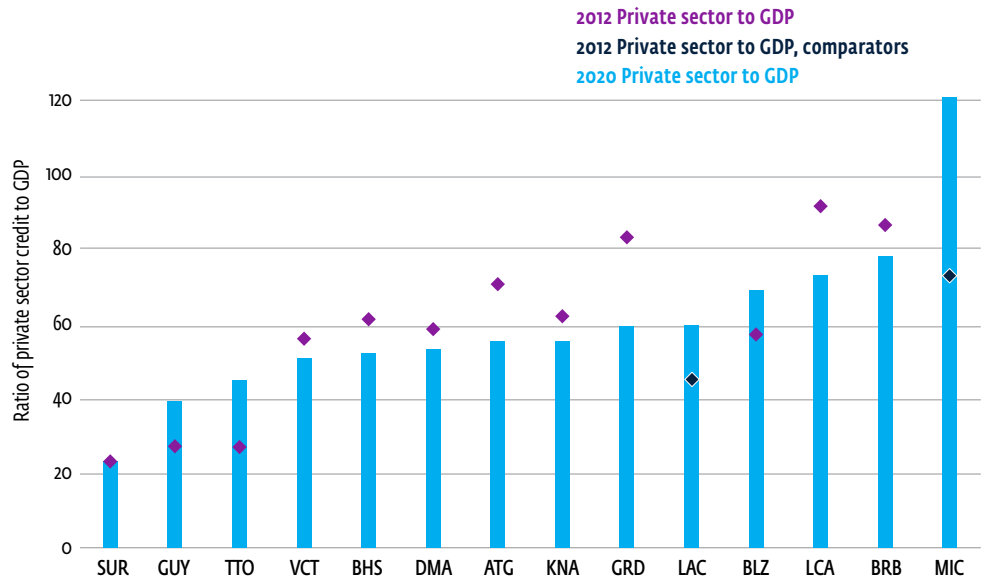
The financial sector in the CARI-12 countries is generally large relative to the size of the local economies, but the growth of credit to the private sector—especially to SMEs—has been lackluster. Even if disregarding offshore banks, all CARI-12 countries have financial sectors that are larger, in terms of assets, than their respective GDPs (table 3.8). The ratio is especially striking in Barbados (where total financial sector assets are equal to 294 percent of GDP), Trinidad and Tobago (277 percent of GDP), and the Eastern Caribbean Currency Union (ECCU)<sup>36</sup> (215 percent of GDP). Excluding Guyana, Suriname, and Trinidad and Tobago, the stock of private sector credit is comparable to the Latin American and Caribbean average (figure 3.12). The banking sector, which dominates the regional financial system, has become more concentrated and less competitive as foreign banks have exited smaller countries (especially in the ECCU) and reduced operations in several others.<sup>37</sup> This has contributed to historically low growth in new lending to the private sector in recent years, which was further exacerbated by the pandemic. In addition, private sector lending typically focuses on corporates, consumers, and mortgages, while SMEs face major gaps in access. Since the onset of the pandemic, banks have provided roughly 20 to 30 loans to micro, small, and medium enterprises (MSMEs) in each ECCU country, and mostly to pre-existing borrowers. Moreover, despite a recent push from the pandemic, digital financial services (DFS)—including digital payments—have not taken off in earnest, with cash and checks still widely used. With very limited exceptions, nontraditional DFS players in the region have so far been unable to offer credit.

**TABLE 3.8 STRUCTURE OF CARI-12 FINANCIAL SECTORS, 2020 (TOTAL ASSETS AS % OF GDP)**

	THE BAHAMAS	BARBADOS	BELIZE	ECCU	GUYANA	SURINAME	TRINIDAD AND TOBAGO
<b>Banks</b>	135.15	149.36	111.80	161.92	55.23	93.84	106.11
<b>Credit Unions</b>	4.29	31.87	33.44	25.29	0.81	0.16	13.36
<b>Insurance</b>	19.68	42.50	10.54	7.98	9.26	14.81	32.08
<b>Other</b>	18.50	70.07	11.01	19.90	41.15	16.72	125.56
<b>Total</b>	<b>177.62</b>	<b>293.81</b>	<b>166.79</b>	<b>215.09</b>	<b>106.45</b>	<b>127.09</b>	<b>277.11</b>

Source: CERT. Data from Caribbean National Central banks (May 2021); International Monetary Fund, ECCU Country Reports, (March 2021); Bank of Guyana Annual Report (2020).

Note: The credit union data for Guyana and Trinidad and Tobago and the insurance data for Suriname correspond to 2019. ECCU = Eastern Caribbean Currency Union.

**FIGURE 3.12 RATIO OF PRIVATE SECTOR CREDIT TO GDP IN THE CARI-12 AND SELECT COMPARATORS, 2012 VERSUS 2020**

Source: World Bank Group, World Development Indicators.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LAC = Latin America and the Caribbean; LCA = Saint Lucia; MIC = middle-income countries; VCT = St. Vincent and the Grenadines; SUR = Suriname; TTO = Trinidad and Tobago.

**Multiple factors have contributed to muted growth in credit to MSMEs and the wider private sector despite significant bank liquidity.** Demand for loans by enterprises has been weak, against a background of stagnant economic performance and high levels of informality. On the other hand, acute loan delinquency in many regional economies since the Global Financial Crisis has made banks more risk averse (table 3.9). The growth in credit to MSMEs has also been stifled by underdeveloped credit infrastructure. Recently, certain banks—such as Republic Bank Grenada—have launched dedicated SME units, with promising early results. State-owned banks, which have a strong presence across the region (especially in Trinidad and Tobago and the ECCU) have also been targeting underserved MSMEs. However, state-owned banks often carry larger nonperforming loans (NPLs) on their balance sheets and can crowd out private sector lending through subsidized interest rates—as has been the case with recent programs to mitigate the impact of the pandemic. Credit unions, some of which have large memberships, will usually cover informal and small entrepreneurs, albeit mostly through consumer loans.

**TABLE 3.9 BANKING SECTOR FINANCIAL SOUNDNESS INDICATORS IN THE CARI-12 (Q4 2019 VERSUS Q4 2021)**

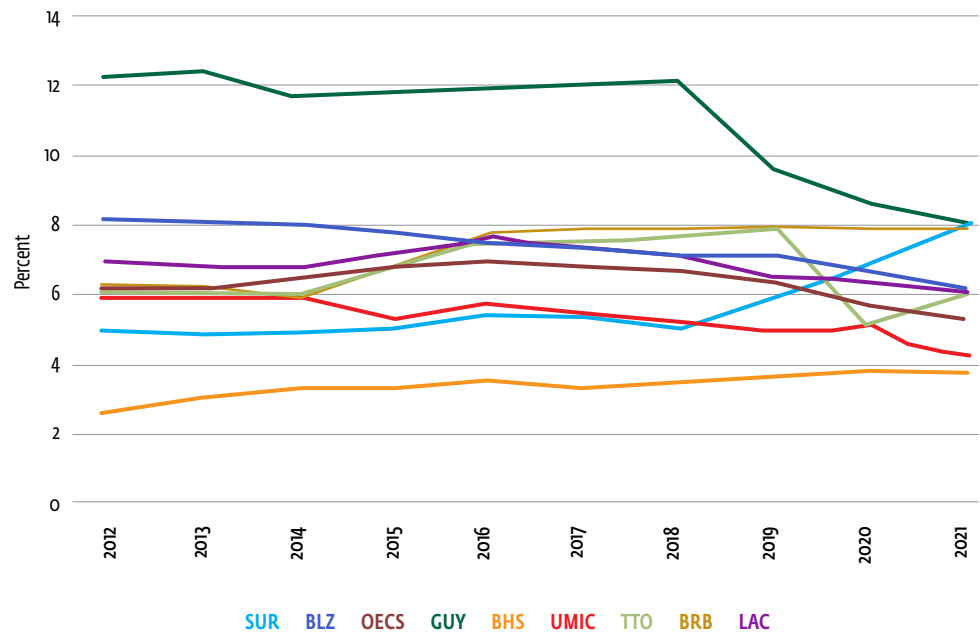
	THE BAHAMAS		BELIZE		GUYANA		TRINIDAD AND TOBAGO	
	Q4 2019	Q4 2021	Q4 2019	Q4 2021	Q4 2019	Q4 2021	Q4 2019	Q4 2021
<b>Antigua and Barbuda</b>	5.3	6.7	39.4	32.8	1.44	0.65	46.5	40.5
<b>The Bahamas</b>	8.0	9.6	30.4	26.4	2.40	2.00	30.1	–
<b>Barbados</b>	6.1	7.2	14.0	16.7	1.76	1.21	26.1	31.4
<b>Belize</b>	5.1	7.7	22.8	19.8	2.00	0.40	24.3	28.1
<b>Dominica</b>	12.2	14.4	–	–	2.94	0.20	46.7	46.1
<b>Grenada</b>	2.2	2.9	11.9	15.8	1.38	0.30	43.7	44.9
<b>Guyana</b>	11.1	7.8	28.0	27.9	2.63	1.96	31.7	33.8
<b>St. Kitts and Nevis</b>	24.0	20.9	20.2	22.1	0.85	1.88	55.9	51.6
<b>Saint Lucia</b>	8.2	13.8	25.6	16.8	1.57	0.98	40.7	39.3
<b>St. Vincent and the Grenadines</b>	6.4	7.8	22.2	22.4	1.11	0.42	41.7	47.2
<b>Suriname</b>	10.6	12.8	11.4	14.5	1.00	1.80	46.8	58.8
<b>Trinidad and Tobago</b>	3.1	3.4	23.6	19.3	3.60	2.20	21.5	19.4

Source: Bank of Guayana; Central Bank of The Bahamas; Central Bank of Barbados; Central Bank of Belize; Central Bank of Trinidad and Tobago, and Centrale Bank van Suriname; and Eastern Caribbean Central Bank.

Note: Data for the Bahamas as of Q3 2021. – = not available. NPLs = nonperforming loans; Q4 = fourth quarter; RWA = risk-weighted assets.

Elevated NPLs, abundant liquidity, and high market concentration all contribute to widening interest-rate spreads and raise the cost of lending to the private sector. With the exception of the Bahamas, interest-rate spreads in the CARI-12 are above the average of upper-middle-income countries (figure 3.13).

**FIGURE 3.13 INTEREST-RATE SPREADS IN THE CARI-12**



Source: World Bank, World Development Indicators.

Note: Interest-rate spread is measured as loan minus deposit rate in the banking system. BHS = the Bahamas; BRB = Barbados; BLZ = Belize; GUY = Guyana; LAC = Latin America and Caribbean; OECS = Organization of Eastern Caribbean States; SUR = Suriname; TTO = Trinidad and Tobago; UMIC = upper middle-income countries.

The banking sectors in many of the CARI-12—including the Bahamas, Barbados, Belize, Guyana, and the ECCU countries—were already burdened by NPLs before the COVID-19 crisis. Many bad loans remained on the balance sheets of CARI-12 banks for over a decade after the Global Financial Crisis of 2007–08 because of shortcomings in the local regulatory and oversight framework. In the ECCU, a regional initiative to establish a “bad bank,” allowing banks to offload NPLs, has finally taken off and could bring major benefits.<sup>38</sup> However, asset quality is likely to deteriorate in the wake of central banks’ initiatives (such as credit moratoria) to mitigate the economic impact of the pandemic.<sup>39</sup> Indicators of financial sector soundness as of the end of 2021 present a mixed picture, with two countries showing a drop in NPLs (table 3.9), but they likely fail to reflect the unwinding of emergency measures from the pandemic, which are expected to leave many banks on a weaker standing. The latter development could further increase the risk aversion of banks and constrain the supply of credit to the private sector despite ample liquidity in the system.

**Regional banks are highly exposed to sovereigns, which does not seem to be crowding out lending to the private sector but could be another source of vulnerability along with climate change.** As of 2020, lending to the government at large (both to the central government and to SOEs) averaged 15.9 percent of GDP across the CARI-12 and exceeded 20 percent of GDP in four countries. It was highest in Dominica (29.2 percent) and the Bahamas (26.9 percent), and lowest in Grenada (4.0 percent) and Guyana (7.0 percent). High levels of liquidity in the banking system suggest that public sector financing is not crowding out lending to the private sector. However, the strong link to the public sector may channel adverse feedback loops into the banking system, at a time when pandemic relief efforts have drained the resources of many governments in the region. In addition, the banking system is vulnerable to climate change, and regulatory and supervisory tools have not been upgraded to help the banking system manage this risk.

**Credit unions play a significant role in fostering financial inclusion, including for small entrepreneurs, but also pose risks to their large memberships and to the financial stability of certain countries.** Credit unions, which typically cater to underserved markets, hold sizeable assets in Belize (20.8 percent of GDP), Barbados (12.0 percent of GDP), and the ECCU (11.6 percent of GDP).<sup>40</sup> Their memberships are large,<sup>41</sup> with 9 out of the 43 credit unions operating in the ECCU deemed systemically important by the Eastern Caribbean Central Bank (ECCB). However, credit unions are not typically subject to the same oversight and prudential regulation as banks, resulting in less transparency and weaker credit-underwriting practices.<sup>42</sup> Credit unions are also rarely covered by financial safety nets and often have no explicit access to deposit insurance. In 2008, the bankruptcy of Hindu Credit Union in Trinidad and Tobago had significant socioeconomic repercussions, exposing the risks stemming from poor oversight of these institutions.

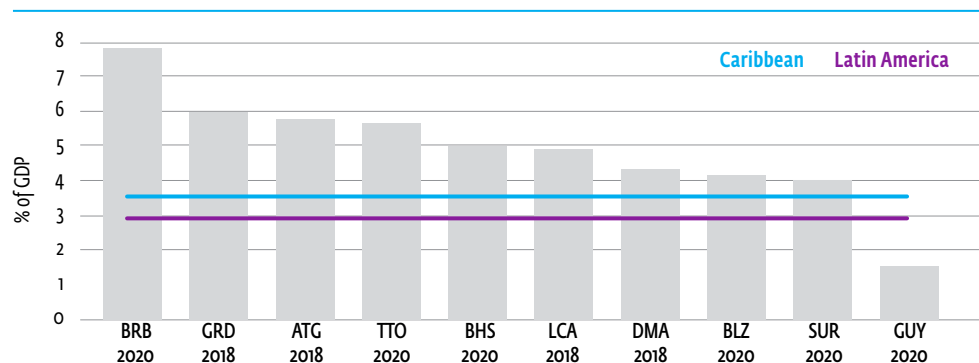
**Foundational credit infrastructure is often missing or underdeveloped.** Few countries in the CARI-12 (the Bahamas, Barbados, Guyana, and Trinidad and Tobago) have credit information bureaus and none have an electronic registry of moveable collateral. The ECCU members are in the process of developing a regional credit bureau, and all but Saint Lucia have enacted the relevant national laws. Saint Lucia recently initiated procurement to develop a registry of moveable collateral and has submitted the supporting bill to the Parliament of Saint Lucia. Collateral requirements are very high because of the absence of a liquid secondary market for fixed assets, constraints to the auction prices for repossessed properties,<sup>43</sup> and prudential regulation mandating coverage requirements for certain loans. In this context, the newly established Eastern Caribbean Partial Credit Guarantee Corporation is poised to help entrepreneurs gain access to credit by absorbing part of the risk that financial institutions take on when lending to MSMEs.

**Alternative sources of financing for MSMEs, including from DFS providers, are limited.** Asset-based lending (such as factoring) is underdeveloped and remains unrecognized in several jurisdictions, such as in the ECCU. Digital-payment and fintech infrastructure is still nascent across the region. Regional e-commerce platforms could offer significant financing and market opportunities for MSMEs, but high fees, lack of interoperability across payment systems, and regulatory gaps have hindered their development. Overall, there is little equity and risk capital available to early- and growth-stage MSMEs, which remain mostly self-financed. Long-term funding is also constrained by shallow capital markets and an institutional-investor environment still dominated by banks.

**Insurance penetration in the CARI-12 exceeds the Latin American and Caribbean average (apart from Guyana), but coverage varies widely, with ample room for expansion and the development of new products.** Antigua and Barbuda, Barbados, Grenada, and Trinidad and Tobago have the deepest insurance markets, with premiums written equivalent to between 5.0 and 8.0 percent of GDP (versus 1.5 percent of GDP in Guyana, on the opposite end) (figure 3.14).<sup>44</sup> Insurance penetration values in certain countries are skewed by reinsurance and captive companies, which mostly service overseas business while the domestic private sector remains inadequately covered. Local insurance coverage largely relates to non-life instruments, especially motor insurance. However, property insurance and other instruments tailored to protect against disasters are not widely adopted, although they would be beneficial to many businesses and households in a region exposed to natural calamities.

**The insurance sector could contribute to wider private sector development and help manage the susceptibility to climate change, but constraints on both the supply and demand sides limit its evolution.** On the supply side, the local insurance industry remains underdeveloped and does not fully conform to international best practices, inhibiting its own ability to offer adequate coverage to the private sector. In certain countries, international firms meet over 90 percent of domestic insurance demand, and the international reinsurance sector plays a key role in mitigating domestic insolvency risks. Additional factors complicate the operational framework, including the significant losses suffered by insurance companies as a result of adverse weather events, the lack of potential for economies of scale, and the complex and inconsistent regulatory environments across multiple Caribbean jurisdictions. As a result, two regional conglomerates—Sagicor and Guardian Life—dominate the CARI-12 markets, with smaller players holding a negligible market share. On the demand side, despite the repeated occurrence of natural disasters, limited awareness and understanding of insurance instruments hinder their uptake. Basic notions, such as deductibles and underinsurance, are often unfamiliar to the public, and individuals and small firms can be quick to cancel coverage if they have not experienced a need to make a claim. As a result, there is a tendency toward self-insurance or to only taking out mandatory insurance, such as when it is a condition for a loan or mortgage.

**FIGURE 3.14 INSURANCE PENETRATION (PREMIUMS AS % OF GDP)**



Source: Finstats, National Central Banks, and Mapfre for the Latin America and the Caribbean average (2019); Insurance Information Institute for Eastern Caribbean Currency Union countries (2018).

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago.

Several Eastern Caribbean countries, as well as Belize, have suffered diminished access to international banking networks because of concerns about the risk of money laundering and terrorist financing.<sup>45</sup> All the CARI-12 countries have at some point been flagged by the Financial Action Task Force<sup>46</sup> or the European Commission<sup>47</sup> over shortcomings in their anti-money laundering and combating the financing of terrorism (AML/CTF) efforts. In addition to causing a reputational backlash, a country's inclusion on international AML/CTF watch lists increases its risk of losing correspondent banking relationships, with negative implications on its ease of doing business, cross-border trade, and financial transaction flows.

The large offshore financial centers that developed in certain CARI-12 countries—especially the Bahamas and Barbados—have contracted sharply over the past decade as a consequence of global efforts to enhance tax transparency. According to IMF estimates, the Bahamas hosted the fourth-largest offshore financial center worldwide, with assets under management amounting to roughly 14 times the country's GDP.<sup>48</sup> The offshore financial sector was estimated to account for up to 9.0 percent of GDP in the Bahamas and for 7.8 percent of GDP in Barbados.<sup>49</sup> Offshore banks and trusts generated approximately 1,000 jobs in the Bahamas, with an average wage of about twice the amount paid by domestic banks, and about 675 jobs in Barbados.<sup>50</sup> However, international efforts to strengthen tax transparency and a reduction in global risk appetite since the Global Financial Crisis have caused local offshore markets to shrink significantly. In the Bahamas, assets held by international banks decreased from a peak of about US\$500 billion in 2011 to US\$175 billion in 2016, with 12 international banks ceasing operations in the country over the same period.<sup>51</sup> Barbados was especially affected by changes to Canadian tax laws, which diminished the attractiveness of Barbadian offshore financial services to Canadian customers.

## Recommendations

Expanding the supply of credit to the private sector, and to SMEs in particular, will require a multipronged approach (table 3.10). NPLs have likely increased in certain CARI-12 countries as a result of the COVID-19 pandemic; addressing them adequately, including through the potential involvement of asset management companies, will strengthen local banks and enhance their ability to lend to the private sector. Regulatory tools and capacities need to be updated to better understand and manage the risks of climate change and to foster a greener banking system. Credit infrastructure is still nascent across the region; the development of the regional credit information bureau for the Eastern Caribbean will help close information gaps on potential borrowers and facilitate lending. Credit-guarantee schemes could incentivize banks to lend downstream—it will be important to monitor the progress of the Eastern Caribbean Partial Credit Guarantee Corporation, which is in its early days of operations. A review of the role, governance, and influence of state-owned banks could offer fresh ideas on how to enhance their effectiveness, incorporating lessons from the reform of other development banks in Latin America and the Caribbean. A better enabling environment for DFS could improve the quality and lower the cost of payment systems and foster the emergence of new lending platforms for SMEs and support greater inclusion. (See section 4.2.) The insurance sector can also develop further, with a focus on insuring private firms against climate risk. Finally, a stronger AML/CTF compliance regime would improve essential connections with the international banking system.



**TABLE 3.10 RECOMMENDATIONS FOR EXPANDING ACCESS TO FINANCE**

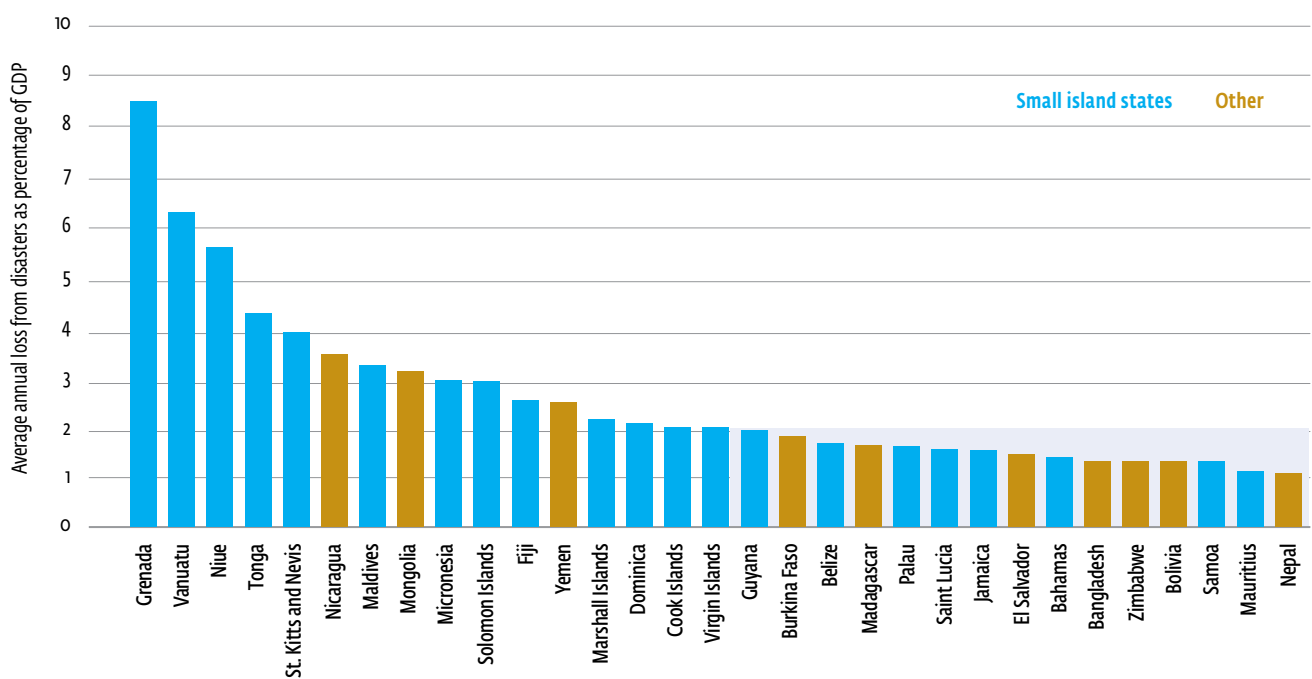
RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Facilitate access to finance for SMEs</b>			
<b>Foster credit products for SMEs</b>	Reduce nonperforming loans through enhanced prudential regulation and the potential involvement of asset management companies.	Short and medium term	National/subregional
	Enhance regulatory and supervisory tools to better manage the risks of climate change and to foster a greener banking system.	Short to medium term	National/subregional
	Activate the Eastern Caribbean Credit Bureau.	Short to medium term	National/subregional
	Explore the development of credit-guarantee schemes.	Medium term	National/subregional
	Improve the enabling environment for DFS (See section 4.2.)	Short to medium term	National/subregional
	Review the role, business model, and impact of state-owned development banks.	Medium term	National/subregional
<b>Expand insurance coverage</b>	Encourage the development of the insurance sector, focusing on the supply of and demand for non-life insurance and expanding protection from climate change risks.	Medium term	National/subregional
<b>Enhance AML/CTF compliance</b>	Bolster AML/CTF compliance to strengthen connections with the international banking system.	Short to medium term	National/subregional

Note: AML/CTF = anti-money-laundering/combating the financing of terrorism; DFS = digital financial service; NPL = nonperforming loan.

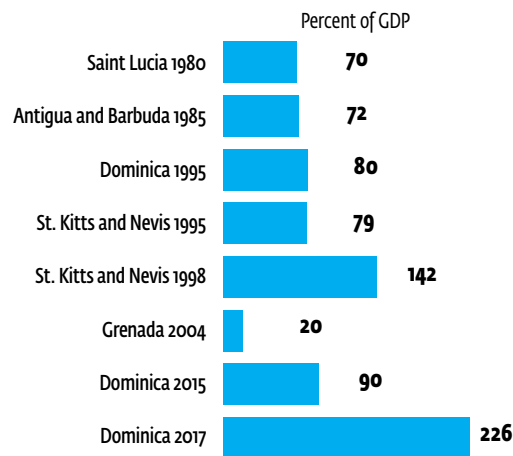
### 3.4 HIGH VULNERABILITY TO CLIMATE CHANGE

Geographic location, size, and topography make the CARI-12 countries particularly vulnerable to climate change and natural disasters, including cyclones, extreme winds, storms, earthquakes, tsunamis, and volcanic eruptions. Because of the concentration of population and economic infrastructure in coastal areas, extreme weather events tend to cause much larger economic losses in the CARI-12 than in other countries. Considering the effects of extreme weather events between 2000 and 2019, eight Caribbean countries (including six of the CARI-12) were among the 20 most affected globally as measured by percentage of GDP lost, and five were among that group as measured by fatalities per capita.<sup>52</sup> The annual economic losses inflicted by natural disasters on small island developing states, including those in the Caribbean, range between 1 and 10 percent of GDP on average and are particularly high in some of the smallest countries (figure 3.15).<sup>53</sup> Economic losses in St. Kitts and Nevis due to storms in 1998 and in Dominica due to Hurricane Maria in 2017 were as high as 142 and 226 percent of GDP, respectively (figure 3.16).

**FIGURE 3.15 AVERAGE ANNUAL LOSS FROM NATURAL DISASTERS, % OF GDP**



Source: World Bank Group, "Financial Protection against Natural Disasters: An Operational Framework for Disaster Risk Financing and Insurance" (World Bank, Washington, DC, 2014), <https://openknowledge.worldbank.org/handle/10986/21725>.

**FIGURE 3.16 DAMAGES AND LOSSES FROM SELECT DISASTERS IN THE OECS (1980–2017)**

Source: David Eckstein, Vera Künzel, and Laura Schäfer, "Global Climate Risk Index: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000–2019" (Germanwatch, Bonn, Germany, 2021). Based on data from MunichRE NatCatSERVICE. [https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021\\_1.pdf](https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_1.pdf).

The growth potential of the CARI-12 countries is tied to economic sectors that are highly sensitive to climate change, such as tourism, mining and quarrying, fishing, and agriculture. They have capitalized on their rich natural assets to advance economic development but face a long-term sustainability risk of not protecting those assets adequately. As more extreme temperatures, rises in sea levels, and changes in rainfall patterns exacerbate the risk of natural disaster,<sup>54</sup> the social and economic development of the Caribbean region will be further threatened.

Agriculture has been severely affected by extreme events such as hurricanes, droughts, flooding, and landslides. Agriculture in the CARI-12 is rainfed and highly sensitive to variance in temperature and precipitation, which makes it especially vulnerable to climate change. Although agriculture is not a major economic contributor in many of the CARI-12, it accounts for 11.5, 16.9, and 8.2 percent of GDP in Belize, Guyana, and Suriname, respectively. Land clearing for agriculture is a major driver of deforestation in the region, and land use change and forestry are top sources of greenhouse gas emissions (accounting for more than 70 percent of total greenhouse gas emissions in Belize, Guyana, and Suriname). Agriculture also consumes nearly three-quarters of the region's freshwater resources, which may be degraded by climate change.<sup>55</sup> The prevalence of pests and disease is likely to increase with extreme weather conditions, affecting yields for most crops and potentially jeopardizing food security and poverty reduction.

Vulnerability to climate change has a statistically and economically significant impact on international tourism revenues across the Caribbean. Tourism infrastructure is exposed to hurricanes and coastal inundation throughout the Caribbean region, with about 95 percent of accommodation facilities and 80 percent of tourist attractions located at sea level along the coast. Furthermore, the degradation of natural assets such as coral reefs and the reduction in available surface water due to changes in rainfall and longer droughts are significant threats to tourism. On average, a 10 percentage-point increase in climate change vulnerability is associated with a 9 percentage-point decline in tourism earnings per visitor, or a reduction of 10 percentage points in tourism revenues as a share of GDP.<sup>56</sup>

## Policy responses

**Although the CARI-12's contribution to global emissions is minimal, adapting to climate change is critical for them.** The Caribbean countries that signed the 2015 Paris Agreement are preparing their second Nationally Determined Contributions (NDCs), seeking more ambitious targets. All of the CARI-12's NDCs either include mitigation and adaptation components or mention them as relevant strategies.<sup>57</sup> The most frequently cited sectors for mitigation action are energy (by 12 countries), transport (by nine countries), and forestry (by eight countries). Moreover, nine of the CARI-12 have set adaptation objectives and at least one—Antigua and Barbuda—has specified them narrowly. The most frequently cited sectors for adaptation are agriculture, fisheries, and livestock (cited by ten countries), housing and infrastructure (by seven countries), water (by seven countries), and health (by six countries).

**The CARI-12 countries should focus on building resilient infrastructure and landscapes, which includes investing in climate-resilient energy and transport infrastructure and supporting the adoption of climate-smart practices and technologies.** Innovations and falling costs of renewable energy and storage technologies can facilitate the CARI-12's transition to clean energy, if accompanied by developments in digital technologies—for example, fast, reliable, and affordable internet connectivity is a requirement for the deployment of smart-grid solutions. CARI-12 countries can enhance the resilience of their food systems through crop diversification, the adoption of drought-resistant crop varieties, and revegetation. Effective water-efficiency measures include precision irrigation, soil management and landscaping to increase water retention and reduce runoff, and rainfall capture and storage. Protecting and restoring coastal ecosystems is critical, and nature-based solutions offer potential opportunities; mangroves and coral reefs protect coastlines against floods and storm surges, greatly mitigating the impact of extreme weather events. The economies more reliant on agriculture—such as Belize, Guyana, and Suriname—should focus on stopping deforestation and restoring natural landscapes, thereby reducing soil erosion, the degradation of ecosystems and biodiversity, and the severity of flooding, droughts, and landslides. These steps would also contribute to reducing greenhouse gas emissions and ensuring the long-term productivity of the CARI-12's natural resource base.

**As most governments in the region cannot fully fund climate action through tax revenue, private sector investment will be critical for the transition to a low-carbon, resilient economy.** The COVID-19 pandemic has further constrained the tight fiscal conditions faced by the CARI-12 and their ability to generate revenue for climate investment. Almost half of the CARI-12's NDCs included some cost estimates for the actions and targets proposed, showing that significant resources will be needed. Certain countries, such as Saint Lucia, are working on a separate investment and financing plan, while others are developing financing strategies to implement their climate commitments.

**In small countries like those in the CARI-12, it is essential to incentivize private financing of the transition to climate-friendly technology and approaches, given the magnitude of the upfront capital investment required.**<sup>58</sup> The cost of adopting climate-smart approaches in key sectors, such as agriculture or tourism, may be prohibitive given the small size of local markets and firms. Therefore, the CARI-12 economies need greater access to green finance, especially for MSMEs, as well as de-risking and credit-enhancement tools to crowd in the private sector. Green or blue bonds that offer access to a wider pool of institutional investors, while benefiting from slightly lower interest rates than conventional bonds, are proving attractive to many countries. However, significant barriers to green finance persist across the CARI-12, including misalignment of financial sector policies and incentives with climate and environmental objectives, poor transparency and labeling of green assets, and low penetration and availability of insurance products.

The effect of climate change on key areas of the CARI-12's economies threatens private sector resilience and calls for risk-sharing solutions and greater diversification. However, insurance penetration in the region is low, and economic diversification is often hampered by a weak business environment, constraints to credit, and a slow adoption of digital tools. According to a recent World Bank study,<sup>59</sup> strengthening private sector and financial sector resilience in the Caribbean hinges on six areas, most of which are covered to varying degrees in this RPSD: (a) fostering economic diversification through digitization, (b) expanding insurance coverage and instrument range for the private sector, (c) improving the business environment and access to credit, (d) reducing financial sector vulnerabilities, (e) strengthening financial sector safety nets, and (f) ensuring payment systems continuity. The CARI-12 can better leverage their limited resources by adopting regional approaches in capacity building and risk management.

Table 3.11 offers recommendations to spur private investment in climate resilience.

**TABLE 3.11 RECOMMENDATIONS TO ACCELERATE PRIVATE SECTOR INVESTMENT IN CLIMATE RESILIENCE**

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Incentivizing the private sector to invest</b>			
<b>Review fiscal policy</b>	Support and enable decarbonization with fiscal policies that encourage the move toward cleaner production models.	Short term	National
<b>Review financial sector regulation</b>	Encourage investment in green technologies and reduce the financial and economic risks associated with climate change with enhanced financial regulations and advance disclosure of climate-related financial risks, as well as information on investment opportunities.	Short to medium term	National
<b>Undertake further institutional reform and capacity building</b>	Strengthen institutional capacity to develop appropriate and effective policies to meet climate commitments, and drive implementation through national planning, budgeting, and public investments. For example, setting targets enshrined in climate laws provides clear signals to government entities, households, and businesses to encourage green and climate-resilient investments from both the public and private sector.	Medium term	National/ regional
<b>Secure land tenure</b>	Implement secure land tenure initiatives to support private sector participation in the adoption of climate-smart approaches.	Medium term	National

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Addressing barriers to green finance</b>			
<b>Transparency</b>	Foster transparency by introducing a sustainability taxonomy and adequate labelling of economic activities and by advancing climate-related financial disclosure, focusing on advancing the work on green taxonomies; environmental, social, and governance (ESG) regulations; and reporting and compliance guidelines.	Short term	National/ regional
<b>Capacity building</b>	Build capacity in the financial sector and expand the role of national development banks in providing green finance.	Medium term	National/ regional
<b>Green bonds</b>	Stimulate long-term investments in green projects by issuing sovereign green bonds, which set an important precedent for corporate issuers.	Medium term	National
<b>Risk management</b>	Expand disaster risk insurance coverage, including through the adoption of a disaster risk financing and insurance strategy.	Medium term	National/ regional

## Notes

1. UNIDO (United Nations Industrial Development Organization), "Quality Infrastructure of the Americas: Strategic Roadmap" (UNIDO, Vienna, Austria, 2017).
2. World Bank, *Doing Business 2020* (Washington, DC: World Bank, 2020). These data are case specific and subject to interpretation but offer a snapshot of the challenges faced by traders.
3. An NSW is a system that allows parties involved in trade and transport to house standardized information and documents (mainly electronic) with a single-entry point to fulfill all import, export, and transit-related regulatory requirements.
4. A MSW is an electronic system for the exchange of reports for ships arriving in and departing from a country's ports.
5. ASYCUDA is an integrated customs management system for international trade and transport operations.
6. Pre-arrival submission of import documentation is available only in Antigua and Barbuda, Barbados, Dominica, Grenada, St. Kitts and Nevis, and St. Vincent and the Grenadines.
7. IMO (International Maritime Organization), "IMO Maritime Data Solution Available after Launch in Antigua and Barbuda," IMO website, April 11, 2019, <https://www.imo.org/en/MediaCentre/PressBriefings/Pages/07-IMO-maritime-data-solution-available-after-launch-in-Antigua-and-Barbuda-.aspx>.
8. The CARICOM IMPACS is coordinating the establishment of an integrated border system for the OECS.
9. The World Trade Organization encourages members to develop Authorized Operator schemes based on international standards, such as those of the Revised Kyoto Convention and the SAFE Framework of Standards.
10. TIPs are websites outlining information on laws, regulations, and procedures to be followed when engaging in international trade.
11. This is a collaborative effort between 20 government agencies from seven ministries, together with the Trinidad and Tobago Chamber of Industry and Commerce (<https://www.ttbizlink.gov.tt/tntcmn/faces/pnu/PnuIndex.jsf>).
12. An official or office in a country designated to deal with inquiries from other countries and the public on subjects such as technical barriers to trade or sanitary/phytosanitary measures.
13. Except in the Bahamas, Guyana, and Suriname, where they are not managed by government entities.
14. Labor reforms have been difficult to achieve owing to opposition from labor unions. However, Antigua and Barbuda has succeeded in establishing three shifts per 24 hours at its port, reducing overtime costs, and Saint Lucia reduced gang size to 15 workers.
15. Only Barbados has a refrigerated warehouse at its port.
16. Based on Marine Traffic data, total shipping capacity in TEU (twenty-foot equivalent units) is estimated to have dropped to 476,214 during the fourth quarter of 2021 compared to 669,448 during the same period in 2019.
17. United Nations, *International Migrant Stock 2019: Country Profiles*. <https://www.un.org/en/development/desa/population/migration/data/estimates2/countryprofiles.asp>.
18. OECD (Organisation for Economic Co-operation and Development), "The New Immigrants: Global Trends in Migration Towards OECD Countries between 2000/01 and 2015/16" (Migration Data Brief 4, June 2019), <https://www.oecd.org/els/mig/Migration-data-brief-4-EN>.
19. "Post-secondary Education and Skills in OECS countries: Overview and Challenges amid COVID-19", draft (World Bank, 2021).
20. ILO (International Labour Organization), "Skills for Green Jobs in Barbados" (ILO, Geneva, Switzerland, 2018), [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/---ifp\\_skills/documents/publication/wcms\\_706853.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---ifp_skills/documents/publication/wcms_706853.pdf).
21. Emma Näslund-Hadley, Patricia Navarro-Palau, and María Fernanda Prada, "Skills to Shape the Future: Employability in Belize" (Education Division Social Sector Technical Note IDB-TN-01837, Inter-American Development Bank, Geneva, Switzerland, 2020).
22. Giordano and Associates, Saint. Lucia's Labor Market Needs Assessment Survey Report 2020, draft (Government of Saint Lucia and the World Bank, 2020).
23. Devonish, Dwayne, A Comprehensive Analytical Report on the 2020 JOLTS Project among Establishments in St. Vincent and the Grenadines, draft, Government of St. Vincent and the Grenadines, 2021.
24. Guyana Human Capital Project, "Institutional Analysis in the Field of Labor Market and Skills Development" (draft, World Bank, Washington, DC, 2022).
25. World Bank, "Post-secondary Education and Skills in OECS Countries: Overview and Challenges amid COVID-19" (draft, World Bank, Washington, DC, 2021).
26. World Bank, "Post-secondary Education in OECS."

27. Secondary enrollments rates in Suriname, the Bahamas, Belize, and Trinidad and Tobago are 58 percent, 63 percent, 71 percent, and 73 percent, respectively—below the Latin American and Caribbean average of 76 percent. Lower-secondary completion rates in Suriname, Belize, Guyana, and Trinidad and Tobago are 47 percent, 70 percent, 79 percent, and 81 percent, respectively—below the Latin American and Caribbean average of 82 percent.
28. The Caribbean Examinations Council administers the CSEC to assess core competencies of students at the end of the secondary education cycle (usually at 16 years of age) in all CARI-12 countries, except in the Bahamas and Suriname. Students' performance in each subject is classified between grades I through VI, with grades I–III counting as passing grades.
29. For example, an associate degree in Digital Humanity, New Media and Creative Industries in Saint Lucia's national colleges costs EC\$1,250 per semester, or more than 15 percent of six months' worth of earnings at the average monthly wage in the country (EC\$1,303). World Bank, "Post-secondary Education and Skills in OECS Countries."
30. The latest available data from the World Bank Education Statistics shows that 14 percent, 16 percent, and 18 percent of all tertiary-level graduates obtained STEM-related degrees in Guyana, Grenada, and Belize, respectively.
31. Näslund-Hadley, Navarro-Palau, and Prada, "Skills to Shape the Future."
32. Diego Angel-Urdinola and Cynthia Marchioni, "The Eastern Caribbean Should Invest More in Higher Education," World Bank blog, January 21, 2022, <https://blogs.worldbank.org/latinamerica/eastern-caribbean-should-invest-more-higher-education-o>.
33. A. Bleeker A. and R. Crowder, "Selected Online Learning Experiences in the Caribbean during COVID-19" (Studies and Perspectives series-ECLAC Subregional Headquarters for the Caribbean, 105 [LC/TS.2021/212-LC/CAR/TS.2021/7], Santiago, Chile, Economic Commission for Latin America and the Caribbean, 2022).
34. Stacey N. J. Blackman, "The Impact of Covid-19 on Education Equity: A View from Barbados and Jamaica," *Prospects* 51 (2022), <https://doi.org/10.1007/s11125-021-09568-4>.
35. World Bank, Organization of Eastern Caribbean States (OECS) Systematic Regional Diagnostic (World Bank, 2018); Monica Parra-Torrado, "Youth Unemployment in the Caribbean" (Washington, D.C.: World Bank, 2013); Carlos Soto, "Assessment of the Social Protection Sector in Saint Lucia" (Washington, D.C.: World Bank, 2015).
36. The ECCU comprises Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines.
37. Three Canadian banks (CIBC, RBC, and Scotiabank) exited the ECCU in 2019. Their assets were mainly acquired by local or regional banks. Even where Canadian banks remain active, such as in the Bahamas and Barbados, their market share has dropped by more than 20 percentage points in recent years.
38. At the end of 2019, Grenada posted an NPL ratio of only 2.2 percent, in stark contrast with the 24.0 percent ratio in fellow ECCU member St. Kitts and Nevis.
39. In the ECCU, a credit moratorium was in place for almost two years, up until March 2022.
40. Caribbean Confederation of Credit Unions, as of December 31, 2020.
41. The number of members as a percentage of the labor force reached 155 percent in Barbados, 135 percent in St. Vincent and the Grenadines, 108 percent in Trinidad and Tobago, and 95 percent in Belize in the late 2010s.
42. For example, credit unions in the ECCU are regulated by each country's Financial Services Regulatory Commission and not by the ECCB.
43. Certain countries (such as Barbados and Grenada) do not allow banks to auction collateralized property at prices lower than minimum levels set by law.
44. ILL (Insurance Information Institute), 2019 Insurance Fact Book (New York: ILL, 2019).
45. According to the IMF, Belize has suffered the most from losing correspondent banking relationships. Most ECCU banks have retained more than one active correspondent, although they have lost some. Countries with more developed financial systems, such as Barbados and Trinidad and Tobago, have suffered no significant disruption so far. The Bahamas has experienced a moderate impact, with six institutions (accounting for about 19 percent of domestic banking assets) losing correspondents.
46. See more at the FATF website, <http://www.fatf-gafi.org/publications/high-risk-and-other-monitored-jurisdictions>.
47. See more here: European Commission, "High Risk Third Countries and the International Content of Anti-Money Laundering and Countering the Financing of Terrorism, updated January 7, 2022, [https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/anti-money-laundering-and-counter-terrorist-financing/eu-policy-high-risk-third-countries\\_en](https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/anti-money-laundering-and-counter-terrorist-financing/eu-policy-high-risk-third-countries_en).
48. IMF (International Monetary Fund), "The Bahamas: Selected Issues—The Structure and Trends in the Bahamas' Offshore Sector" (IMF Country Report 17/315, IMF, Washington, DC, 2017).
49. M. González-Miranda et al., "Offshore Financial Centers: To Be or Not to Be?" in *The IMF Eastern Caribbean Economic and Currency Union—Macroeconomics and Financial Systems*, ed. A. Schipke, A. Cebotari, and N. Thacker (Washington, DC: IMF, 2013).
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## 4. SECTOR-SPECIFIC ASSESSMENTS

### 4.1 ANALYTICAL FRAMEWORK FOR SECTOR ASSESSMENTS

This RPSD includes sectoral assessments focused on the digital economy and renewable energy. The volatile and generally low growth of the past decade, compounded by the COVID-19 crisis, has highlighted the vulnerability of the CARI-12 economies and their need for export diversification, a faster green transition, and enhanced resilience. In this context, we used three criteria for choosing the sectors to be assessed in greater depth: (a) sectors with the potential to support enhanced productivity and export diversification, (b) sectors with the capacity to create high-quality jobs, and (c) sectors that contribute to a more resilient and green economy (figure 4.1). The feasibility of implementing policy recommendations in the medium term (three to five years) was an added consideration. The digital economy met all three criteria and is increasingly important in the wake of the pandemic. Digital technologies could be transformational across the region, enhancing the quality and inclusivity of public services, unlocking productivity gains in traditional sectors, and creating new export opportunities and high-quality jobs. Better digital connectivity could reduce the geographic and scale challenges that most CARI-12 countries face, as well as facilitate their climate-change mitigation and adaptation efforts. On a similar note, a transition toward renewable energy will make regional economies more sustainable, reduce their energy costs, improve trade and fiscal balances, and enhance the competitiveness of exports. Moreover, digital services and renewable energy are mutually reinforcing: lower electricity costs and higher energy stability can provide a more fertile ground for the digital economy, while climate-smart grid technologies require well-developed and affordable digital networks.

**FIGURE 4.1 SECTOR SELECTION FRAMEWORK**



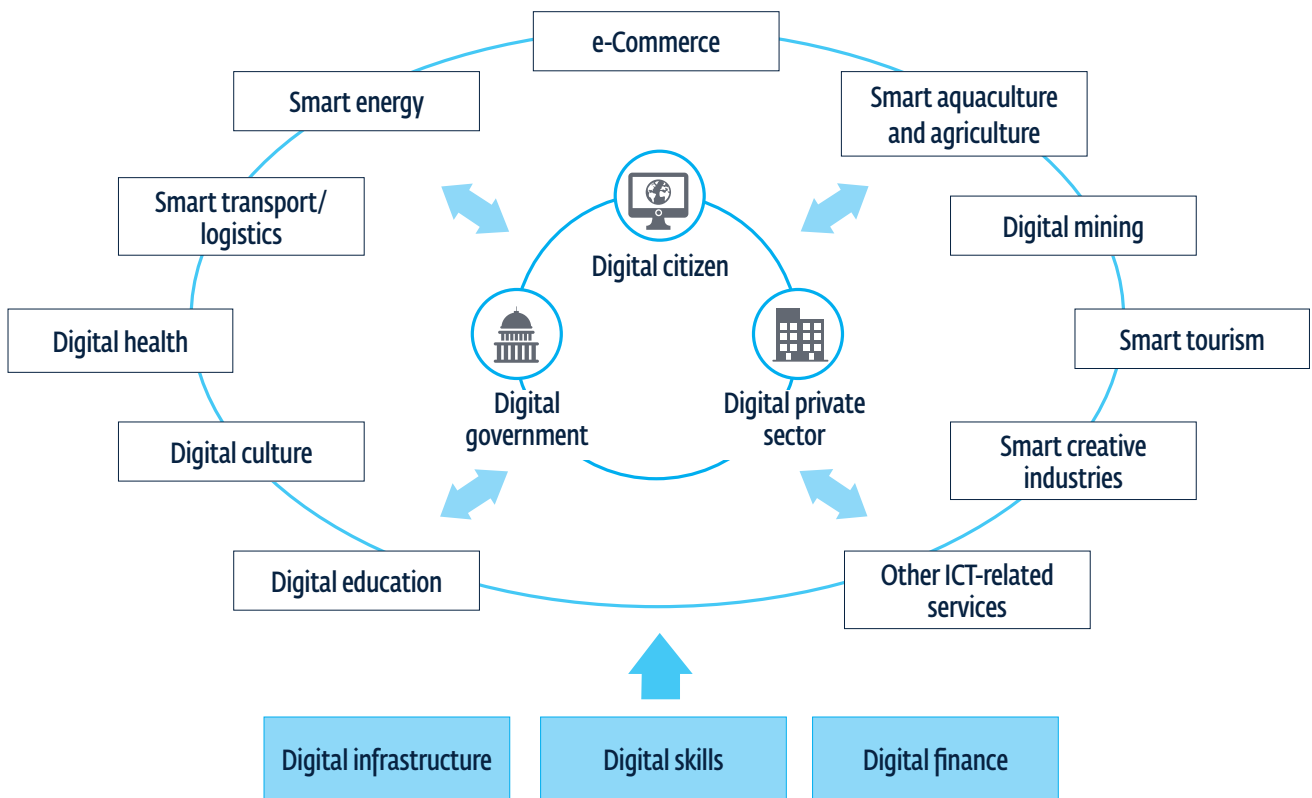
Source: WBG elaboration.



## **4.2 BUILDING THE FOUNDATIONS FOR A VIBRANT DIGITAL ECONOMY**

Digital technologies can open a unique window of opportunity to transform the CARI-12 region, improving service delivery, enhancing firm productivity, and connecting firms to foreign markets (figure 4.2). They have the potential to reshape traditional sectors such as tourism, agriculture, mining, and logistics and to create new export opportunities, linking the small and distant territories of the CARI-12 region to larger markets. For example, remote-work solutions could enable CARI-12 residents to perform high-value jobs without having to leave the region, and local firms could offer localized digital solutions in key sectors, such as tourism and agriculture, that are more relevant than global alternatives. In the tourism sector these could include a wide range of opportunities, including mobile check-ins and digital payments, back-of-house technologies to enhance productivity, and digital marketing. The CARI-12, especially the tourism-dependent economies, could attract digital nomads. Furthermore, digital technologies, through their extensive generation and use of data, play a key role in supporting climate change mitigation and adaptation measures as well as renewable energy solutions. The quality and efficiency of public services delivery could also be transformed, from health services to firms licensing.

**FIGURE 4.2 THE POTENTIAL OF THE DIGITAL ECONOMY IN THE CARI-12**



Source: WBG elaboration.

Note: ICT = information communication and technology.

The COVID-19 pandemic has increased awareness and usage of digital technologies in the region, but their uptake by both the public and private sectors has yet to meet their potential. All governments across the region supported online learning during the pandemic lockdowns, notwithstanding certain implementation challenges, and expanded their use of digital payments for social transfers. Barbados and the Bahamas showed the most progress among the CARI-12 in the 2020 UN E-Government Development Index but, overall, much room for advancement remains for governments in the region (table 4.1). The private sector also has increasingly adopted digital technologies as a result of the pandemic. In the restaurant industry, new delivery apps (such as foodDROP in Trinidad and Tobago and Hopscotch in Barbados) allowed many businesses to remain operational. In transport, taxi apps such as Let's Go Bahamas and TT RideShare have had an effect in their respective markets. However, these innovations have been slower in CARI-12 countries than in many regional and economic peers, reflecting their lower level of digital development.

**TABLE 4.1 2020 EGDI ONLINE SERVICE INDEX**

COUNTRY	INDEX VALUE	RANKING
Antigua and Barbuda	0.4471	129
The Bahamas	0.6765	76
Barbados	0.5765	97
Belize	0.2647	168
Dominica	0.4471	130
Grenada	0.3412	148
Guyana	0.4647	125
St. Kitts and Nevis	0.3941	137
Saint Lucia	0.3824	139
St. Vincent and the Grenadines	0.4706	123
Suriname	0.2882	164
Trinidad and Tobago	0.6118	81
<b>Comparators</b>		
Fiji	0.5059	113
Malta	0.8118	41
Mauritius	0.7	70
Seychelles	0.6176	89
High-income countries	0.7663	N/A
Upper-middle-income countries	0.5515	N/A
Lower-middle-income countries	0.4864	N/A

Source: UN E-Government Index Report, 2020.

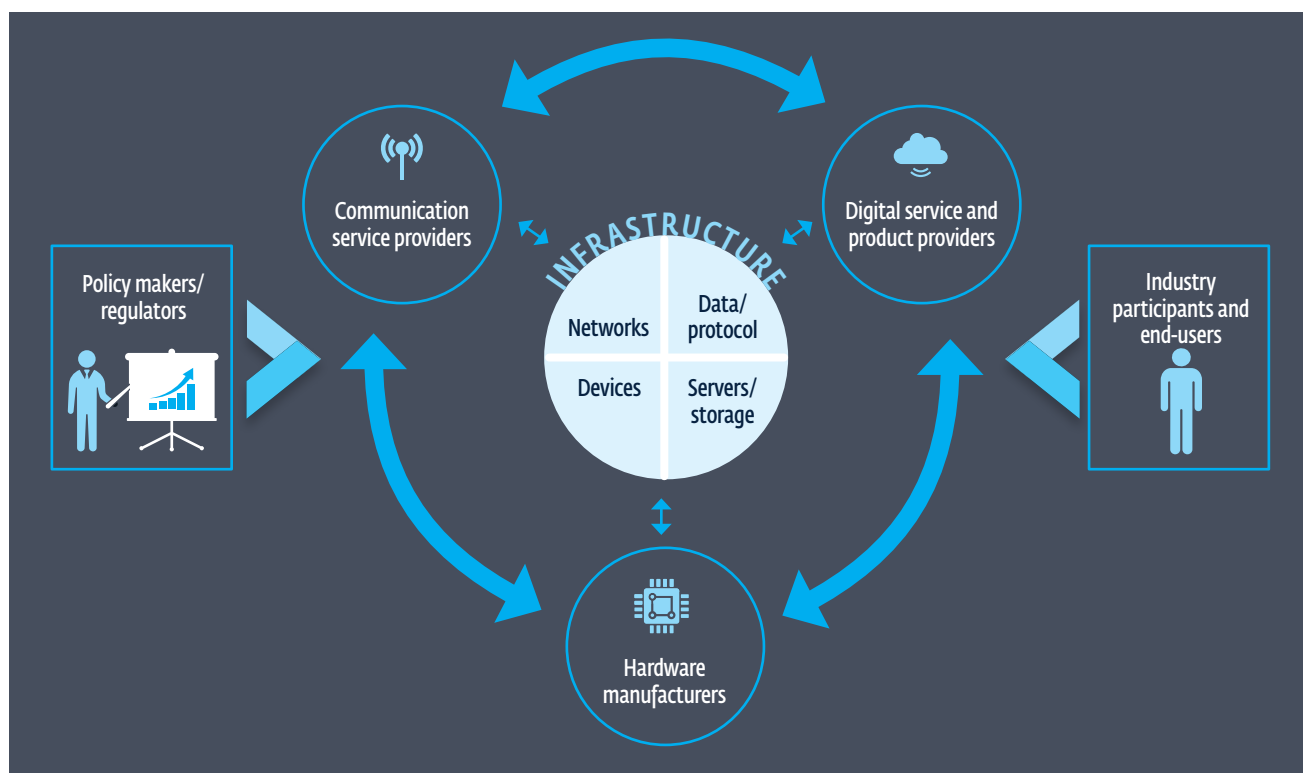
Note: EGDI = E-Government Development Index; N/A = not applicable.

In terms of a digital enabling environment, the CARI-12 countries generally lag global trends and fail to match their economic peers, which constrains the development and uptake of digital services. Enhancing digital infrastructure, talent, and financial services will be crucial to building stronger foundations for the digital economy. Widespread and affordable digital infrastructure is the backbone of a digital economy. A strong pool of digital talent allows for the application of technology throughout the economy, creating openings for new export opportunities and enhancements to public services. Digital financial services, particularly in payments, are essential to the agile functioning of digital and e-commerce platforms, and to the effectiveness and transparency of multiple streams of government payments. In addition, innovative services can expand financial access opportunities for currently underserved market segments, such as SMEs and low-income households. The remainder of this chapter examines the state of digital infrastructure, digital skills, and digital financial services in the CARI-12 region, and opportunities for improving their performance to unleash the potential of the broader digital economy.

### Powering Connection

Widespread, reliable, and affordable digital infrastructure—starting with broadband connectivity—is crucial to the development and integration of the digital economy (figure 4.3). Broad digital infrastructure coverage across a country is a strong—albeit not the sole—determinant of a successful digital economy. In the CARI-12 countries, supporting the growing need for digital services across the society requires a robust foundation of connectivity infrastructure.

**FIGURE 4.3 DIGITAL INFRASTRUCTURE**



Source: World Economic Forum, "Delivery Digital Infrastructure: Advancing the Internet Economy" (WEF, Geneva, Switzerland, 2014), 8, <https://reports.weforum.org/delivering-digital-infrastructure/introduction-the-digital-infrastructure->

**Gaps in terrestrial digital infrastructure constrain both the access to fixed broadband and the quality of mobile broadband services in the CARI-12.** Progress in the accessibility of digital connectivity (either mobile or fixed broadband) varies across countries (table 4.2). The Bahamas and Barbados have made the greatest strides, while Belize and Guyana have the most ground to cover. Even in areas where mobile broadband is available, its adoption is far from universal—in fact, nearly half the population does not subscribe to mobile broadband services. Poor quality of services—which are affected by the lack of modern terrestrial infrastructure (such as fiber optic networks connecting to mobile towers)—and high costs are key constraints to the adoption of digital connectivity among individuals.

**TABLE 4.2 DIGITAL INFRASTRUCTURE IN THE CARI-12**

COUNTRY	BROADBAND—CONNECTIVITY INDICATORS							OTHER DIGITAL ENABLERS	
	Internet-User Penetration	Fixed-Broadband Penetration	Mobile-Broadband Penetration	4G Coverage	Fixed-Broadband Speed	Fixed-Broadband Price	Mobile-Broadband Price	ICT Regulatory Tracker	Global Cyber-security Index
Antigua and Barbuda	73.0	17.1	50.3	99.0	19.0	3.7	2.8	36.8	15.6
The Bahamas	87.0	22.8	101.0	95.0	36.3	1.4	0.6	89.8	13.4
Barbados	81.8	44.5	59.9	99.6	62.3	3.4	1.9	67.5	16.9
Belize	50.8	9.1	50.3	70.0	39.8	9.5	4.8	53.3	10.3
Dominica	69.6	21.7	120.9	95.0	49.2	5.9	4.6	69.5	4.2
Grenada	56.9	28.4	104.9	81.9	59.2	5.5	3.5	77.0	9.4
Guyana	37.3	12.1	34.6	50.0	34.2	8.0	4.6	57.5	28.1
St. Kitts and Nevis	80.7	56.4	92.5	N/A	28.8	2.8	2.4	46.0	12.4
Saint Lucia	53.3	18.0	49.0	96.0	68.7	4.4	3.3	79.0	11.0
St. Vincent and the Grenadines	56.0	22.3	78.9	N/A	58.2	7.2	5.7	80.0	12.2
Suriname	70.1	15.7	91.2	85.0	11.0	6.8	2.3	61.7	31.2
Trinidad and Tobago	70.6	26.9	46.7	75.0	76.9	1.6	3.1	85.3	22.2

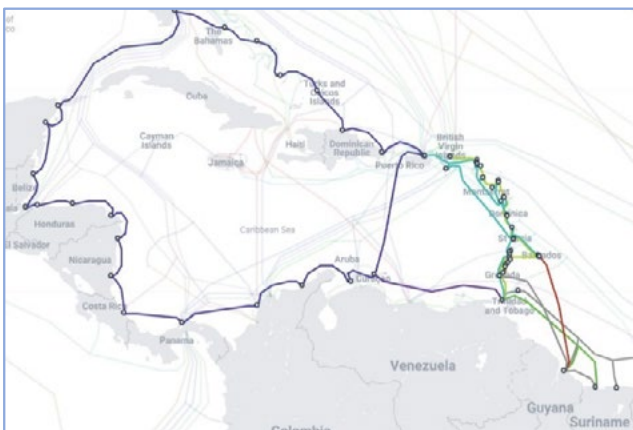
Source: ITU.

Note: N/A = not applicable.

The legal and regulatory frameworks in most CARI-12 countries have failed to keep pace with global trends, as connectivity evolved from voice calls to broadband-driven services. As a result, the region is not equipped to support the development of a competitive, private sector-led broadband market. Two regional telecommunications companies—C&W Networks and Digicel—enjoy preeminent positions, on the basis of legacy investments largely made by a previous operator. A modern legal and regulatory framework could enable sector regulators to push for more competition, enforce standards around coverage and quality of service, enable infrastructure sharing to reduce costs, and expand access to high-speed broadband. However, the lag in developing such a framework has limited the deployment of digital infrastructure and the uptake of services across the region.

The regional market tends to be both concentrated and vertically integrated. Ownership of the first mile (international connectivity infrastructure based on submarine cables) has strong implications on the middle and last mile, in terms of access for downstream telecommunications operators, wholesale and retail prices, and quality of connectivity. C&W Networks and Digicel, which are mainly foreign owned, control infrastructure from the first to the last mile. Notably, C&W Networks owns ARCOS, Eastern Caribbean Fiber System, and EC Link, which connect the CARI-12 to the rest of the world. On the other hand, Digicel expanded the region’s first-mile network in 2006 through Southern Caribbean Fiber. Later, Suriname-Guyana Submarine Cable System, X-Link, and Deep Blue One expanded broadband availability in Suriname and Guyana (figure 4.4 and table 4.3). Currently, C&W Networks has middle- or last-mile operations in most of the CARI-12 except Suriname and Guyana, and Digicel has operations in most except Belize and the Bahamas,<sup>1</sup> while at least one locally owned provider competes on the last mile in most CARI-12 countries. In recent years, infrastructure investments have benefited from global, regional, and national broadband expansion projects such as (a) the ongoing GIGA project, to connect schools in the OECS to the internet; (b) the Caribbean Regional Communications Infrastructure Program, which has worked to improve broadband infrastructure and the regulatory environments in Grenada, Saint Lucia, and St. Vincent and the Grenadines between 2016 and 2022; and (c) the ongoing National Broadband Project in Suriname, to improve the network in coastal areas.<sup>2</sup>

**FIGURE 4.4 MAP OF THE MAIN CARI-12 SUBMARINE CABLES, 2022**



**TABLE 4.3 PRIMARY CARI-12 SUBMARINE CABLES, OWNERSHIP AND READY-FOR-SERVICE DATES**

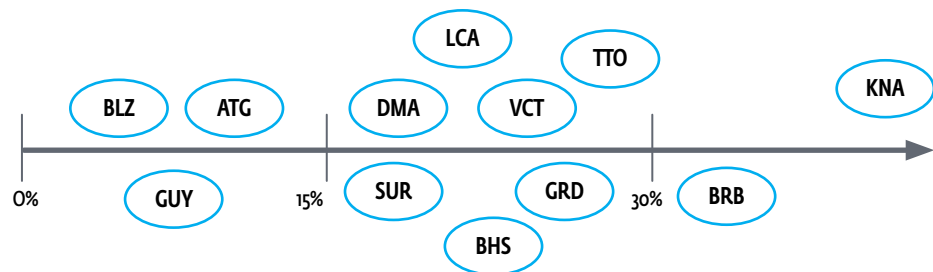
SUBMARINE CABLE NAME	Owner(s)	RFS DATE
ARCOS	C&W Networks and others	2001
EC Link	C&W Networks	2007
Easter Caribbean Fiber System (ECFS)	C&W Networks, GTT and others	1995
Southern Caribbean Fibre (SCF)	Digicel	2006
X-Link Submarine Cable (X-Link)	E-Networks	2019
Deep Blue One (DBO)	Digicel	2024
Suriname-Guyana Submarine Cable System (SG-SCS)	GTT, Telesur	2010

Source: TeleGeography, “Submarine Cable Map,” [www.submarinemap.com](http://www.submarinemap.com), and World Bank elaboration.



Fixed-broadband coverage is uneven, both across the region and within each country. Coverage rates are highest in Barbados and St. Kitts and Nevis, and are lowest in Antigua and Barbuda, Belize, and Guyana (figures 4.5 and 4.6). Research conducted for this RPSD found that rural areas across the region are served by one fixed-broadband provider at best, or by none at all. In remote areas with low population density, the cost of each extra mile of coverage reaches levels that might not be commercially viable, and expanding coverage may require government subsidies.

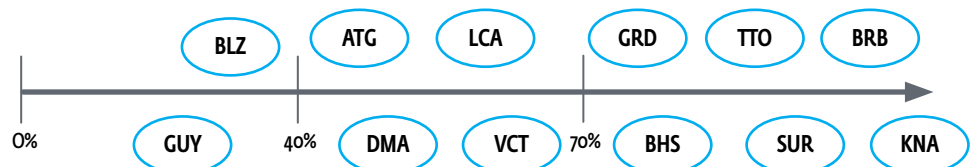
**FIGURE 4.5 FIXED-BROADBAND PENETRATION (AS % OF TOTAL POPULATION), 2020**



Source: ITU, CARI-12 national census data (most recent).

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

**FIGURE 4.6 FIXED-BROADBAND PENETRATION (AS % OF NUMBER OF HOUSEHOLDS), 2020**

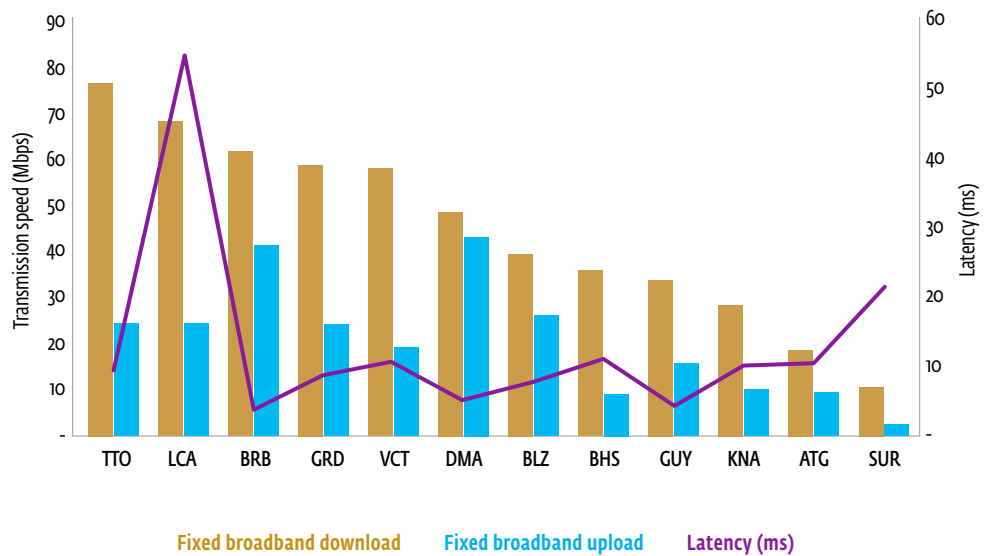


Source: ITU, CARI-12 national census data (most recent).

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

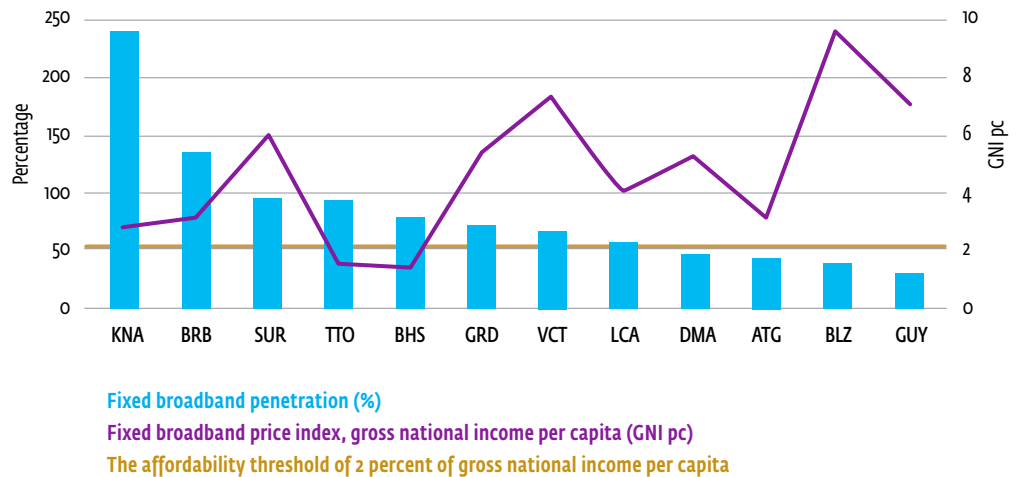
The quality of fixed-broadband services, where available, is inconsistent, while data and devices remain costly. Service is becoming more inconsistent as demand grows. Download speeds range from 11 megabits per second (Mbps) to 77 Mbps across the CARI-12, for an average of 45.3 Mbps (figure 4.7), while latency ranges between 4 milliseconds in Barbados and 55 milliseconds in Saint Lucia. Quality challenges are coupled with high costs for data and devices: only in the Bahamas and Trinidad and Tobago do data prices remain within the affordability threshold of 2 percent of gross national income per capita (figure 4.8).<sup>3</sup> Notably, affordability and penetration of fixed broadband do not always go hand in hand. For example, fixed broadband is more expensive in Barbados and St. Kitts and Nevis than in the Bahamas or Trinidad and Tobago, although penetration rates are much higher in the former. Most countries have deployed mobile-broadband networks but have failed to invest in terrestrial networks, which affects both the quality of mobile broadband and access to fixed broadband. Furthermore, existing infrastructure is aging and in need of upgrades and expansion to unconnected areas, while the fiscal space for investment is decreasing. This investment dilemma could further expand the digital divide within countries, across the region, and with regional peers.

**FIGURE 4.7 TRANSMISSION AND LATENCY IN THE CARI-12, 2022**



Source: ITU, World Development Indicators.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; Mbps = megabits per second; ms = milliseconds; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

**FIGURE 4.8 FIXED-BROADBAND PENETRATION (AS % OF HOUSEHOLD INCOME) VERSUS PRICE IN THE CARI-12, 2020**

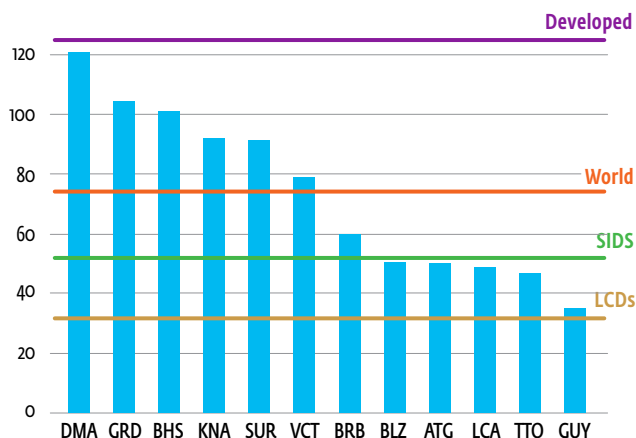
Source: ITU, World Development Indicators.

Note: Global affordability goal is shown in blue. ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GNI = gross national income; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

**Most countries in the CARI-12 have achieved relatively high mobile-broadband coverage, but poor speed and quality of service limit the value on offer.** A 4G LTE network is significantly faster to roll out than a fixed network, but its quality of service and speed depend on the terrestrial infrastructure that supports it. In fact, 4G coverage exceeds 70 percent of the population in all CARI-12 countries except Guyana and approaches 95 percent in most OECS countries (table 4.2). Notably, although Guyana and Suriname face similar challenges of size and topography, only 50 percent of the population has access to a 4G network in Guyana, versus more than 80 percent that have access in Suriname. Moreover, segments of the population remain unserved in Trinidad and Tobago, although the country has had access to significant financing for digital infrastructure. Overall, expanding mobile-broadband coverage requires investment in the underlying terrestrial infrastructure (such as fiber-optic backbone and backhaul networks) to improve quality of service.<sup>4</sup>

**Despite wide coverage, major gaps in mobile-broadband uptake persist in several CARI-12 countries.** Penetration levels for mobile broadband are substantially higher than those for fixed broadband. However, uptake remains below the global average in six of the CARI-12 (figure 4.9) and prices exceed the global average in all but the Bahamas (figure 4.10). The correlation between mobile-broadband penetration and price is weak in several countries, which might reflect the paucity of fixed-broadband alternatives. Dominica, for example, has the third-most expensive mobile broadband in the CARI-12 despite enjoying the highest penetration, which is close to the rates of developed countries.

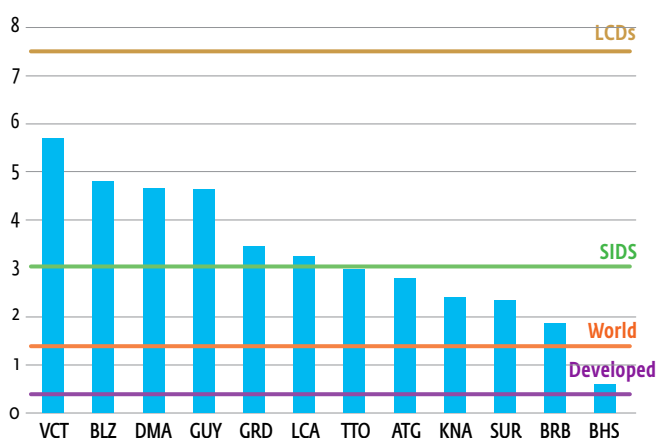
**FIGURE 4.9 MOBILE-BROADBAND PENETRATION (AS % OF POPULATION), 2020**



Source: ITU.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; LDCs = Less developed countries; SIDS = Small island developing states; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

**FIGURE 4.10 MOBILE-BROADBAND PRICE (AS % OF GNI PER CAPITA), 2020**



Source: ITU.

Note: ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GNI = gross national income; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; LDCs = less developed countries; SIDS = Small island developing states; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

**All CARI-12 countries have liberalized the telecommunications sector, but regulatory and institutional gaps remain.** The legal framework in most countries is still rooted in fixed telephone and voice communication and is poorly suited to a broadband-based market. In turn, this limits the ability of regulators to promote competition and investment, protect consumer rights, and enforce standards of coverage and quality of service. For example, a telecommunications-based regulatory framework would allow a sector regulator to enforce nondiscriminatory access to networks by smaller internet service providers or new entrants. Regulatory tenets about nondiscriminatory access and competition have been well-established globally for years, with demonstrated results. However, the goal of access requires a legal framework that is still lacking in the CARI-12, whereby regulators can use appropriate tools in support of market development. Box 4.1 illustrates the effect of sectoral reforms on market outcomes in Georgia, which suggests how similar reforms might reshape the CARI-12 markets.

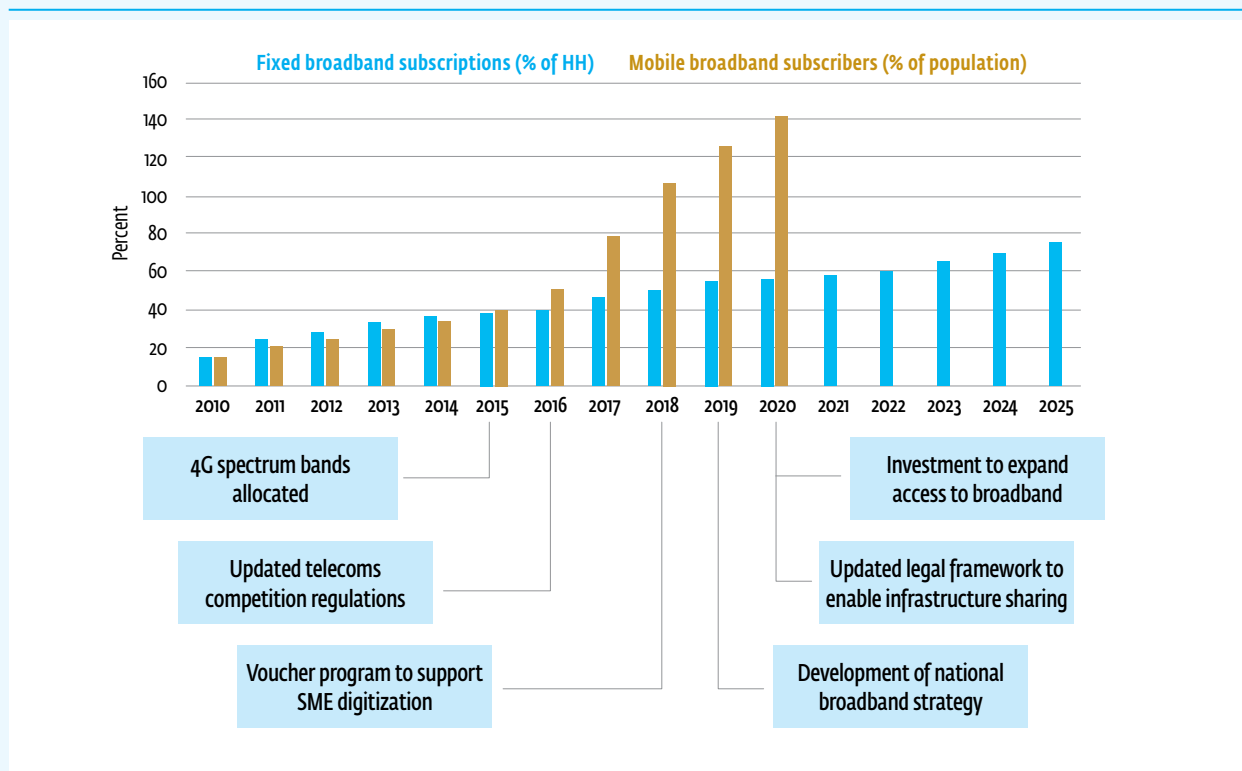
**Investment into local broadband is not obviously attractive for private sector players.** The lack of scale potential, along with high construction and maintenance costs due to frequent natural disasters (especially in the OECS), deter new investors and restrict further commitments from existing players.<sup>5</sup> Even large and flat land masses such as Belize, Guyana, and Suriname have peculiar topographies that present challenges for infrastructure development. Traditional network infrastructure is not sustainable outside of the most densely populated areas. The capital expense required to serve a small number of residential customers in remote areas is too high for local providers.

**BOX 4.1 UNLOCKING ACCESS TO BROADBAND IN GEORGIA**

Georgia has a population of over 3 million, with a mountainous terrain and sparsely populated rural areas. The telecommunications market was highly concentrated, with limited investment in digital connectivity infrastructure and in technological

upgrades. The government and the regulator adopted a pro-competition, pro-investment approach, catalyzing private sector investment and increasing uptake (figure B4.1).

**FIGURE B4.1 BROADBAND UPTAKE TRENDS IN GEORGIA (2010–20 ACTUAL, 2021–25 PROJECTED)**



Source: World Bank elaboration

Note: HH = households; SME = small and medium enterprise.

Key reforms included (a) updating the telecommunications legal framework to make it suitable for electronic communication and (b) developing associated regulations in areas such as competition, access, market definition, and quality of service. Such reforms stimulated competition and lowered prices while boosting uptake.

Small and medium-sized internet service providers emerged, offering services in rural locations where larger operators were unwilling to invest. Today, over 100 small and medium-sized internet service providers offer fixed-broadband services in rural areas across the country.

**The CARI-12 suffer from regulatory and institutional shortcomings around cybersecurity, consumer protection, and data privacy.** Several countries lack basic legislation on cybercrime,<sup>6</sup> while the regulatory framework on data privacy, consumer protection, the electronic exchange of information, and digital identification is uneven.<sup>7</sup> These gaps contribute to a risky digital environment and discourage the uptake of digital tools by SMEs and the wider population.

**National policies on digital services have progressed slowly and regional coordination has been a challenge.** This trend has contributed to regulatory fragmentation across the CARI-12, outdated infrastructure, high operating costs, and uneven quality. Advancing the digital infrastructure agenda will require strong political will and substantial financial capital,<sup>8</sup> but coordination among policymakers and regulatory authorities in the region remains limited. Outside the OECS, regional travelers face high roaming charges and, in certain cases, lack of interoperability, which deters the adoption of digital services (such as by discouraging the use of payment applications while traveling) and reinforces traditional options (such as cash and card payments). The CARICOM Single ICT Space Initiative has been working toward the elimination of roaming charges, but reaching a consensus has been challenging so far.

### **Building a Strong Supply of Digital Talent**

**The digital transformation requires a strong pipeline of talent with digital skills, and public policies need to facilitate the development and utilization of such skills.** The pandemic has amplified the urgency of developing digital applications for commerce, work, and the delivery of services to the population, while technological progress requires agile skill adaptation from workers. A large pool of digital talent would allow the region to export ICT-related services, overcoming the small size and geographical isolation of its domestic markets. Several obstacles, however, appear to be standing in the way. Traditional modes of education are not keeping up with employers' needs for digital skills. Moreover, few workers in the region have completed tertiary education and even fewer have specialized in ICT-related fields. Inequality in access affects opportunities to develop digital skills. Most public services, both for individuals and for firms, remain unavailable in digital format, which has reduced the potential demand for digital talent.

**The CARI-12 region is not producing a robust pipeline of talent to support the digital transformation.** In seven of the CARI-12 countries, the current level of basic digital skills is moderate-to-high, while that of advanced digital skills is moderate; in the others, the level of basic digital skills is moderate, while that of advanced skills is low (table 4.4).<sup>9</sup> Mean years of schooling, internet-user penetration, and social media usage were used as proxies for basic digital skills; tertiary gross enrollment ratios and the number of STEM graduates were considered proxies for advanced digital skills. Barbados stands out as the country with the most advanced digital skills, while substantial gaps are apparent in other countries.

**TABLE 4.4 DIGITAL SKILLS INDICATORS IN THE CARI-12**

COUNTRY	MEAN YEARS OF SCHOOLING	SOCIAL MEDIA USAGE	INTERNET USER PENETRATION	STEM GRADUATES	TERTIARY GROSS ENROLLMENT RATIO
Antigua and Barbuda	9.3	68.1	73.0	5.2 <sup>a</sup>	25
The Bahamas	11.4	69.7	87.0	7.5 <sup>a</sup>	15
Barbados	10.6	84.6	81.8	12.4 <sup>a</sup>	65
Belize	9.9	69.6	50.8	3.5 <sup>a</sup>	25
Dominica	8.1	63.0	69.6	16.6 <sup>a</sup>	7
Grenada	9.0	79.1	56.9	6.7 <sup>a</sup>	105
Guyana	8.5	67.1	37.3	6.4 <sup>a</sup>	12
St. Kitts and Nevis	8.7	84.1	80.7	3.5 <sup>a</sup>	87
Saint Lucia	8.5	66.4	53.3	7.5 <sup>a</sup>	14
VCT	8.8	78.9	56.0	8.3 <sup>a</sup>	24
Suriname	9.3	69.1	70.1	6.6 <sup>a</sup>	11
Trinidad and Tobago	11	78.4	70.6	6.6 <sup>a</sup>	6
<b>Comparators</b>					
Fiji	10.9	71.6	69.0	N/A	53
Malta	11.8	101 <sup>b</sup>	87.0	20.3	65
Mauritius	10	78.6	65.0	23.3	44
Seychelles	10	74.0	79.0	17.2	19

Source: UNDP human development data (2019); Datareportal (2022) Statista; ITU Digital Development Dashboard (2020); UWI St. Augustine (2020); UWI Cave Hill (2020); University of the Bahamas (2020); OECD (2012); UNDP human development data, World Bank (1993–2018).

Note: STEM = science, technology, engineering, and math.

a A breakdown of STEM graduates by faculty and by country is not available. Therefore, country values were estimated. Additionally, the list of campuses/universities used for this estimate is not exhaustive. The actual number of graduates will likely be greater than depicted here.

b Social media user numbers may not correspond to unique individuals, since platforms report numbers of user accounts.

VCT = St. Vincent and the Grenadines.

N/A = not available.

### A Growing but Inadequate Supply of Digital Skills

**Basic digital skills training has accelerated in some countries, especially as a result of the COVID-19 pandemic, but it has proved challenging in certain countries because of insufficient training and equipment.** At a regional level, the Caribbean Examinations Council has designed syllabi and curricula for digital skills courses at the secondary level in participating countries.<sup>10</sup> In 2019, a course on basic digital skills was included in the Caribbean Certificate of Secondary Level Competence (CCSLC),<sup>11</sup> but schools across the region have not adopted it widely because of ill-equipped ICT labs and insufficient teacher training. Even during pandemic, a lack of ICT equipment and time to prepare teachers hampered the provision of online learning. Apart from Trinidad and Tobago and, to a lesser degree, the Bahamas and Barbados, the number of secondary-level graduates in ICT fields is low.

**Training on basic digital skills for adults is available, although unevenly, across the region.** The Commonwealth of Learning launched the C-DELTA platform to promote digital education in Commonwealth nations and beyond.<sup>12</sup> Access to the platform is free and successful learners receive a certificate of competency. National ICT programs, such as Saint Lucia's, have also encouraged basic digital skills training. Community-based organizations have also been contributing; for example, the Heritage Education Network in Belize promotes digital literacy training for women, cooperatives, and MSMEs in the cultural and creative industries.<sup>13</sup> However, such initiatives are sporadic and do not cover the entire region. The relatively high internet-user penetration in many CARI-12 countries could facilitate the promotion of training programs and tutorials on basic digital skills.

**Public and private universities in the region have expanded their teaching of advanced digital skills, but their offerings fall short of market needs and their quality can be enhanced.** For example, the University of the West Indies' (UWI) Cave Hill campus in Barbados, one of four UWI campuses, offers most of the typical undergraduate degrees focusing on advanced digital skills: computer science, IT, software engineering, and electronic engineering. These courses are also offered online. Data science is only available at the master's level. In 2019, 953 students completed ICT undergraduate programs at UWI, roughly 6 percent of tertiary graduates in the region—a low percentage, considering that UWI trains most of the region's ICT graduates.<sup>14</sup> In addition to UWI, certain CARI-12 countries have national universities (such as Grenada's St. Georges University and the University of Trinidad and Tobago) as well as private tertiary institutions (such as SBCS Global Learning Institute), which offer education and training in advanced digital skills on campus and online. However, existing curricula are not keeping pace with the ever-evolving nature of ICT, partly because there is a limited pool of qualified and experienced educators and a lack of modern classrooms to facilitate training.

**Governments and private sector organizations sponsor complementary IT training programs.**<sup>15</sup> Larger firms offer internal training to employees to support the utilization of advanced technology and software for business operations. Certain civil society organizations also facilitate advanced digital skills training, but only sporadically. The Avasant Foundation, for example, offers mentorship in advanced digital skills, facilitates employment in digital jobs, and trains teachers to use technology.<sup>16</sup> The Caribbean School of Data, a partnership between learning centers and private firms, has developed digital literacy programs and data skills programs across the Caribbean.<sup>17</sup>



### Increased Demand for Digital Skills in the Wake of the Pandemic

Although the COVID-19 pandemic has prompted a seismic change in the digital strategies of many businesses, both the public and private sectors must push further toward digitization. Executives at leading CARI-12 firms broadly deem certain digital tools, such as data analytics, necessary to compete in the market—although only a few mentioned the importance of more advanced skills, such as those pertaining to cloud computing and programming. In traditional sectors, such as the restaurant, tourism, and transport industries, new applications are transforming established modes of operation. Talent with advanced digital skills is indispensable to create and maintain such tools and to integrate them with others. Digital skills also can be deployed in other vital sectors, such as health care. Apart from the Bahamas<sup>18</sup> and Grenada,<sup>19</sup> the CARI-12 region has lagged so far in the development and integration of e-health services, and thus it stands to greatly benefit from further advancement.

**Governments in the region could play a more active role in attracting and retaining a diverse workforce with advanced digital skills.** The lack of extensive digital public services in the CARI-12 has so far stifled overall demand for digital talent, which instead has flourished in countries where the public sector is more digitally advanced.

### Boosting Access to, and Efficiency of, Digital Financial Services

Digital financial services (DFS), especially digital payments, are essential areas of the digital economy. They support e-commerce, enhance the efficiency and transparency of government payments, and foster access to finance. Digital payments—including payment cards and online or mobile payments linked to e-money or traditional bank accounts—are often the entry point to a wider set of DFS. Governments can also use DFS to increase the efficiency and accountability of various payment streams, including the disbursement of social transfers and receipt of taxes and business payments. Notably, digital channels can ensure that government payments reach their intended beneficiaries and do so in a timely basis, especially in rural areas, as they also reduce the need to transport cash. During the pandemic, digital channels kept payments flowing when physical contact had to be minimized.

Despite a recent acceleration prompted by the pandemic, the digital financial ecosystem is evolving slowly in the region compared to the pace of change observed globally. The CARI-12 economies do not feature a broad and diverse suite of DFS products. Cash remains central and debit cards are widespread, but the use of credit cards or online payments is limited. Payment systems are fragmented within countries, with little interoperability across the region. The pandemic has boosted the use of digital payments for certain government transfers, but most payments from citizens to governments continue to rely on traditional channels.

Developing a comprehensive DFS ecosystem is critical to fostering the broader digital-economy agenda and to expanding access to finance. A DFS ecosystem needs support from appropriate legal and regulatory frameworks (for example, to allow market entry and innovation), robust financial infrastructure (such as national payment systems and credit reporting systems), and low-cost delivery channels (such as agents, point-of-sale devices, automated teller machines, and mobile phones). The state of development of DFS and ensuing priorities vary across the CARI-12 region. In countries with more ground to cover (such as Belize, the OECS states, and Guyana), the development of

DFS can play an important role in fostering e-commerce and in expanding access to financial services and government support for underserved groups such as women and rural dwellers. In countries where DFS are more advanced, such as the Bahamas and Trinidad and Tobago, promotion of more efficient and effective digital financial infrastructure, services, and products can foster the growth of digital businesses and greater transparency of payments, thus enhancing AML/CTF compliance.

### A Gradually Evolving Regulatory Framework

**National policies on DFS across the CARI-12 have set worthy goals, focusing on growth and financial inclusion, but implementation has been slow.** Most CARI-12 countries lack a comprehensive national payment strategy, and their legal and regulatory frameworks need updating. Guyana is among the few countries in the region to have developed, since 2018, a comprehensive National Payments Systems Development Vision and Implementation Plan; however, in the absence of a National Payments Committee to coordinate public and private stakeholders, its implementation has slowed. Certain countries have introduced stopgap amendments to the legislative and regulatory framework or created regulatory sandboxes (as Suriname has) to allow for digital payments.<sup>20</sup>

**Regulatory frameworks on digital payment tools, such as e-money, are varied across the region, and in some cases they hinder adoption and interoperability (table 4.5).** The dynamism of DFS is outpacing regulatory developments in the CARI-12. Regulatory requirements for financial services are onerous and generally favor traditional commercial banks by creating barriers to entry for emerging financial technology (fintech) companies. Even where payment systems regulation is more advanced, such as in the Bahamas, there is room for enhancements—for example, allowing for the entry of new players beyond e-money issuers<sup>21</sup> or facilitating open banking.<sup>22</sup> At the same time, the activities of fintech companies often lie outside the remit of regulators in several jurisdictions; thus, reporting requirements may not apply to them, hampering the detection of emerging risks to the stability of the financial system. Similarly, fintech companies are not classified adequately under the statistical frameworks currently in use in the CARI-12, and public authorities usually lack powers to access their data.

**TABLE 4.5 REGULATORY PROVISIONS FOR E-MONEY IN THE BAHAMAS, BARBADOS, SURINAME, AND TRINIDAD AND TOBAGO**

THE BAHAMAS	BARBADOS	SURINAME	TRINIDAD AND TOBAGO
E-money can be issued by licensed nonbanks and is not considered a deposit.	E-money can be issued by licensed nonbanks and is not considered a deposit.	E-money can only be issued by banks or limited banks and is considered a deposit.	E-money can be issued by licensed nonbanks, but it is considered a deposit.

Source: WBG elaboration.

Efforts to develop integrated DFS solutions, such as a regional payment wallet, have been inconsistent. Even though CARICOM's originating articles provide that "member states elaborate a protocol relating to electronic commerce,"<sup>23</sup> little progress has been made on an integrated e-commerce agenda, including in relation to digital payments. Without a consistent framework across the CARI-12, the cost of scaling up DFS in the region will be significant.

The CARI-12 can draw on regulatory solutions developed internationally, such as specialized licenses for DFS. Jurisdictions around the globe have expanded their DFS markets beyond banks through specialized licenses, often developed after a testing and learning phase (see box 4.2) and tailored to specific services (such as issuing mobile money).<sup>24</sup> These solutions have made it possible for existing nonbank players, such as telecommunications companies, to set up licensed subsidiaries or stand-alone entities; for start-ups to enter the market; and, in some cases, for established banks to create subsidiaries focused on specialized services. Building on global experience, the ECCB is updating the bloc's Payment Systems Law, which could foster market development by expanding the regulatory scope, harmonizing the oversight of nonbank payment service providers across member countries, creating a more level playing field between banks and nonbank DFS providers, and encouraging competition and innovation.

#### BOX 4.2 DFS REGULATION IN TANZANIA: A TESTING-AND-LEARNING APPROACH

The Bank of Tanzania has pursued a testing-and-learning approach to foster innovation. In 2007, to facilitate digital payments, the Bank of Tanzania issued the first Electronic Payment Scheme Guidelines for banks and other financial institutions. Moreover, to enable the entry of nonbanks, the Bank of Tanzania issued letters of no-objection that allowed mobile network operators to launch their own payment services. Just three years later, the mobile-money market featured four major competitors: M-Pesa (Vodacom), Airtel Money (Bharti Airtel), Tigo Pesa (Tigo), and Z-Pesa (Zantel). In the wake of this boom, the National Payments Systems Act was enacted in 2015 to enhance transparency and create a more

level playing field among digital payment providers. The act and subsequent regulation allowed for the issuance of mobile financial service provider licenses, established clear requirements for providers, and imposed penalties for noncompliance. Other measures focused on fostering competition. First, a specialized license was introduced allowing nonbank providers to issue prepaid accounts, which excluded the ability to intermediate funds but exempted them from certain prudential rules applicable to banks. Second, mobile-money providers were permitted to use third-party agents to deliver financial services. Third, simplified customer due diligence was introduced to streamline the opening of certain types of accounts.

Source: Ceyla Pazarbasioglu et al., "Digital Financial Services" (World Bank, Washington, DC, 2020), <https://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf>.

**Innovation hubs and regulatory sandboxes are being tested to accelerate innovation, although it is too early to assess their results.** Innovation hubs provide support and advice to market players to identify opportunities for growth and to navigate the regulatory and supervisory environment. Regulatory sandboxes, on the other hand, are virtual regulatory environments enabling the live testing of new services in a controlled, time-bound manner. They are mostly intended for innovations that do not fit neatly into existing regulatory frameworks, and they allow firms to test new business models, delivery mechanisms, and services on a small scale, subject to regulatory discretion and proportionality. Over 60 jurisdictions around the world—from India to Sierra Leone and from Rwanda to Jordan—are currently using regulatory sandboxes, with mixed results (see box 4.3 for an example). The CARI-12 countries could consider such set ups to pilot innovations.

#### **BOX 4.3 FOSTERING DFS INNOVATION IN INDIA: REGULATORY SANDBOX AND INNOVATION HUB**

The Reserve Bank of India has launched two key initiatives to promote responsible innovation: a regulatory sandbox and an innovation hub.

Created in 2018, India’s regulatory sandbox established a well-defined space and timeframe within which fintechs can introduce innovative solutions, subject to regulatory guidance from the Reserve Bank of India. Key areas of focus include retail payments, cross-border payments, lending to micro, small, and medium enterprises, digital know-your-customer processes, and identification services, smart contracts, financial

inclusion, regulatory and supervisory technology, and cybersecurity and fraud risks.

The innovation hub was launched in March 2022 as a trusted institutional setup to assist policy-making bodies, payment systems providers, and businesses in addressing the increasing regulatory and technological challenges of the financial sector. The innovation hub identifies such challenges through data and insights from applied research and stakeholder consultations and pilots collaborative, technology-based solutions.

Source: Reserve Bank of India.

### **A Fragmented DFS Market**

**Payment systems in the CARI-12 are poorly integrated, thus hampering the adoption of DFS.** The payment system market comprises players with different institutional models—banks, nonbank payment service providers (such as e-money institutions and money-transfer operators), and microfinance institutions. At the country level, digital retail payment options typically include payments based on automated clearing house (ACH) solutions, through credit transfers or direct debits; card payments (credit or debit); and e-money and e-wallet tools. Currently, there is no fast-payment system that is always operational and enables instant crediting of the payee’s account. Individuals and businesses often maintain multiple accounts and choose which one to use on the basis of the type of transaction and the counterpart, which is a source of inconvenience and inefficiency. In this fragmented ecosystem, service providers operate in isolation, neither sharing data nor transacting with one another. The region lacks a common e-money wallet or wider interoperability of digital payment systems, which could allow for seamless and affordable transfers of funds across countries. The OECS is the exception, with a common ACH network operated by the ECCB.

**Nonbanks are often blocked from accessing the payment system infrastructure, thus placing them at a disadvantage.** In Trinidad and Tobago, for example, nonbank financial institutions—such as credit unions and payment-service providers—do not have access to the ACH, which inhibits interoperability at the transaction account level.<sup>25</sup> Access to payment systems should be based on technical requirements that do not discriminate between banks and nonbanks, with the goal of enhancing speed, convenience, and affordability for end users.

**Compared with other regions, transaction costs for end users of DFS in the CARI-12 are high, due to two interrelated factors: the small number of market players and the relatively low adoption rates.** The small size of the CARI-12 countries, combined with poor financial literacy and a large microfinance sector, does not allow for scale in the provision of DFS. Hence, transaction fees must be high to cover operational costs, while a lack of incentives for new entrants allows incumbents to demand premium pricing.

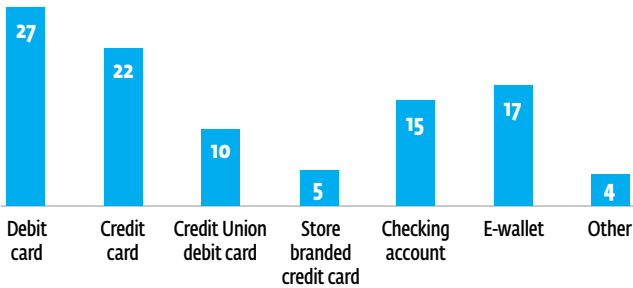
**Regulation and costs have excluded nontraditional DFS players from access to credit information, deterring the emergence of digital lending platforms.** In the CARI-12 region, nontraditional DFS players have so far been unable to offer credit—except for Term Finance, a provider affiliated with a commercial bank,<sup>26</sup> which uses algorithms to assess the creditworthiness of businesses remotely and automates the due diligence process to distribute loans rapidly. The current data-protection framework in the region restricts the use of alternative data from digital sources, analytical tools, and application programming interfaces, thereby limiting opportunities for digital lending and contributing to high costs for credit. There is no indication that digital lending models targeting SMEs are being developed, as these would require secured transaction registries to automate the lending cycle and monitoring of collateral.

**Several CARI-12 countries have initiated procurement for, or announced the intention to launch, government-issued digital identification systems, which are critical for DFS.**<sup>27</sup> The Bahamas, Barbados, and Trinidad and Tobago are focusing on introducing digital identity cards, known as e-ID cards. The risk remains that the implementation and launch of these solutions will suffer delays, and that they will become expensive and outdated as other countries develop m-IDs—that is, digital identification hosted on mobile devices.

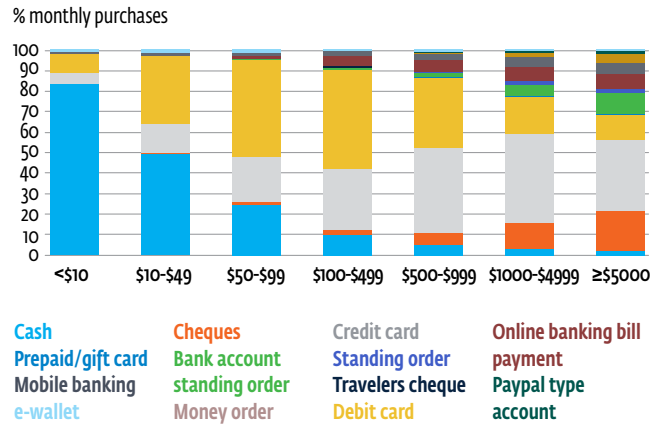
### Limited but Expanding Access to and Usage of DFS

The CARI-12 economies largely remain cash centric, although the uptake of debit cards has risen in recent years. Debit cards have become the preferred digital payment method in many countries, followed by credit cards and e-wallets (figures 4.11–4.14). Many adults have accounts with banks or credit unions, which usually come with debit cards. Such cards can be utilized for online purchases, although certain countries have placed limits on their use. Credit cards have been gaining ground but are not as widely available due to their creditworthiness requirements. E-money wallets, where available and interoperable, are the third most common digital payment tool. Data on mobile-money accounts are not publicly available, but local experts suggest that the number of existing accounts across the region is in the low thousands. The preferred payment method also varies with the value of the transaction. Cash dominates small payments, while the use of debit and credit cards grows with the transaction size. Currently, most remittances in the region are in cash, via cash-in/cash-out at local money transfer agents.

**FIGURE 4.11 PREFERRED DIGITAL PAYMENT METHOD, 2019 (%)**



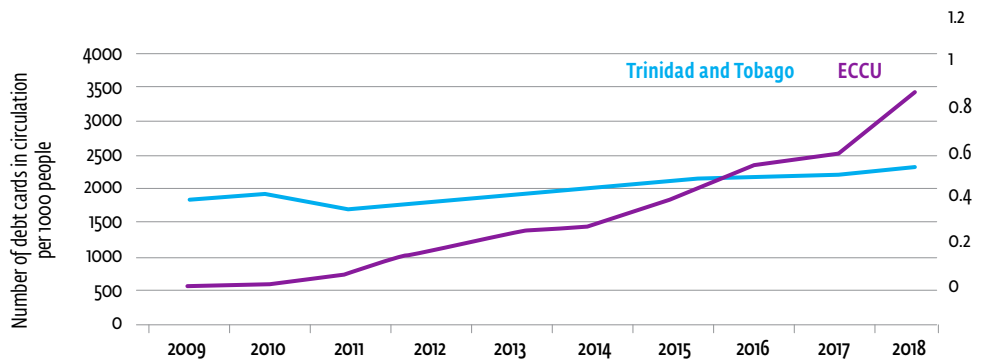
**FIGURE 4.12 MONTHLY PURCHASES BY PAYMENT METHOD (US\$), 2019**



Source: Caribbean Economic Research Team Payments Survey, October 2019.

Note: Country participation in the survey is as follows: Barbados (58 percent), St. Kitts and Nevis (9 percent), Belize (9 percent), Trinidad and Tobago (8 percent), the Bahamas (6 percent), Curaçao and St. Martin (4 percent), and Guyana (3 percent).

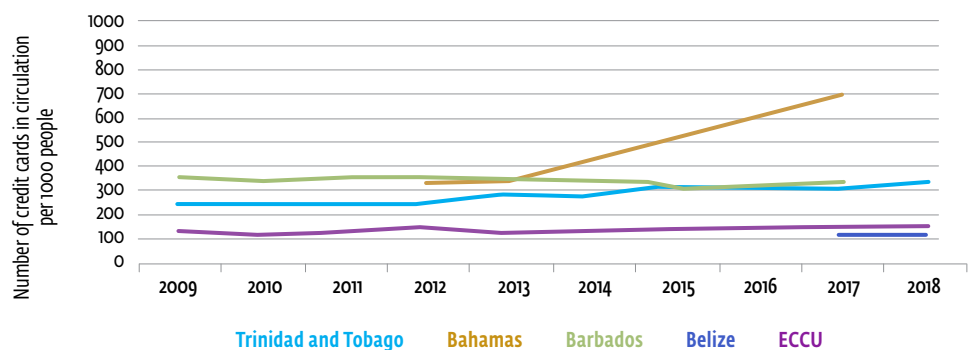
**FIGURE 4.13 NUMBER OF DEBIT CARDS IN CIRCULATION IN THE ECCU AND TRINIDAD AND TOBAGO, 2009–18**



Source: Caribbean Economic Research Team Payments Survey, October 2019.

Note: ECCU = Eastern Caribbean Currency Union.

**FIGURE 4.14 . NUMBER OF CREDIT CARDS IN CIRCULATION IN SELECT CARI-12 COUNTRIES, 2009–18**



Source: Caribbean Economic Research Team Payments Survey, October 2019.

Note: ECCU = Eastern Caribbean Currency Union.

**CARI-12 countries are on par with other small-, middle-, and high-income countries in terms of access to transaction accounts, but they trail behind in their usage and in the availability of digital services.** DFS usage is driven by access to a basic transaction account, which allows individuals to receive and send digital payments and to initiate a shift to more advanced DFS such as savings, insurance, and credit. The low usage of basic transaction accounts in the region stems primarily from a dearth of innovative players in the market, high fees driven by the market dominance of banks, lack of interoperability in digital payment instruments, outdated payment infrastructure, and limited financial literacy. A slow transition to e-government and continued reliance on paper-based payment instruments for tax collection have compounded these factors.

**Current trends suggest that, without proactive government intervention, the use of cash will remain prevalent.** The convenience of automatic teller machines (ATMs) reinforces cash usage and removes an incentive to transitioning to DFS—especially when available mobile-payment services are not widely adopted by merchants or governments. However, the use of checks has decreased—as merchants have stopped accepting them because of high incidence of fraud—and the public sector has been slowly transitioning to ACH and debit-card transfers. This has contributed to an increased use of debit cards, especially because their transaction fees are nominal given their high adoption rates. Although the region’s cash-centric culture endures, research shows that the population is aware of DFS and generally accepts that they will be more widely used in the future.<sup>28</sup> The relatively high availability of mobile-broadband connectivity, albeit often at high prices, offers an opportunity to build on this growing sentiment.

**CARI-12 governments have committed to transforming their respective public sectors, but none have fully digitized the flow of government payments and receipts.** Certain government services, and the corresponding payment options, are fully or partially available online. However, most public services and the attendant payments are delivered in person (for example, for traffic fines, court payments, and permit applications and renewals). During the COVID-19 pandemic, most governments in the region continued using ACH and checks to transfer funds to vulnerable communities, contributing to inefficiencies, delays, and fraud. Certain countries, however (such as Barbados and Trinidad and Tobago), have developed more modern options for public sector payments, as noted previously.

**The Bahamas and the OECS countries have created central bank digital currencies—that is, digital currencies issued by their central banks and pegged to the value of their fiat currencies.** The Bahamas has led the way with the Sand Dollar, which offers universal access to banking services across the country’s more than 300 islands. After a pilot test in December 2019, the digital currency was fully launched in October 2020 and has so far succeeded in increasing financial inclusion and the efficiency of government financial assistance in the wake of hurricanes. Most notably, the Sand Dollar has brought MSMEs into the digital space and has bolstered defenses against money laundering and tax evasion.

## Recommendations

**If they seize on the momentum of the past two years, governments across the CARI-12 have an opportunity to raise their ambitions for their digital economies.** Appropriate digital strategies call for policies that incentivize investment in infrastructure and talent and allow for innovative solutions to be deployed across the economy.

**Accelerating and broadening the digital transformation in the region requires significant investment in digital infrastructure.** Although much has been achieved over the past decade, attracting private investment to close the digital divide requires a more robust enabling environment. A stronger regulatory framework will also enhance trust among businesses and the wider population, boosting demand for digital services.

**In the short term, simpler and more standardized rules for broadband deployment and infrastructure sharing can substantially lower costs for private investors.** Obtaining authorizations, permissions, and rights of way to deploy broadband infrastructure currently consumes substantial time and resources and complicates investment plans—making this a prime area for reform. In addition, enhancements such as passive infrastructure sharing (such as for ducts, poles, towers, and buildings) can cut the cost of deploying digital infrastructure by as much as 60 to 90 percent, thanks to a reduced need for civil works. Such savings can be reallocated to expanding digital infrastructure in underserved areas and to upgrading existing infrastructure. Extensive terrestrial-connectivity networks, ideally based on fiber optic, are essential to technologies such as 5G, artificial intelligence, or the internet of things.

**In the medium term, the CARI-12 countries need enhanced regulatory frameworks and institutional capabilities to adjust to a data-driven communications sector.** Relevant reforms could raise competitive pressure in smaller markets where the sector is currently too weak, improving affordability and quality of services. The level of reform needed to catch up with international best practices and technological trends varies across countries. The less connected countries need to focus on moving from a legal framework designed for a market based on voice communication to one designed for broadband-based electronic communication. This reform can have significant downstream effects, allowing sector regulators to foster competition and private investment. Recently, St. Kitts and Nevis adopted a regionally harmonized legal framework for electronic communications (the Eastern Caribbean Electronics Communications Bill) as a first step toward a better enabling environment for broadband development. In moderately connected countries with a more advanced legal framework for electronic communication, reforms may entail promoting nondiscriminatory access, active and passive infrastructure sharing, and modern spectrum management, as well as supporting investment in technologies such as fiber-optic broadband and 5G.

**Innovative models of public-private partnership can foster greater access to digital services over the medium term.** Digital infrastructure investments in the CARI-12 are largely led by the private sector on the basis of economic opportunity, which often contributes to a digital divide between urban and rural areas. Financing technological upgrades and expanded access to connectivity requires large additional investments. While a supportive enabling environment can help mobilize private capital, such investments may remain economically unviable in large parts of the CARI-12—especially in rural areas. The public sector can help address such market failures through direct investment as well as by serving as an anchor client for private operators. The CARI-12 countries can draw on international experience to explore multiple uses of public funds to fill gaps in economic viability without crowding out private investment in high-speed broadband connectivity.<sup>29</sup>



**Harmonizing the enabling environment across the CARI-12 can help scale up the regional digital economy.** Easing regional mobile-roaming charges and adopting shared standards for quality of service and network coverage obligations would allow regional telecommunications operators to plan on a larger scale and reduce transaction costs. Furthermore, harmonized frameworks for data protection and privacy, cybersecurity, and DFS can enhance the interoperability of national digital ecosystems and foster the development of a regional digital economy. Subregional and regional coordination mechanisms, such as the CARICOM Single ICT Space, offer platforms for collaboration and harmonization, with potential benefits from scale and network effects.

**Scarce demand and challenges to supply explain the sizable gap in digital skills.** The national strategies of several CARI-12 countries highlight the need for a pipeline of digital talent, but developing it requires more investment in secondary and tertiary education, as well the digitization of the public sector. Relevant training must be available and accessible, as more students will demand it as they become aware of market opportunities in the digital economy.

**Investment in education is necessary, at both the secondary and tertiary levels.** Secondary-school students need encouragement to pursue advanced digital skills. At a minimum, secondary schools could provide the Caribbean Examinations Council's Digital Literacy course to all students, which will require investments in technology and teacher training. At the university level, a greater share of merit- and needs-based scholarships could be allocated to ICT-related programs to expand the number of ICT graduates. A more varied offering of postgraduate specializations from the University of the West Indies would expand training opportunities in the advanced digital skills that businesses and governments will increasingly seek. Moreover, internships in the industry can help students chart their professional careers. Public awareness campaigns in collaboration with communities, chambers of commerce, and other business associations could accelerate the uptake of digital skills programs already freely available online.

**The CARI-12 governments may explore regional coalitions for digital skills and jobs similar to those developed in the European Union.**<sup>30</sup> In fact, a regionally integrated model could be applied throughout CARICOM to (a) identify activities related to digital skills, which would be carried out by members of the coalition or nationwide; (b) raise awareness of digital skills among policy makers, organizations, and citizens; and (c) plan, develop, and promote an open platform for assessing, learning, and testing digital skills. The launch of the CARICOM Digital Skills Taskforce in 2021—to deliver a more collaborative and coordinated approach to the digital skills challenge—is a first step in this direction.<sup>31</sup> The public and private sectors can also make advanced digital skills more attractive and popular through relevant competitions, such as hack-a-thons (where students are given a challenge to solve) or robotics competitions (where students are asked to develop a prototype using their digital skills and creativity).

**The private sector has a critical role in driving demand for digital skills.** Given their need to digitize to remain competitive, companies can create employment opportunities for workers with advanced digital skills. As more routine tasks are automated, more workers will need to develop at least some digital skills. The private sector can signal its growing needs and partner with the public sector and training institutions to support the pipeline of talent.

**The regulatory and supervisory framework for DFS can foster more competition, open access, and innovation within a safe environment.** Developing common rules for payment services requires more comprehensive and open regulatory frameworks. Regulation should facilitate access to new typologies of payment service providers (including e-money issuers) and create a common level of user protection across all payment services. Nonbank payment service providers should not be placed at a disadvantage, provided that they meet applicable regulatory and technical requirements.<sup>32</sup> The European Union's Payment Service Directive 2 can be a guiding framework for the CARI-12. The ECCB is updating and modernizing the Payment Systems Act, and other jurisdictions in the region should follow suit. Domestic or subregional innovation hubs and regulatory sandboxes should be explored to facilitate innovation and learning within a controlled environment. Regulation needs to be technology neutral to allow the private sector to adapt organically to technological development.

**The deployment of fast-payment systems could boost usage of digital payments.**

Fast-payment systems allow for instant crediting of the payee's account. To date, similar systems exist in about 80 jurisdictions, where they have encouraged the use of digital payments.<sup>33</sup> Certain countries upgraded legacy payment systems, such as ACH, into fast-payment systems, but most have developed stand-alone infrastructure. In the CARI-12, the implementation of domestic or subregional fast-payment systems could accelerate financial inclusion and digital payment usage, accommodating multiple access channels at an affordable price. To be successful, such systems need to be open to both bank and nonbank payment service providers and allow for interoperable solutions.<sup>34</sup> Brazil's fast-payment system Pix, launched in 2020, has revolutionized the local retail payment system, increasing competition, reducing costs, and promoting financial inclusion (box 4.4). Caribbean countries should first assess the upgrading potential of their existing retail payment systems and, if technological constraints emerge, consider new stand-alone infrastructure. Ownership of a fast-payment system could be public, private, or joint public-private, as long as inclusive governance and fair and transparent access criteria are ensured.

#### **BOX 4.4 BRAZIL'S REVOLUTIONARY FAST-PAYMENT SYSTEM**

Pix has revolutionized the Brazilian retail payment market, increasing efficiency, competition, and financial inclusion. The system was launched by the Central Bank of Brazil in 2020. It allows fund transfers between all types of transaction accounts— current, savings, and prepaid payment accounts—creating a payment-service ecosystem with low acceptance costs and high usability. Pix aliases, which identify the accounts involved in a transaction, are as simple as an e-mail address or a mobile phone number. The platform also uses QR codes as an access channel. Its

impressive adoption rate hinges on brand building and trust in the system; mandatory participation for large banks, with ensuing network externalities and scale; speed and low transaction costs, compared with other retail payment instruments; and multiplicity of use cases, including person-to-person transfers, tax and bill payments, and online purchases. Pix enables the full use of smartphones as payment instruments and makes the payment experience as easy, fast, and cheap as sending a text message.

Source: World Bank elaboration.

**An efficient national digital ID system is essential to the effective delivery of digital services, especially with digital payments.** Digital ID cards can offer payment service providers access to their customers' identity information and they can double as payment cards. National ID systems need to cover all citizens and residents and be able to generate uniquely numbered IDs that are hard to falsify and can be easily queried. CARI-12 governments need to prioritize a robust and easily verifiable digital ID system (whether biometric or based on other data) that adequately accounts for privacy concerns.

**Public authorities have several tools to promote access to and usage of DFS.** First, they can foster digital payments to and from government agencies. This would allow government funds (such as public sector salaries, pensions, and social transfers) to reach beneficiary accounts quickly and efficiently, with few automated steps. Similarly, all payments to governments could be digitized starting from the most frequent, such as tax payments. Second, governments can allow for simplified customer due diligence to open basic transaction accounts for underserved communities, avoiding the more onerous documentation requirements associated with traditional accounts. This step has been critical to the development of mobile-based bank accounts in many developing countries, such as Kenya (box 4.5). In addition, new lending products for underserved markets could be developed by building on data from basic transaction accounts as well as alternative sources, such as social media or e-commerce platforms.

#### **BOX 4.5 KENYA'S EFFECTIVE ADOPTION OF SIMPLIFIED CUSTOMER DUE DILIGENCE**

The adoption of simplified customer due diligence was critical to the development of mobile-based bank accounts in Kenya. Credit and savings products on the M-Pesa platform—such as M-Shwari and KCB M-Pesa—use a simplified customer due diligence procedure, which allows virtual and remote account-opening without additional documentation requirements. The banks access the information that

customers provided to the mobile-network operator at the registration stage (for example, national ID or passport details) and verify it against the Integrated Population Registration System, an official database maintained by the Kenyan government. Customers can thus deposit up to approximately US\$2,500 in an M-Shawari bank account, but they are subject to additional verification if they exceed that amount.

Source: Ceyla Pazarbasioglu et al., "Digital Financial Services" (World Bank, Washington, DC, 2020), <https://pubdocs.worldbank.org/en/230281588169110691/Digital-Financial-Services.pdf>.

**Third, regulatory reforms could encourage the channeling of the region's sizable remittance flows into bank accounts and e-money wallets.** For example, allowing e-money wallet providers to channel inward remittances into the transaction accounts of recipients will increase use of the latter, creating a foundation for the adoption of other financial services. Banks could offer products tailored to the needs of migrant communities, beyond the transfer of funds. Such a change will require close collaboration between banks and money remitters to reduce the use of cash and the need for in-person visits to agent locations. Finally, financial education could incentivize a wider use of DFS.

**TABLE 4.6 RECOMMENDATIONS FOR BUILDING THE FOUNDATIONS OF A DIGITAL ECONOMY**

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Incentivizing the private sector to invest</b>			
<b>Enhance the legal and regulatory framework for the telecommunications sector, as well as the capabilities of regulators</b>	Adopt robust legal frameworks that are suited to data-driven communications and enhance the independence of regulators and consumer protection.	Medium term	National
	In the Eastern Caribbean, harmonize legal and regulatory frameworks across the subregion.	Medium term	Subregional <sup>a</sup>
	Increase funding and human resources for institutions responsible for telecommunications regulation.	Short to medium term	National
<b>Simplify rules for broadband deployment and infrastructure sharing</b>	Streamline and enhance transparency of processes to seek permissions and rights of way for deploying broadband infrastructure, reducing costs to investors.	Medium term	National/ subregional
	Simplify regulation of infrastructure sharing to lower infrastructure costs and foster deployment in underserved areas. Harmonize such rules across the Eastern Caribbean.	Short to medium term	National/ subregional
<b>Foster access through PPP models</b>	Design and implement public-private partnership models to mobilize private investment into high-speed broadband connectivity, including in rural and other underserved areas.	Short to medium term	National/ subregional
<b>Expand the pool of digital talent</b>			
<b>Increase the supply of digital skills at the secondary and tertiary levels</b>	Offer the Caribbean Examinations Council's Digital Literacy course to all students and support the program with investments in technology and teacher training.	Short to medium term	National
	Enrich the ICT offering at the tertiary level.	Short to medium term	National/ regional
	Raise allocation of merit- and needs-based scholarships to ICT-related programs at the tertiary level.	Short term	National
	Develop partnerships with the private sector to support training on digital skills for workers.	Medium term	National/ regional
<b>Stimulate demand for digital skills</b>	Conduct annual hack-a-thons and robotics competitions.	Medium term	National/ regional

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Foster open, innovative, and efficient digital payment systems</b>			
<b>Foster competition, open access, and innovation</b>	Amend legal and regulatory frameworks for digital payment systems to encourage competition, open banking, and innovation. Enact the new Payment Systems Act in the Eastern Caribbean and issue complementary regulation.	Short to medium term	National/subregional
	Consider establishing innovation hubs or regulatory sandboxes.	Short to medium term	National/subregional
<b>Deploy fast-payment systems</b>	Assess the feasibility of upgrading existing retail payment systems into fast-payment systems.	Medium term	National/subregional
<b>Incentivize access and usage</b>	Accelerate digitization of social transfers to households and tax payments from firms.	Short to medium term	National
	Issue regulations permitting simplified customer due diligence for basic accounts.	Short term	National
	Allow e-money wallet providers to channel inward remittances into transaction accounts of recipients.	Short term	National
<b>Develop national ID systems</b>	Accelerate or initiate implementation of national ID systems.	Short to medium term	National
<b>E-government</b>			
<b>Digitize key public services</b>	Accelerate the digitization of key public services, such as social transfers, tax payments, customs clearance, and business licensing.	Short to medium term	National

Note: ICT = information and communication technology; OECS = Organization of Eastern Caribbean States.

a. Subregional is OECS



## **4.3 DEVELOPING RENEWABLE ENERGY MARKETS**

## An Untapped Potential

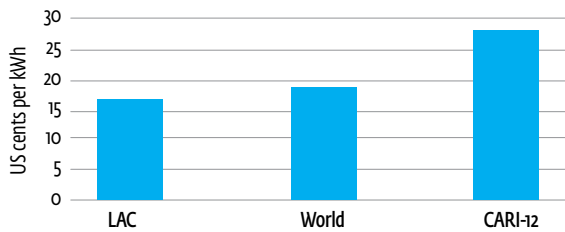
**The CARI-12's current dependence on fossil fuels overshadows their vast renewable energy capacity.** The transition to renewable energy would have cascading beneficial effects on the regional economy and the private sector, including in vital sectors such as tourism. Although households and firms generally enjoy high electrification rates, electricity costs in many CARI-12 countries are much higher and more volatile than in the rest of Latin America and the Caribbean. The shift to renewable energy would offer the region a greener and more sustainable energy matrix, greater resilience, and energy independence. It would also increase the competitiveness of regional exports, especially in the tourism-dependent economies.

**Access to electricity in the CARI-12 countries is high, with electrification rates in line with or above the Latin American and Caribbean average of 97 percent.** However, the region is highly dependent on imported fossil fuels (mostly diesel and heavy fuel oil) for electricity production. Trinidad and Tobago<sup>35</sup> is an exception—it generates nearly all its power from natural gas, of which it is the only exporter among the group. Guyana started commercial oil production in 2020, and recent oil discoveries in Suriname may lead to dependency on fossil fuels there—unless the windfall from oil earnings supports investment in renewable alternatives.

**Electricity costs are relatively high, reflecting inefficiency in electricity production.**

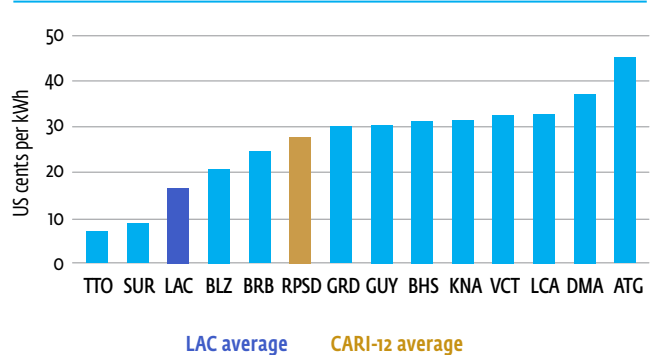
Except for Suriname and Trinidad and Tobago, electricity costs in the Caribbean are among the highest globally. On average, between 2015 and 2020, electricity in the CARI-12 cost 27.7 cents per kilowatt-hour (kWh), compared to 16.5 cents in Latin America and the Caribbean (figures 4.15 and 4.16). This largely stems from rising international fuel prices, inefficiencies in transmission and distribution networks, and the lack of economies of scale across small island states. Most utilities in the Caribbean pass on their fuel costs to customers through a flexible tariff structure, with levels that fluctuate with the cost of fuel. In this system, tariffs tend to be not only high but also volatile. Certain countries subsidize fuel and electricity prices, especially Trinidad and Tobago, where the estimated fiscal burden from this policy was equal to 2.1 percent of GDP as of 2019. In Suriname, lower electricity tariffs are facilitated through cross-subsidies and transfers between the government, the electric utility, and the state-owned oil company, whose value averaged 3.6 percent of GDP between 2017 and 2021.<sup>36</sup>

**The electricity sector is blighted by frequent and long power outages, sizable technical and commercial losses, overstaffing at state-owned utilities, and abuse of market power by private generators.** Frequent power outages result in the common use of off-grid self-generation by hotels and other large tourism establishments, which are among the largest consumers of electricity in the region.<sup>37</sup> According to the latest World Bank Enterprise Surveys, more firms in the region reported experiencing power outages<sup>38</sup> than the Latin American and Caribbean average, resulting in losses of sales.<sup>39</sup> Outdated generation and transmission technology, coupled with illegal connections to the grid and underbilling of customers, are the main sources of losses for power companies. System losses consumed up to 27 percent of the electricity produced in Guyana in 2020; in contrast, Barbados recorded minimal losses, at 5 percent. Improving the efficiency of power generation and transmission could bring significant cost savings in the region.

**FIGURE 4.15 PRICE OF ELECTRICITY, US CENTS PER KWH (AVERAGE OF 2015–20)**

Source: World Bank World Development Indicators.

Note: LAC average excludes the 12 RPSD countries and Venezuela. kWh = kilowatt-hour; LAC = Latin America and the Caribbean.

**FIGURE 4.16 PRICE OF ELECTRICITY IN THE CARIBBEAN, US CENTS PER KWH (AVERAGE OF 2015–20)**

Source: World Bank, Doing Business Report, 2020.

Note: RPSD = Regional Private Sector Diagnostic; ATG = Antigua and Barbuda; BHS = the Bahamas; BLZ = Belize; BRB = Barbados; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LAC = Latin America and the Caribbean; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

Reliance on renewable energy is comparatively low in the region, even though many countries have considerable potential. Hydropower produces a significant proportion of electricity in certain countries.<sup>40</sup> Belize and Guyana<sup>41</sup> also rely on biomass and St. Kitts and Nevis relies on wind. Antigua and Barbuda, Barbados, and to a lesser extent Grenada, Guyana, St. Kitts and Nevis, and St. Vincent and the Grenadines utilize solar power.<sup>42</sup>

The region's abundant renewable energy resources—such as biomass, geothermal, hydropower, solar, waste-to-energy, and wind—offer opportunities to change the energy mix.<sup>43</sup> For most countries in the region, transitioning to renewable energy would reduce dependence on expensive imports of fossil fuels for electricity generation, reducing costs across the economy.<sup>44</sup> Increased public awareness of the enormous economic, environmental, and social costs of such dependence has encouraged many CARI-12 countries to deploy renewable energy solutions such as wind farms, solar water heating, solar photovoltaic (PV), geothermal, and hydropower plants.

### The State of Renewable Energy in the CARI-12

Only 12 percent of renewable energy capacity in the region is privately financed at utility scale. The CARI-12 had a combined 311 megawatts (MW) of renewable energy capacity as of the end of 2021, of which only 37.5MW were privately financed at utility scale.<sup>45</sup> Only three utility-scale renewable energy independent power producers (IPPs) exist in the CARI-12: the 2MW wind farm in St. Kitts and Nevis, a 4MW solar PV plant in Antigua and Barbuda, and the 31.5MW biomass plant in Belize.

Distributed generation (DG) accounts on average for less than 1 percent of total generation in the CARI-12. Since renewable DG installations are typically small but numerous, and no dedicated database exists in the region, tracking them is difficult.<sup>46</sup> A notable DG project in the CARI-12 is the solar plant in Suriname—commissioned in 2014, it has a capacity of 5 MW and powers the company's gold mine.<sup>47</sup>



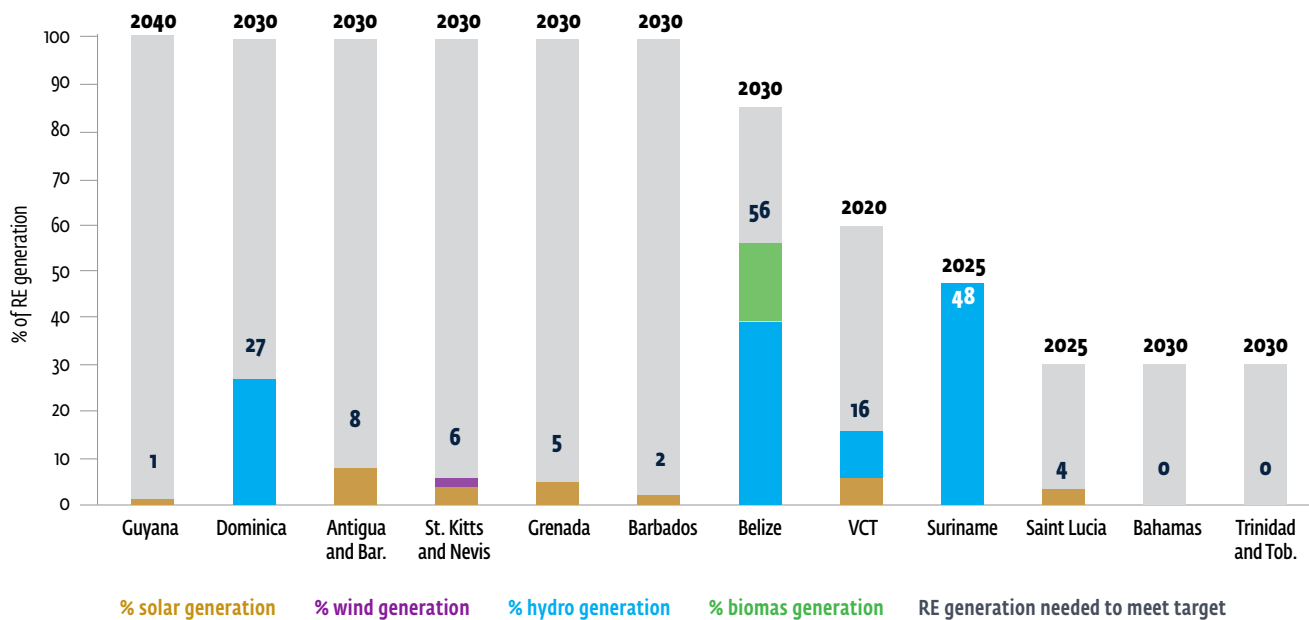
**The public sector has financed at least 85 percent of the installed, utility-scale renewable energy capacity in the CARI-12 (273.5 MW out of 311 MW).** More than half of this capacity comes from a single facility, the 189 MW hydropower plant in Suriname. Many of the larger hydropower plants in the region, including the one in Suriname, were built as early as the 1950s and 1960s and are likely in need of significant capital maintenance and rehabilitation. Notably, only 6.3 percent of publicly financed capacity (equal to 17.2 MW) was added in the past 15 years.<sup>48</sup>

**The CARI-12 countries, except Suriname, have ambitious renewable energy targets, but these are not usually supported by appropriate laws, regulations, or investment frameworks.** Many national energy policies are high level, and not all are backed up by robust legal frameworks (see Appendix A). Barbados stands out, having made the most progress among the CARI-12 in reforming its renewable energy sector and creating an investment-friendly environment—although it does not have any IPPs. Recently, Barbados passed legislation and regulations to support the adoption of renewable energy technologies, especially DG. In 2019, the Fair Trading Commission of Barbados published guidelines and rates on feed-in tariffs for renewable energy plants up to 1 MW,<sup>49</sup> followed a year later by those for plants between 1 MW and 10 MW.<sup>50</sup>

**Barbados' efforts to boost distributed solar generation have been effective.** The Fair Trading Commission recently approved more than 260 licenses for feed-in tariffs. In parallel, the government is seeking to attract larger investments in renewable energy and the Ministry of Energy is developing a policy for the procurement of plants generating more than 10 MW.

**Policies and targets alone are insufficient to deliver generation capacity; because governments lack the technical capabilities or resources to implement renewable energy projects on their own, private sector finance and expertise are required.** To attract private investors, countries require strong political will and leadership, an enabling policy and regulatory environment for private investment, strong local capacity in the public and private sectors, and transparent procurement processes.

**With some exceptions, countries in the CARI-12 have set overambitious renewable energy targets.** Antigua and Barbuda, Barbados, Dominica, Grenada, and St. Kitts and Nevis have set a goal of generating 100 percent of their electricity from renewables by 2030, while Guyana aims to reach the same target by 2040. As of 2022, the first five had less than 10 percent of their energy mix from renewable sources, while Guyana had 1 percent. The Bahamas and Trinidad and Tobago have more modest targets, aiming to achieve 30 percent of generation from renewables by 2030, but they have achieved zero percent to date.<sup>51</sup> Saint Lucia and Suriname have a target of 35 percent by 2025, which the latter has already achieved. St. Vincent and the Grenadines missed its original target of 60 percent by 2020 (when it achieved 16 percent) and has not set a new target—although the country's results have been more impressive than this outcome suggests, as outlined in the following paragraphs. Figure 4.17 shows renewable generation targets in the CARI-12 and progress toward them to date, broken down by technology type.

**FIGURE 4.17 PROGRESS AGAINST RENEWABLE ENERGY TARGETS IN THE CARI-12**

Source: WBG staff compilation.

Note: Trinidad and Tobago's target of 30 percent RE generation by 2030 will not be formally published until Q4 2022, but it is already guiding decision-making in the country. RE = renewable energy; VCT = St. Vincent and the Grenadines.

**Most CARI-12 countries have made little progress toward their renewable generation targets, but some have covered more ground.** Belize, Dominica, St. Vincent and the Grenadines, and Suriname have advanced more compared with the rest of the CARI-12. However, although renewable energy uptake in these four countries has been higher, their progress in the past 20 years has been generally slow. For example, 78.4 percent of their renewable energy capacity was developed between 1952 and 2000. Since then, the only significant developments of utility-scale renewables have been the 31.5 MW biomass plant in Belize, in 2009; a combined 30 MW of hydropower from three projects completed in Belize between 2005 and 2010; and the 0.8 MW Union Island Solar Plant in St. Vincent and the Grenadines in 2019. Suriname is the only CARI-12 country to have met its renewable generation target, but only thanks to the hydropower plant, which was installed in 1963.<sup>52</sup>

**The other CARI-12 countries have made little to no progress toward their renewable energy goals.** Generation from renewables in the rest of the CARI-12 ranges from 0 to 2 percent of the total, with solar and wind power accounting for most of it. Different opportunities are available for different countries, but the CARI-12 have several types of investment opportunities that can be leveraged for increased renewable energy uptake, if key constraints are addressed.

### Diverse Opportunities for Private Sector Investment Across the Region

Investment opportunities vary markedly among the CARI-12 because of differences in country size, terrain, and regulatory readiness. For example, land is a major driver of costs for renewable energy developments, particularly in locations where scale is a challenge. Eight of the CARI-12 countries are small and some are also mountainous, limiting the availability of sites suitable for solar PV or wind projects. Certain sites are also ineligible because of their vulnerability to natural hazards, such as flooding. Four of the CARI-12 countries, on the other hand, have more space to develop utility-scale solar renewables projects. This fundamental difference has a major effect on the feasibility of investment opportunities in the short term. Other key differences concern the legal and regulatory frameworks for investments, which will be covered in more detail in the section “Constraints to Renewable Energy Uptake.” For the purposes of assessing investment opportunities in renewable energy, the CARI-12 countries can be broken down into two subgroups (as shown in table 4.7): the CARI-8, comprising the small island states, some of which have difficult terrain; and the CARI-4, which do not face the same land constraints.

**TABLE 4.7 SUBGROUPS WITHIN THE CARI-12, BASED ON LAND CONSTRAINTS**

CARI-4	CARI-8	
Belize	Antigua and Barbuda	Grenada
Guyana	The Bahamas	Saint Lucia
Suriname	Barbados	St. Kitts and Nevis
Trinidad and Tobago	Dominica	St. Vincent and the Grenadines

**In the CARI-8, privately financed, utility-scale solar PV projects could still be viable under the right circumstances.** Relatively flat islands—such as Antigua and Barbuda, the Bahamas, Barbados, and, to a lesser extent, St. Kitts and Nevis—may present such opportunities. Nevertheless, when seeking to attract global investors, these islands still face challenges related to their small market sizes, regulatory constraints, and limits to the capacity of their utilities to integrate renewable energy. To increase generation to the level required to achieve their targets, all CARI-12 countries will need to expand solar PV through utility-scale or distributed projects.

**Smaller utility-scale renewable energy IPPs can make a difference in the CARI-8.** IPPs are private, grid-connected generators that sell electricity—to utilities, end users, or both—and generally do not consume it. The Solar Energy Industry Association defines utility-scale renewable generation units as those with a capacity of 1 MW or more.<sup>53</sup> This threshold appears low by international standards,<sup>54</sup> and projects with a capacity of less than 10 MW may struggle to attract private sector interest. However, 1 MW projects can still be significant in the CARI-8, given their small geographic and economic size.

**Similarly, small-size renewable distributed generation (DG) projects have the most potential in the CARI-12.** DG facilities are renewable energy installations located on a customer’s premises for commercial, industrial, or residential use.<sup>55</sup> Typical residential DG systems range from 1 kilowatt (kW) to 10 kW in capacity, while those for commercial customers range from 10 kW to 100 kW on average. DG systems for industrial customers can reach 1 MW or more. Although scale constraints make reaching this size unlikely in most CARI-12 countries,<sup>56</sup> a 1 MW wind turbine was installed at the US Navy base in the Bahamas in 2014.<sup>57</sup>

Investing in energy efficiency can help the CARI-12 reduce their energy demand, as well as the resources needed to develop renewable energy generation. The notion of energy efficiency encompasses both small-scale opportunities for savings by individuals and opportunities to make improvements at the country level. Investing in energy efficiency measures allows users to obtain the same output using less energy.<sup>58</sup>

The types of projects exemplifying the investment opportunities discussed in this analysis are shown in table 4.8.

**TABLE 4.8 TYPES OF INVESTMENT OPPORTUNITIES IN THE CARI-12**

OPPORTUNITY	TYPES OF PROJECTS
<b>Utility-scale RE</b>	<p>Solar PV plants (1 MW or greater) where land and solar resources are adequate;</p> <p>Onshore wind (1 MW or greater) where land and wind resources are adequate;</p> <p>Offshore wind in locations with shallow waters and favorable underwater terrain;</p> <p>Biomass generation from plant or animal material that can be burned as a fuel—especially relevant for sugar-producing countries (Barbados, Belize, Guyana) that can use bagasse (a residue from sugar production) as fuel;</p> <p>Run-of-river hydropower;</p> <p>Geothermal in countries with proven potential—Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines—supported by BESS.</p>
<b>Distributed generation</b>	<p>Distributed solar PV, wind, and biomass generation units in public buildings or other government-owned land, such as airports, parking garages, or schools;</p> <p>Distributed solar PV, wind, and biomass generation units for commercial and industrial customers;</p> <p>Residential solar PV systems.</p>
<b>Energy efficiency</b>	<p><b>At the individual level:</b></p> <p>Paint roofs and concrete walls with low-albedo paint (usually beige, yellow, or white to reduce solar absorption);</p> <p>Replace motors for fans, pumps, and industrial equipment with high-efficiency motors;</p> <p>Install sensors and controls to automatically turn off light fixtures and air-conditioning units;</p> <p>Replace appliances such as refrigerators, freezers, and air-conditioners with higher-efficiency models;</p> <p>Replace inefficient lighting, such as MH/HPS lighting, with LED and other energy-efficient lighting;</p> <p>Install ceiling fans to reduce the use of high-energy air conditioning.</p> <p><b>At the country level:</b></p> <p>Install efficient streetlights, such as those based on LEDs;</p> <p>Roll out smart meters to reduce commercial losses on the grid.</p>

Note: Offshore wind potential requires detailed technical analysis to determine which sites are suitable. Barbados and Trinidad and Tobago have conducted preliminary studies showing potential. See “Ocean Energy Being Considered for Barbados” (Official Website of the Barbados Government), <https://energy.gov.bb/ocean-energy-being-considered-for-barbados/>; 4C Offshore, “Trinidad and Tobago to Investigate Offshore Wind” (2021). However, since such potential has not been widely studied across the CARI-12, this assessment focuses on onshore wind projects. Similarly, the technical or commercial viability of utility-scale floating solar has not been studied in detail in the CARI-12, and this niche is therefore not considered viable for the private sector in the near term. BESS = battery energy storage systems; MH/HPS = metal-halide and high-pressure sodium; MW = megawatt; PV = photovoltaic; LED = light-emitting diode; RE = renewable energy.

**In the CARI-4, where land is abundant, wind and solar IPPs can help increase the share of renewables in the generation mix.** There are also opportunities to develop DG and energy efficiency projects, but incentives to using fossil fuels may constrain them. In countries where such subsidies exist, such as Suriname and Trinidad and Tobago, investments in DG and energy efficiency are less attractive commercially, as fuel costs and retail electricity tariffs are already low.

**In the CARI-8, energy efficiency and renewable DG projects for residential, public sector, commercial, and industrial customers offer more opportunities in the short term than utility-scale renewable IPPs because of constraints around scale and availability of land.** Small, interconnected DG systems can overcome the barrier of land scarcity. International experience shows that if appropriate incentives are in place—such as enabling regulation and establishing high tariffs for purchases of electricity from the general population—citizens will be quick to take advantage of the cost savings offered by DG. Barbados, for example, has recently issued more than 250 licenses for DG, building on clear regulation and feed-in tariffs. Outside of the CARI-12, Jamaica has also had initial success with DG, developing a net-billing program that has significantly boosted DG capacity.

**Opportunities for utility-scale projects may still exist in the CARI-8, particularly for geothermal energy.** In Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines, geothermal resources can provide clean, dispatchable power. Dominica and St. Kitts and Nevis have proved geothermal resources to be verified via test drilling, but there is potential for private sector investment in the remaining countries as well, using a variety of financial tools as appropriate—that is, risk and exploratory capital, equity, and debt financing.

### **Constraints to Renewable Energy Uptake**

**Several barriers have so far prevented the CARI-12 countries from attracting meaningful investments.** Such barriers are often ingrained and structural and have more than offset the many incentives to renewable energy investment in the region—such as high tariffs and bold generation targets. This section describes and evaluates barriers to the development of renewable energy in the CARI-12, the effect of each barrier, and how the barriers affect investment in renewable energy. The barriers can be broken down into technical and physical, commercial, policy and regulatory, and institutional. Some barriers, like scale and land availability, are virtually insurmountable, while others, like technical capacity of workforce and offtaker creditworthiness, can be overcome, usually involving additional cost. Long-term system planning (for infrastructure and cost-recovery tariffs), grid integration and stability, and consistent rules and policies for transaction models are key constraints that, if removed, can make a difference. Table 4.9 outlines the prevalence of such constraints in each of the CARI-12 countries. Each barrier is examined in more detail in the following sections.

**TABLE 4.9 OVERVIEW OF BARRIERS TO RENEWABLE ENERGY UPTAKE, BY COUNTRY**

		Belize	GUYANA	SURINAME	TTO	ANTIGUA AND BARBUDA	THE BAHAMAS	BARBADOS	DOMINICA	GRENADA	ST. KITTS AND NEVIS	SAINT LUCIA	VCT
Technical and physical	Scale	Major	Major	Major	Major	Minor	Major	Minor	Major	Major	Minor	Major	Major
	Land availability	Major	Major	Major	Major	Minor	Major	Minor	Major	Major	Minor	Major	Major
	Long-term system planning	Minor	Major	Major	Major	Minor	Major	Minor	Minor	Major	Major	Minor	Minor
	System losses and grid reliability	Minor	Major	Major	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Technical capacity of workforce	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Commercial	Contractual structures <sup>a</sup>	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Financing <sup>a</sup>	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Offtaker creditworthiness	Major	Major	Major	Major	Major	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Policy and regulatory	Independent regulation	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Legal or regulatory frameworks <sup>b</sup>	Major	Minor	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Major	Major
	Licenses and permits	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Procurement	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Unrealistic/ineffective RE targets	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Institutional	Political will/government action	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor	Minor
	Technical capacity for RE procurement, structuring, and development	Major	Major	Major	Minor	Major	Minor	Minor	Minor	Major	Major	Major	Major

Major barrier, often insurmountable    Notable barrier, but surmountable    Minor barrier

a. Financing and contractual challenges are associated with specific projects, rather than individual countries. The availability of financing depends on each project's fundamentals, such as risk allocation, creditworthiness, and financial viability.

b. Several countries have legislation that could enhance RE penetration, although others—such as Saint Lucia—do not. The main issue in the region concerns delays in introducing the implementing regulation and procedures.

RE = renewable energy; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

## Technical and Physical Barriers

### **Constraints to Scale and Land Availability**

Relatively low demand for electricity limits opportunities to develop large generation projects that could create economies of scale, drive down costs, and deliver more affordable energy to customers. Moreover, smaller-scale projects can be prohibitively expensive, as the transaction costs for project development are often fixed. The logistical challenges of building on small islands add to capital and operating costs. For example, a geothermal project in St. Vincent and the Grenadines required construction of a new road to transport equipment up the slopes of the Soufriere volcano.<sup>59</sup> In addition, the CARI-8 countries are geographically small and some are mountainous, limiting the availability of land (particularly for utility-scale solar PV and wind projects), while vulnerability to natural hazards rules out many potential sites. Stakeholders interviewed for this RPSD deemed land availability to be a major impediment in Barbados, Grenada, and Saint Lucia, where considerations about food security and tourism development intensify competition for land.<sup>60</sup> Moreover, geography and logistics complicate accessing securable land for project development and maintenance, which further raises costs.

**The scarcity of land in the CARI-8 entails tradeoffs around its use and fosters ‘not in my backyard’ attitudes among certain stakeholders.** Renewable energy projects, particularly wind turbines, can be contentious—especially within the tourism sector—due to a perception that they are visually unappealing. Offshore wind also faces geographic constraints: mobilizing cranes for maintenance of offshore turbines can be difficult and time consuming and, in parts of the Caribbean, the steepness of the oceanic shelf makes anchoring offshore wind turbines prohibitively expensive.

**Property rights in the CARI-12 are often difficult to navigate, hampering the ability of IPPs to secure land.** According to the 2022 Index of Economic Freedom, property rights are relatively stronger and better enforced in Barbados, Dominica, and Saint Lucia. In other countries—especially Belize, Guyana, and Suriname—property rights are weaker and their enforcement can be lax and time consuming, bogged down by inefficient court systems.<sup>61</sup> Stakeholders interviewed for this RPSD suggested that governments in the region could better support the availability of land for renewable energy projects, citing the positive examples set by the governments of Aruba and Guadeloupe. They also suggested establishing incentives, such as tax breaks, to promote the use of all available land.

**Rezoning can increase the availability of land.** Interviewees noted that certain areas with limited potential for alternative use—such as the flatlands in Saint Lucia and land near prisons across the region—could be rezoned and made available for renewable energy projects. Further, a dual-use, 13MW solar and agricultural project is being explored in Barbados, with a goal of it becoming operational in 2025. The project would be located on a large sheep farm, which can be accommodated for renewable power generation alongside sheep grazing and grass harvesting.<sup>62</sup>

### **Absence of Long-Term Systematic Planning**

Long-term systematic planning about renewable energy—especially in the form of integrated resource plans (IRPs)—is lacking in the region, increasing uncertainty for private investors. Countries such as the Bahamas, Grenada, St. Kitts and Nevis, Suriname, and Trinidad and Tobago have not developed long-term systematic planning. The publication of IRPs, combined with appropriate and effective regulation, would help market participants plan more effectively for investments in renewable energy. Private developers interviewed for this RPSD considered an IRP—which communicates applicable policies clearly and consistently—an “incredibly helpful” resource. In the absence of an overall development roadmap for the electricity and renewable energy sectors, projects are launched haphazardly, often in response to unsolicited proposals from private investors. Public IRPs and better regulation would facilitate investment in modernizing the grid, allowing for the integration of DG and creating awareness among consumers about self-generation opportunities.

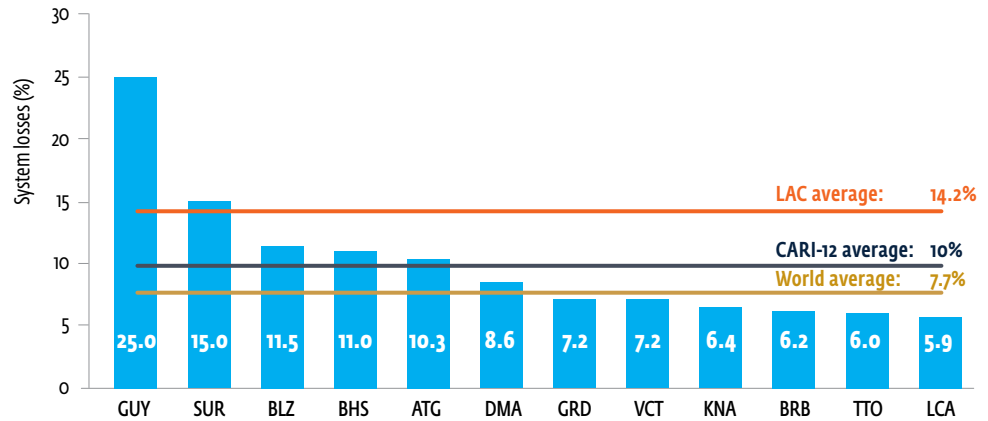
### **Challenges to Grid Integration and Reliability**

From a technical perspective, the electric grids in many CARI-12 countries cannot withstand increased inputs of variable renewable energy (vRE).<sup>63</sup> Managing vRE loads will require not only detailed technical regulation of topics such as interconnection and billing and metering but, in most cases, upgrades to the grids themselves, with capital investments into additional transmission lines, switchgear, and other infrastructure. At the same time, private investors may be deterred from developing vRE if the grid cannot meet technical standards of reliability. In addition, the intermittency of vRE sources, such as solar PV and wind, entails the need to back them up with fast-acting reserves to maintain grid stability. Such reserves include conventional thermal spinning reserves, which can run on continuously burning fuel oil, hydropower, battery storage, or other technologies.

**Integration studies can mitigate vRE risks.** A vRE integration study aims to establish the limits to vRE penetration, how fast-acting reserves and other measures can alter such limits, and attendant cost implications. vRE integration studies help determine what grid investments will be necessary to achieve the optimal amount of renewable generation and ensure system stability. vRE integration studies are often part of IRPs, to plan for the grid investments needed to support additional generation capacity. Certain countries, such as Antigua and Barbuda and Barbados, have published stand-alone vRE studies.<sup>64</sup>

**High commercial and technical losses, especially in Guyana and Suriname, further complicate privately financed renewable energy projects.** Average electricity losses in the CARI-12 amounted to 10 percent in 2020—versus 14.2 percent in Latin America and the Caribbean and 7.7 percent globally in 2019—but peaked at 25 percent in Guyana (figure 4.18).<sup>65</sup> Although system losses are not major in most of the CARI-12, local networks need investment to accommodate new renewable energy intake.



**FIGURE 4.18 COMPARING ELECTRICITY LOSSES IN THE CARI-12**

Source: Energy Report Cards, CCREEE

Note: World average is from 2019, all other data are from 2020. ATG = Antigua and Barbuda; BHS = the Bahamas; BRB = Barbados; BLZ = Belize; DMA = Dominica; GRD = Grenada; GUY = Guyana; KNA = St. Kitts and Nevis; LCA = Saint Lucia; SUR = Suriname; TTO = Trinidad and Tobago; VCT = St. Vincent and the Grenadines.

### ***Lack of Skilled Workforce and Capacity in Procuring, Structuring, and Developing Renewable Energy***

Shortages of trained local workforces substantially increase delays and costs when constructing and operating renewable energy projects. Simple technical support services, such as rewinding a motor, can require weeks, and even longer if relevant parts and equipment need to be imported. To offer another example, maintaining wind turbines is a highly specialized trade; in emerging renewable energy markets such as the CARI-12, it is necessary to resort to international recruitment, offering salaries and benefits much higher than local averages. Forward-looking operators invest in training technical and engineering staff members through on-the-job inductions, internal and external workshops, financial support for attending technical schools, and even university scholarships.

CARI-12 governments frequently lack the technical capacity to plan and procure IPPs, they must rely on regulators and utilities for it, and they do not have the resources to hire qualified external advisors. Ministries and agencies are often underfunded and understaffed—with technical specialists in particularly short supply—and they struggle to retain institutional knowledge. Low wages prompt employees to leave for better-paid roles once they have acquired sufficient expertise, taking their knowledge and experience with them. Furthermore, responsibilities relevant to developing renewable energy projects are often spread across ministries and units, with poor coordination between them. Constraints to government capacity and expertise often result in inadequately prepared projects, flawed procurement processes, and insufficient

data and documentation. Our interviews suggest that a lack of technical capacity is a major barrier to procuring, structuring, and developing renewable energy in Trinidad and Tobago. In Saint Lucia, public stakeholders called for additional resources, such as more staff members, to boost renewable energy development. Interviewees from regional multilateral development organizations voiced a similar view, noting that poor technical capacity is a major barrier throughout the region.

## Commercial Barriers

### ***Inadequate Risk Allocation in Business Models and Contractual Structures***

Prevailing business models, contractual structures, and diverging expectations hinder the attraction of private finance and the scalability of renewable energy projects in the CARI-12. Small projects are burdened by high per-unit costs, particularly for technical expenses and overhead, which are compounded by operation in untested environments. The Windwatt project in Nevis was deemed viable while offering as little as 2 MW of capacity, but it had specific features that are not easily replicable.<sup>66</sup> In addition, differing expectations between private and public players hamper the start of new projects. Negotiating and structuring power purchase agreements (PPAs) and other transaction documents is often costly and time consuming. Two key barriers are (a) poor capacity within governments and (b) their lack of resources to engage qualified external advisers. Public officials and their political administrators often have little experience with and appreciation of commercial business practices. In the interviews conducted for this RPSD, the disconnect between how governments and private sector players rate the capabilities of the public sector emerged as a recurring theme.

Barriers specific to geothermal projects exist in Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, and St. Vincent and the Grenadines. Geothermal projects require preliminary drilling for exploration and reservoir assessment, with high up-front costs and major uncertainty about outcomes. Although financial instruments exist to mitigate related risks—such as drill risk insurance—they are prohibitively expensive relative to the scale of the projects that could be viable in the region. Multilateral development banks do offer de-risking instruments such as the Caribbean Development Bank’s conditionally recoverable grant, which was extended to St. Vincent Geothermal.

### ***Financial Challenges and Poor Offtaker Creditworthiness***

Although financing is generally not a challenge for utility-scale projects, it can be for DG. The costs of financing DG are often prohibitive. DG customers are usually small, such as households or small businesses, and their risk profile in the CARI-12—especially among those with low incomes—leads to unaffordable borrowing rates for DG projects. Large commercial electricity consumers, such as hotels, are often highly leveraged and are even more so after the financial distress caused by the pandemic and ensuing decline in tourism. Despite the short payback period for most DG installations, commercial banks in the CARI-12 region do not consider their specificities, nor do they offer tailored financing instruments. Multilateral development banks, on the other hand, can provide avenues of financing to private businesses and households for investment into renewable DG and energy efficiency (see box 4.6).<sup>67</sup>

#### BOX 4.6 BARBADOS'S ENERGY SMART FUND: AN INNOVATIVE APPROACH TO ENERGY EFFICIENCY AND RENEWABLE DISTRIBUTED GENERATION

Since 2011, the Inter-American Development Bank (IDB)-funded Smart Fund in Barbados has provided US\$10.6 million through a combination of financial instruments and technical assistance for energy efficiency and renewable energy measures. Projects supported by the Smart Fund have saved an estimated 4 gigawatt-hours annually and added 1.9 megawatts of installed renewable energy capacity. The Smart Fund's five core financing mechanisms can be adapted in other CARI-12 countries. They are the following:

- Technical assistance facility: provides grants for pre-investment audits and studies. Twenty-eight grants have been approved through the Smart Fund so far.
- Energy efficiency retrofit and renewable energy finance facility: provides concessional financing to implement projects that are financially and technically viable. Twenty-two loan requests have been approved, for a combined US\$8 million.
- Pilot consumer finance facility provides interest-rate or purchase-price rebates to retailers that have experience in "hire-purchase" and that sell renewable energy and energy efficiency equipment. This allows retailers to offer customers lower interest rates or prices. More than 2,500 households have benefited from rebates in Barbados.
- Energy efficiency lighting distribution facility provides grants to selected retailers to purchase energy-efficient lights and distribute them to residential customers, using a voucher system. This has facilitated the distribution of more than 30,000 lights.
- Discretionary grant facility provides institutional support to Smart Fund operations. It has led a nationwide media awareness campaign and has conducted external energy evaluations and audits in Barbados.

Source: Castalia, "Barbados' Energy Smart Fund: An Innovative Approach for Distributed Renewable Energy and Energy Efficiency in Developing Countries" (2019).

**In Suriname and Trinidad and Tobago, highly subsidized electricity tariffs discourage private finance, as investors question the long-term sustainability of subsidized sectors.** In addition, local utilities have no incentive to consider alternative generation options. For example, delays to the BP and Lightsource solar project in Trinidad and Tobago<sup>68</sup> may stem from financing challenges linked to the country's low retail tariff. At less than US\$0.06 per kWh, such a tariff may be lower than the PPA tariff paid to the developer by the state-owned utility, T&TEC.

**Government-owned utilities in the region underperform on several fronts, reflecting on their creditworthiness.** Only 4 of the 14 main utilities in the CARI-12 are privately owned and operated. Publicly owned utilities suffer from relatively poor operational and financial performance, as shown by their higher system losses, and are typically supported by governments that are themselves in financial distress. System losses for public utilities in the CARI-12 average 14.5 percent, compared with 6.6 percent for privately owned utilities. For example, the Trinidad and Tobago Electricity Commission has not made a profit in at least nine years.<sup>69</sup> From an operational perspective, as of 2020, one-third of the Bahamas Power & Light's generation capacity on Family Island was at or beyond the end of its life, as revealed by an Inter-American Development Bank report.<sup>70</sup> Projects can be successful despite poor offtaker creditworthiness if appropriate risk-mitigating measures are implemented—and despite the added time, complexity, and expenses that these entail (see box 4.7).

**BOX 4.7 MEASURES CAN MITIGATE POOR OFFTAKER CREDITWORTHINESS****Risk mitigating measures include the following:**

**Political commitment**, communicated and secured through government guarantees of payments. Such guarantees, however, are not a cure-all, especially when a government is facing its own fiscal challenges.

**Credit enhancement mechanisms** in the form of partial risk guarantees, political-risk insurance, concessional finance, and first-loss facilities. Partial risk guarantees shield private investors from certain risks, such as default, currency inconvertibility, force majeure, and government payment obligations.

**Financial security measures that improve liquidity and ensure revenue flow**, such as escrow accounts and cash waterfall mechanisms. For example, creditors who are the beneficiaries of escrow accounts receive priority in debt servicing, which offers extra security. In cash waterfall mechanisms, independent power producers receive payment before the utility does. Although these mechanisms are attractive to investors, they are often unacceptable for utilities, because they reduce managerial control and deprive them of revenues from some of their best customers.

Source: Castalia/World Bank elaboration.

**Policy and Regulatory Barriers*****Lack of Independent Regulation and Unclear and Inconsistent Rules***

Many jurisdictions in the CARI-12 lack independent and transparent regulation. In certain jurisdictions, the separation between regulatory bodies and utilities is insufficient, while others lack a regulatory body altogether. In St. Vincent and the Grenadines, for example, the regulator is not independent from the government. Across the region, certain stakeholders feel that regulatory decisions are not sufficiently transparent and are subject to government influence. Regulators in the CARI-12 often act in support of utilities, rather than regulating them. Such a stance dissuades investment, as private sector players worry that regulatory decisions will privilege utilities over economic fundamentals. In addition, rules around participation in the energy sector, including the methodology for setting tariffs, are often unclear and energy plans, laws, and regulations are frequently outdated.<sup>71</sup> There has been progress in certain countries; for example, Grenada recently enacted regulations about tariff-setting methodologies and IPP procurement. Integrated resource plans are necessary to encourage participation in the renewable energy sector, disclosing to investors projections for future electricity demand and relevant planning by utilities. The absence of IRPs leaves gaps in the framework for DG and electric vehicles—such as the lack of net metering or net billing in certain countries.

**Poor or nonexistent regulation is especially damaging to the uptake of DG.** Most jurisdictions within the CARI-12 have, at best, outdated and often nonexistent regulation to support the adoption of renewable energy technologies, such as the addition of vRE loads and battery storage capacity to the grid. Some countries, such as Belize and Trinidad and Tobago, lack clear regulation to enable the scale-up of DG, while others have major gaps in the allocation of responsibility for IPP procurement. In Belize, for example, there are no provisions specifying how any subject may connect to the grid, in any manner. Barbados, Guyana, and St. Vincent and the Grenadines have net billing and metering regimes but lack a broader spectrum of detailed technical rules on topics including interconnection loads and locations, system stability, and safety.

**Utilities might influence regulators to discourage the growth of DG.** More vRE, in the form of distributed solar or wind projects, can strain the grid and require increased investment in infrastructure and backup generators, while taking customers away from utilities. Thus, utilities may pressure regulators not to adopt net-billing or metering regimes that would boost DG uptake. In theory, independent regulators would set clear rules to allow net billing and DG investment, while also enabling utilities to recover costs incurred from DG uptake and invest in the grid. However, in jurisdictions where utilities have influence over regulators, they can apply pressure to maintain the status quo.

**An appropriate legislative framework is key to implementing renewable energy regulation.** Sectoral regulation can be undermined by a deficient legislative framework around it, such as in Dominica. Countries including Grenada, on the other hand, have a strong legislative basis, which enables them to implement DG regulation and integrate it into a broader framework—covering regulation of final tariffs and standards of service, as well as planning and procurement of generation capacity and wholesale power.

#### ***Inefficient Procurement Processes***

**Public procurement processes are often unclear, discouraging larger developers from bidding.** CARI-12 governments often issue requests for proposals and other project documents that lack detail and clarity, provide insufficient data, and fail to address key questions and risks. All private renewable energy developers interviewed for this RPSD noted that governments in the region usually go to market with ill-prepared projects, which fail to attract widespread interest. Requests for proposals are often unclear, timetables are unattainable, and major risks are undefined. This often causes significant project delays, which efficient private developers are wary of. Although usually considered more creditworthy than publicly owned utilities, privately owned utilities typically have less influence over the procurement of new generation capacity, which requires extensive coordination with government entities. Interviewees from privately owned utilities cited examples of governments pressuring or directing utilities to purchase power from certain producers or projects, regardless of consistency with least-cost criteria.

#### ***Lack of Realistic or Effective Renewable Energy Targets and Political Will for Private Sector Participation***

**Unrealistic renewable energy targets damage the credibility of regional governments with private investors, both domestic and foreign.** In addition, governments often allocate inadequate fiscal resources, which do not back up, or outright contradict, their overly ambitious commitments. Private and public sector interviewees complained about scarce technical capacity among project-implementing agencies and their governments' failure to allocate sufficient funding. On the other hand, public officials may show little confidence in the commitment of foreign investors, whose failures can reflect poorly on their government's reputation. Public authorities may treat even reliable investors with suspicion because of negative past experiences with other private sector players.

**Many CARI-12 jurisdictions lack policies and effective political will to encourage private participation in infrastructure development.** Governments have set bold targets for renewable energy but failed to allocate clear responsibility for meeting them. Although, in principle, governments are responsible for developing and implementing their NDCs, effective leadership and coordination among relevant entities have been lacking. Political sponsors with real authority must commit to pushing through sectoral reforms and to ensuring that relevant ministries, departments, and agencies (MDAs) are staffed and resourced to deliver on renewable energy goals. Changes in policy across administrations further complicate the outlook. Investors may hesitate to invest in projects that require political support if they believe that public policy may change dramatically from one administration to the next.

## Roadmap to increasing private sector opportunities in the CARI-12

### Direct Private Sector Investment

In the CARI-12 countries where more land is available—Belize, Guyana, Suriname, and Trinidad and Tobago—utility-scale renewable energy projects are feasible, in the absence of fuel subsidies. In the short term, utility-scale renewable energy IPPs are most likely to be viable in Belize and Guyana, which have a track record with biomass IPPs.<sup>72</sup> Suriname and Trinidad and Tobago would be viable options too, if their electricity sectors became more sustainable—starting with eliminating fossil fuel subsidies and setting cost-reflective tariffs. Energy efficiency, on the other hand, does not depend on land availability and needs to be pursued in all countries.

In the smaller CARI-12 countries, private sector investment in renewable DG and energy efficiency measures is more likely to be viable in the short term. In these countries, the private sector should focus on proven business models that can be implemented quickly and at a comparatively low cost. For example, private investments can fund smaller, interconnected DG systems within government buildings (including on their rooftops and in car parks), airports, and other government-owned land. Successful investments will help build the market and provide price signals, reducing transaction costs in the medium and long term, and eventually opening the market for larger, utility-scale renewable projects (see box 4.8).

### BOX 4.8 SOLAR PARKS AT AIRPORTS

Airport solar projects must be carefully located so as not to create hazards by reflecting light to air traffic control towers or planes, or by interfering with air traffic control equipment. Governments and developers may draw on the United States Federal Aviation Administration Policy, Review of Solar Energy System Projects on Federally-Obligated Airports, to reduce risks to airport safety from solar photovoltaic (PV) on airport land or buildings.

Although not in the CARI-12, Bermuda boasts a successful privately financed solar PV project at the island's main airport. In 2018, the utility Bermuda Electric Light Company Limited signed a power-purchasing agreement with Canadian developer Saturn Power Inc., for the country's first utility-scale renewable energy independent power producer: a 6 megawatt solar PV plant at L.F. Wade International Airport. After some delays, the plant began operations at the end of 2021, demonstrating the viability of such projects in the region and employing a local workforce for construction, operations, and maintenance.

Source: United States Federal Register.

Despite the need for regulatory reform to expand them, opportunities to scale up DG and energy efficiency initiatives already exist. Reforms to the technical, regulatory, and policy frameworks in the CARI-12 hinge on institutional and technical capacity, which need time to develop. However, commercial and industrial customers, as well as hotels, present opportunities to scale up DG and energy efficiency initiatives in the short term. Leasing and energy service company (ESCO) models, which reduce the need for up-front financing, may also expand the market for DG and energy efficiency by making equipment more accessible to low-income customers.<sup>73</sup> Under such arrangements, an ESCO is contracted by public or private players to finance energy efficiency investments. It guarantees a pre-established level of energy savings and is paid on the basis of the total energy saved as a result of its activities. Typically, ESCOs are responsible for conducting energy efficiency audits, planning, implementing saving measures, managing and financing the project, and monitoring savings. Internationally, ESCOs have been effective for streetlighting retrofits: streetlighting can account for a significant portion of public electricity use and costs, making it a prime opportunity for energy efficiency measures.

### Government Reforms to Support Private Investment

#### *Expand use of existing government assets and pool resources across the region*

Governments across the CARI-12 are major landowners in both urban and rural locations and can facilitate DG expansion. Governments could explore the suitability of their unused lands or rooftops for wind and solar projects. Where these are viable, governments could make land available to renewable energy developers. A model that draws on IFC's Scaling Solar program could be attractive, as it reduces transaction costs for projects that cannot benefit from economies of scale (box 4.9). Standardized tender processes and transaction documents would also reduce certain transaction costs, although it is difficult to cut expenses on project development and technical, legal, or financial analysis without compromising outcomes.

#### BOX 4.9 IFC'S SCALING SOLAR PROGRAM

IFC's Scaling Solar Program is a one-stop shop offering comprehensive World Bank Group services to deliver competitively priced solar energy from private independent power producers, within as little as two years from project launch. To achieve this, the program provides participating governments with thorough project preparation and structuring support, and developers with certainty of process, low transaction costs, robust and bankable project documentation, and de-risking solutions.

Scaling Solar offers multiple World Bank Group investment and advisory services within a single package, covering technical advice to identify and define projects, assess their size and location, and prepare the selected sites; simple and rapid tender management; fully developed templates of bankable project documents, designed to reduce negotiation and speed up financing; stapled financing on competitive terms; risk-management products; blended finance; credit enhancement in the form of partial guarantees (World Bank); and political-risk insurance (Multilateral Investment Guarantee Agency [MIGA]).

Source: IFC, "Scaling Solar: The Complete Package."

**Bundled investment projects across OECS countries could achieve scale and reduce costs in the long term.**<sup>74</sup> For example, an undersea interconnection between the OECS states would allow for geothermal energy to meet more demand. Another initiative could focus on joint offshore wind exploration between Saint Lucia and St. Vincent and the Grenadines. However, although bundling projects across countries to increase scale is attractive in principle, practical experience shows that it is difficult, as it calls for a high degree of coordination as well as legislative and regulatory harmonization.

#### ***Prepare long-term system plans***

The CARI-12 will benefit from better understanding their range of renewable sources, as well as how to optimize sector performance. Resource assessments are the first step toward identifying the most promising renewable sources available, based on climate, terrain, and other conditions specific to each country. Utilities and project developers use resource assessments to estimate the potential of different generation options and to determine the ideal location and technical specifications for each project. In Dominica, for example, successful exploratory drilling for geothermal potential has led to securing a developer for a 7 MW geothermal plant and to attracting climate finance from international development banks.

**Drawing on resource assessments, countries can prepare IRPs to determine their generation mix.** IRPs provide roadmaps to meet expected electricity demand in the most cost-effective way. They also help utilities develop investment plans over a 10- to 20-year period, and they set expectations for renewable energy goals. As part of the IRPs, vRE integration studies help determine the grid investments needed to achieve the optimal amount of renewable generation and ensure system stability. Policy makers can use resource studies and IRPs to inform policy decisions and set reasonable renewable energy targets, which should incentivize development of new capacity and clearly signal the governments' goals—thus building credibility in the market.

**The CARI-12 countries need to use national geographic information systems (GIS) to integrate climate resilience measures into the early stages of system planning.** Spatial planning tools such as GIS help draw vulnerability maps to manage climate risks and limit the construction of infrastructure in vulnerable areas. Spatial studies are of particular interest to potential private investors, who wish to safeguard their projects from climate risks.

#### ***Modernize the policy and regulatory environments***

**Modernizing the policy and regulatory frameworks is essential for enabling private sector investment in renewables and energy efficiency.** Utilities also need to adapt to new business models and to the emergence of renewables and DG as major components of the generation mix. Such efforts can be managed through a regional program—such as at the OECS level—or on a country-by-country basis, with the latter option likely more practical in the short term. National energy policies should be updated to reflect current challenges and to ensure a practical and realistic approach to meeting them. Enhancing the resilience of electricity infrastructure and services is a major policy issue across the region, while creating IPPs needs to be allowed in countries that have not yet allowed it, such as Saint Lucia.



Lack of independent regulation, poor or nonexistent regulation of DG, and insufficient fiscal incentives are all barriers to renewables development in the CARI-12. Research has shown that policy tools are major determinants of the levels of investment in renewable energy technologies.<sup>75</sup> Table 4.10 summarizes recommendations to increase private sector investment in renewable energy and energy efficiency in the CARI-12. Short-term recommendations (to be implemented within one to two years) do not entail major regulatory or legal change and could rapidly open opportunities for the private sector. On the other hand, medium- and long-term recommendations (to be implemented within three to five years) require greater coordination and cooperation between the public and private sectors. The recommendations also indicate the potential for regional collaboration, where possible, given the small size and limited scale and resources of the CARI-12.

**TABLE 4.10 OVERVIEW OF RECOMMENDATIONS TO SUPPORT PRIVATE INVESTMENT IN RENEWABLE ENERGY, DISTRIBUTED GENERATION, AND ENERGY EFFICIENCY**

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Standardize and apply replicable transaction models that account for country-specific barriers</b>			
<b>Develop replicable transaction models for utility-scale IPPs</b>	Develop models that reduce transaction and development costs for replicable projects. Elements that could be standardized include contracts, procurement models, tender documents, and security packages.	Short to medium term	National
<b>Replicate successful business models for DG and energy efficiency</b>	Draw on successful business models for DG and energy efficiency at the national or regional levels—such as the Barbados Smart Fund—to better serve small-scale customers.	Medium term	National/regional
<b>Focus on DG and energy efficiency in land-constrained countries</b>			
<b>Implement audits and energy efficiency retrofits for public sector facilities</b>	Undertake audits to identify energy-saving opportunities and implement retrofits at public facilities. Enact energy efficiency-focused, performance-based contracting schemes with energy service companies.	Short term	National
<b>Improve system planning and grid infrastructure capacity to integrate renewable energy and climate resilience</b>			
<b>Develop/update and publish integrated resource plans</b>	Develop and publish IRPs to prepare for future electricity demands, including expected grid investment, to inform the private sector and policy makers.	Medium term	National/regional
	Undertake variable renewable energy integration studies to determine the grid investments needed to achieve both the optimal amount of renewable generation and system stability. Develop vulnerability maps to manage climate risks.	Medium term	National/regional

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Modernize the policy and regulatory environments</b>			
<b>Establish/amend regulation to meet the needs of investors and utilities, such as sectoral laws and regulations</b>	Develop regulation to promote the uptake of DG for residential and commercial and industrial customers, especially in the CARI-8 where land is scarce. For example, review and upgrade sectoral laws and regulations—and enact new ones if necessary—to account for new business models for renewable energy and energy efficiency.	Medium term	National/ regional
<b>Improve procedures for IPP concessions</b>	Make procedures more streamlined, transparent, and competitive to support private investment in renewable energy.	Medium term	Regional
<b>Set cost-recovery tariffs</b>	Allow utilities to set cost-recovery tariffs that enable them to maintain grid infrastructure, and to invest to accommodate a large uptake of vRE.	Short to medium term	National
<b>Ensure IPPs can acquire land in a time- and cost-effective manner</b>	Expedite land concessions and leases for publicly owned land and develop less complex, more transparent processes to transfer or lease privately owned land.	Medium term	National
<b>Amend grid codes and interconnection agreements</b>	Where necessary, grid codes and interconnection agreements should be amended to account for greater uptake of renewable energy, especially vRE.	Medium term	Regional
<b>Adopt new capacity-building tools</b>			
<b>Develop public sector secondments</b>	Embed high-performing employees of governments, utilities, and regulators within specialist departments at MDBs for extended periods of time, offering them access to knowledge built on practical transaction experience.	Medium term	Regional
<b>Ensure institutional capacity for changing business models</b>	Build capacity at MDAs, utilities, and regulators to boost transition to new electricity sector business models.	Medium term	National/ regional

RECOMMENDATION	DESCRIPTION	TIMELINE	AUTHORITY
<b>Improve the technical environment</b>			
<b>Invest in grid stability</b>	Invest in grid stability, including firm power capacity or fast-acting reserves such as spinning reserves and battery-energy storage systems, as well as other infrastructure that can support distributed energy.	Medium term	National
<b>Bundle infrastructure</b>	Exploit opportunities for shared infrastructure or bundling of renewable energy projects across countries to achieve economies of scale and reduce costs.	Medium term	Regional/ subregional
<b>Improve institutional framework</b>			
<b>Clarify roles of government agencies and offer political support</b>	Clearly define roles and responsibilities of government agencies regarding renewable energy policy, regulation, and procurement. Establish a political sponsor and provide adequate fiscal resources for agencies to meet their renewable energy and energy efficiency responsibilities.	Medium term	National

Note: CARI-8 = Antigua and Barbuda, the Bahamas, Barbados, Dominica, Grenada, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines; DG = distributed generation; IPP = independent power producer; MDA = Ministries, departments, and agencies; MDB = multilateral development bank; vRE = variable renewable energy.

## Notes

1. C&W Networks operates in the Bahamas under the Bahamas Telecommunications Company brand, and in its other markets under the Flow brand, while Digicel does not use a separate brand.
2. See information about the projects at the following sites: <https://gigaconnect.org/>; <https://gigaconnect.org/wp-content/uploads/2021/01/NEW-Case-Study-CARCIP.pdf>; and <https://www.telesur.sr/tnbp/>.
3. The Broadband Commission for Sustainable Development has set an affordable price goal for both mobile- and fixed-broadband in developing countries: less than 2 percent of GNI per capita by 2025. See a fact sheet at <https://broadbandcommission.org/Documents/publications/wef2018.pdf>.
4. Mobile towers in the region tend to be connected to the core network through wireless rather than wired technologies (such as fiber-optic cables), limiting their ability to deliver on their speed potential. For example, a 4G antenna linked to the core network via fiber can provide speeds of over 100 Mbps to all users connected to it, while one linked through wireless technologies (such as microwave) may deliver less than half that speed to each user.
5. In 2019, Hurricane Dorian inflicted an estimated US\$97.6 million worth of damage to telecommunications infrastructure in the Bahamas.
6. Belize, Dominica, Guyana, and Suriname have not yet enacted legislation on cybercrime.
7. Belize, Grenada, Guyana, and Suriname do not have privacy or data-protection legislation, while relevant legislation in Barbados, Dominica, and St. Kitts and Nevis has gaps.
8. ICTPulse, "Broadband Internet Affordability: Key Findings and How the Caribbean Measures Up," November 8, 2018, <https://www.ict-pulse.com/2019/11/broadband-internet-affordability-key-findings-caribbean-measures/>.
9. The ITU Digital Skills Toolkit defines basic digital skills as those that "enable us to function at a minimum level in society," and advanced digital skills as "those needed by specialists in ICT professions such as computer programming and network management." See the toolkit on the International Telecommunication Union website, <https://www.itu.int/en/ITU-D/Digital-Inclusion/Youth-and-Children/Pages/Digital-Skills-Toolkit.aspx>. The Wiley Digital Skill Gap Index for 2021 was available for only two of the CARI-12 countries. Trinidad and Tobago received a score of 4 out of 10 with a ranking of 9th in Latin America and the Caribbean, and Guyana received a score of 3.5 with a ranking of 14th in Latin America and the Caribbean. See <https://dsgi.wiley.com/global-rankings/>.
10. Anguilla, Antigua and Barbuda, Barbados, Belize, the British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, Saint Lucia, St. Kitts and Nevis, St. Vincent and the Grenadines, Trinidad and Tobago, and Turks and Caicos Islands.
11. Cxc-Store.com, CCSLC® Digital Literacy Syllabus, Specimen Papers Mark Schemes and Key eBook (n.d.), retrieved May 13, 2022, from <https://cxc-store.com/ccslc-digital-literacy-syllabus-specimen-papers-mark-schemes-and-key-ebook.html>.
12. Cdelta.col.org., C-delta (n.d.), retrieved May 13, 2022, from <https://cdelta.col.org/>.
13. See <https://www.heritagebelize.org/digital-literacy-training>.
14. See the UWI-St. Augustine Campus, 2019/2020 annual report, [https://sta.uwi.edu/resources/documents/UWI\\_AnnualReport\\_19\\_20.pdf](https://sta.uwi.edu/resources/documents/UWI_AnnualReport_19_20.pdf).
15. See, for example, the National Data Management Authority in Guyana, <https://ndma.gov.gy/ceit/>.
16. See Avasant Foundation, <https://avasant.com/foundation/latin-america-caribbean/>.
17. CSOD partners include the Caribbean Open Institute, the SlashRoots Foundation, the Mona School of Business and Management, and Google.org. The institute has training sites in Guyana, Saint Lucia, Jamaica, the Dominican Republic, and Puerto Rico. See <https://coi-csod.org/>.
18. See the National Health Insurance Authority in the Bahamas, <https://www.nhibahamas.gov.bs/ehr/>.
19. "Electronic Medical Records Implemented in Grenada," Caribbean Medical News, May 15, 2017, <https://caribbeanmedicalnews.com/2017/05/electronic-medical-records-implemented-in-grenada/>.
20. See Central Bank van Suriname at <https://www.cbvs.sr/en/113-general-home/1688-fintech>.
21. In 2020, 12 years after the Financial Institution Act was passed, Trinidad and Tobago implemented an e-money Issuer Order, expanding the list of entities authorized to issue e-money, digital wallets, and other cashless payment options. This has allowed for debit cards, credit cards, and online payments to be accepted by several government agencies. In Barbados, the online platform EZPay+ lets citizens pay for various government services from their bank accounts via direct debit.
22. In an open banking framework, banks must make their infrastructure accessible to third-party providers through application programming interfaces (APIs), so the providers can perform transactions or check balances on behalf of an account holder.
23. The article can be seen at <https://treaty.caricom.org/article-239-undertaking/>.
24. Jurisdictions that offer specialized DFS licenses include Bangladesh, with a specific license for mobile money and a special group of e-money providers that cannot handle cash transactions but can offer payments from an e-money account; the European Union, which has new licensing categories for e-money and third-party payment transaction initiation; India, which has new categories of license for prepaid issuers, payment banks, and data aggregators; Indonesia, which has specific licenses for e-money and peer-to-peer lending platforms; Jordan, with new categories for e-money providers; and Mexico, where in 2018 a fintech law created specialized license categories for e-money and lending platforms.

25. Access is not explicitly reserved to banks, but two major nontechnical requirements—being subject to thorough oversight by a national authority and having a settlement account with the Central Bank of Trinidad and Tobago—can typically be met only by banks.
26. See <https://mytermfinance.com/en-CB/>.
27. Part 1: The Future of Digital ID Is Mobile—Why the Caribbean Needs to Innovate (Info. cloudcarib.com.: n.d.), retrieved May 13, 2022, from <https://info.cloudcarib.com/blog/part-one-the-future-of-digital-id-is-mobile-why-the-caribbean-needs-to-innovate>.
28. Caribbean Economic Research Team, November 2019.
29. WBG (World Bank Group), “Innovative Business Models for Expanding Fiber-Optic Networks and Closing the Access Gaps” (World Bank, Washington, DC, 2018), <https://openknowledge.worldbank.org/handle/10986/31072>.
30. For a list, see the European Commission website, <https://digital-skills-jobs.europa.eu/en/about/national-coalitions>.
31. See <https://caricom.org/virtual-launch-of-the-caricom-digital-skills-task-force/>.
32. Banks should be required to grant DFS providers access to their clients’ account information (with the clients’ consent) via dedicated interfaces (APIs) based on open standards. For example, when a bank’s client places a payment order through a mobile app developed by a fintech service provider, the client’s bank will be obliged to grant the fintech provider access to its client’s account data for the purposes of making the payment.
33. World Bank Fast Payments Toolkit, 2021, <https://fastpayments.worldbank.org/resources>.
34. At a minimum, the system should provide the following: execution of instant payments between participants (banks and nonbanks); a central addressing scheme enabling client identification via an “alias”; instant bill payments and obtaining bill information; quick response (QR) code deployment for initiation and receipt of instant payments; Application Programming Interfaces (APIs), for third-party service providers to connect and provide layover service; and remote digital-identification integration.
35. Trinidad and Tobago’s hydrocarbon sector, originally dominated by oil, shifted toward natural gas in the early 1990s.
36. IMF (International Monetary Fund), “Suriname: First Review under the Extended Arrangement under the Extended Fund Facility, and Financing Assurances Review” (IMF Country Report 22/90, IMF, Washington, DC, 2022).
37. Arnold McIntyre et al., “Caribbean Energy: Macro- Related Challenges” (IMF Working Paper WP/16/53, International Monetary Fund, Washington, DC, March 2016).
38. The percentage of firms that reported experiencing power outages is above the Latin American and Caribbean average of 59 percent in all CARI-12 countries, except Barbados (56 percent). It is higher than 80 percent in Guyana, St. Vincent and the Grenadines, Suriname, St. Kitts and Nevis, Antigua and Barbuda, Saint Lucia, and Dominica.
39. Annual losses in sales due to power outages are lower in most of the CARI-12 compared to the Latin America and Caribbean average, except for St. Kitts and Nevis and Guyana.
40. 18 percent in St. Vincent and the Grenadines, 37 percent in Dominica, 38 percent in Belize, and 60 percent in Suriname.
41. Belize and Guyana’s biomass generation accounts for 14 percent and 7 percent of their respective electricity generation mixes.
42. Electricity generation from solar accounts for 7 percent of the total in Antigua and Barbuda, 4.6 percent in Barbados, 1.5 percent in Grenada, 1 percent in Guyana, 2 percent in St. Kitts and Nevis, and 1.3 percent in St. Vincent and the Grenadines. See Energy Transitions Initiative (ETI) Energy Snapshots Reports, 2020, [www.energy.gov/sites](http://www.energy.gov/sites).
43. Alexander Ochs et al., “Caribbean Sustainable Energy Roadmap and Strategy (C-SERMS): Baseline Report and Assessment.” (Worldwatch Institute, Washington, DC, 2015).
44. Sustainable Energy for All, “The Recover Better with Sustainable Energy Guide for Caribbean Countries” (Sustainable Energy for All, Vienna, Austria, 2020).
45. This value does not include privately financed distributed generation. Based on publicly available data and the Renewable Energy Islands Database (REID), there is an estimated 9.5MW of privately financed distributed generation capacity in the CARI-12.
46. The Caribbean Center for Renewable Energy and Energy Efficiency has information on total installed capacity in CARI-12 countries but does not provide detailed data on renewable DG capacity. See <https://cekh.ccreee.org/>.
47. Suriname—ClimateScope, Bloomberg New Energy Finance, 2017, <http://2017.global-climatescope.org/en/country/suriname/#/enabling-framework>. Although this project is greater than 1MW and would thus be considered at utility scale for this analysis, it is on the site of consumption and generates electricity directly used by the mine, making it a DG facility.
48. The 10 MW Skeldon Energy Biomass Plant in Guyana is not currently operational and was therefore excluded.
49. “Applying for Interconnection to the Grid” (The Barbados Light & Power Company Limited, 2021).
50. “Decision on Feed-in-Tariffs for RE Technologies above 1 MW and up to 10 MW” (Barbados Fair Trading Commission, 2020).
51. Trinidad and Tobago’s renewable energy generation target has not been released yet officially. It is expected to be published in Q4 2022, but stakeholder interviews confirmed that it is already guiding the country’s planning.

52. Castalia, "The State of Suriname's Infrastructure: Report Submitted to the Inter-American Development Bank" (2021).
53. Clearloop, "What's the Difference Between Utility-Scale and Rooftop Solar Projects?" (2020).
54. Other sources, such as IFC, define typical utility-scale projects as 5MW or greater. IFC, "Utility Scale Solar Photovoltaic Power Plants: A Project Developer's Guide" (IFC, 2015).
55. US Environmental Protection Agency, "Distributed Generation of Electricity and Its Environmental Impacts," website last updated June 2022.
56. Lazard, "Lazard's Levelized Cost of Energy Analysis" (2020), <https://www.lazard.com/media/451419/lazards-levelized-cost-of-energy-version-140.pdf>.
57. Vergnet Group, "Successful Installation of 1MW Turbine at AUTECH US Navy Base in the Bahamas" (2014).
58. Energy Sage, "Energy efficiency 101: what is energy efficiency?" (2021).
59. Anecdotal evidence confirms that the cost of procuring, transporting, and installing large equipment in small mountainous islands can be up to twice as high as it would be in, for example, the US.
60. The land extension of the CARI-8 countries ranges from 348 square kilometers (km<sup>2</sup>) (Grenada) to 13,878 km<sup>2</sup> (the Bahamas), while in the CARI-4 it ranges from 5,130 km<sup>2</sup> (Trinidad and Tobago) to 214,969 km<sup>2</sup> (Guyana). Although the Bahamas is larger overall than Trinidad and Tobago, it is made up of over 700 islands, making it a land-scarce country. The second largest of the CARI-8 countries by land extension is Dominica, at 750 km<sup>2</sup>, but its mountainous terrain constrains land availability. On the other hand, Saint Lucia is smaller than Dominica but less mountainous and thus has more land for PV development.
61. 2022 Index of Economic Freedom, The Heritage Foundation.
62. HDF Energy, "The Project" (2020).
63. vRE sources, such as wind and solar power, are defined by their fluctuating nature.
64. General Electric, "GE Led Study Reaffirms Barbados Light & Power's Renewable Power Integration Capabilities" (2015), <https://www.ge.com/news/press-releases/ge-led-study-reaffirms-barbados-light-powers-renewable-power-integration>. IRENA (International Renewable Energy Agency), "IRENA Planning VRE Integration Case Study Antigua."
65. EIA, "Electricity–International."
66. The Nevis Windwatt project received technical support from the Organization of American States and the US Agency for International Development, with strong backing from the Nevis Island Administration (NIA). However, anecdotal evidence indicates that financing for the project came from an investor who owns property on Nevis and wished to "do something positive" for the island.
67. IDB (Inter-American Development Bank), "Barbados to Boost Renewable Energy and Energy Efficiency with IDB Support" (2019).
68. In 2020 a consortium of Shell, BP, and Lightsource was selected to build a 112 MW solar plant. However, the project faces unresolved challenges and, two years on, the parties have failed to execute the PPA or other documents.
69. "No Profits at T&TEC in Almost a Decade," Trinidad and Tobago Guardian, May 6, 2021.
70. "BPL: One-Third of Out Island Generation 'At End of Its Life'," Tribune, January 22, 2020.
71. For example, Guyana's Electricity Sector Regulations and Reform Act (1999), Antigua and Barbuda's Public Utilities Act (1973), and the Bahamas Electricity Corporation Regulations (1965).
72. Although, again, the 10 MW Skeldon Energy Biomass Plant in Guyana was no longer operational as of 2021, according to Castalia consultations with IDB in April 2021.
73. Soleco Energy has implemented successful leasing models in Jamaica.
74. Organization of Eastern Caribbean States, "Caribbean Spectrum Management Task Force" (2022).
75. Amin Shokri and Eunnyeong Heo, "Energy Policies to Promote Renewable Energy Technologies; Learning from Asian Countries Experiences" (College of Engineering at Seoul National University, Republic of Korea, 2012).

## APPENDIX A:

# NATIONALLY DETERMINED CONTRIBUTIONS IN THE CARI-12: MITIGATION MEASURES

COUNTRY	MITIGATION COMPONENT	MITIGATION OBJECTIVES/TARGETS	IMPLEMENTATION COSTS	KEY SECTORS FOR MITIGATION
Antigua and Barbuda	Yes	Specific mitigation targets and objectives	US\$1–1.7 billion (mitigation and adaptation)	Energy Transport Waste Agriculture Forestry Land use
The Bahamas	Yes	Specific mitigation targets and objectives	Not estimated	Energy Transport Forestry
Barbados	Yes	Broad targets, objectives, and programs	Not estimated <sup>1</sup>	Energy Waste Transport
Belize	Yes	Specific mitigation targets and objectives	US\$1.39 billion	Land use Forestry Agriculture Energy Waste
Dominica	Yes	Specific mitigation targets and objectives	US\$99 million	Energy Transport Manufacturing and construction Housing and infrastructure Forestry Agriculture and fisheries Waste
Grenada	Yes	Broad targets, objectives, and programs	US\$985 million–1.1 billion	Energy Forestry Waste Manufacturing and construction Agriculture Land use
Guyana	Yes	Broad targets, objectives, and programs	Not estimated	Forestry Energy

COUNTRY	MITIGATION COMPONENT	MITIGATION OBJECTIVES/TARGETS	IMPLEMENTATION COSTS	KEY SECTORS FOR MITIGATION
<b>Saint Lucia</b>	Yes	Broad targets, objectives, and programs	US\$368 million	Energy Transport
<b>St. Kitts and Nevis</b>	Yes	Specific mitigation targets and objectives	US\$707 million	Energy Transport
<b>St. Vincent and the Grenadines</b>	Yes	Specific mitigation targets and objectives	Not estimated	Energy Transport Land use Forestry
<b>Suriname</b>	Yes	Specific mitigation targets and objectives	US\$696 million (mitigation and adaptation)	Forestry Energy Agriculture Transport Housing and infrastructure
<b>Trinidad and Tobago</b>	Yes	Broad targets, objectives, and programs	US\$2 billion	Transport Energy Manufacturing and construction



## APPENDIX B:

# NATIONALLY DETERMINED CONTRIBUTIONS IN THE CARI-12: ADAPTATION MEASURES

COUNTRY	ADAPTATION COMPONENT	ADAPTATION OBJECTIVES/TRAGETS	IMPLEMENTATION COSTS	KEY SECTORS FOR MITIGATION
Antigua and Barbuda	Yes	Specific adaptation targets and objectives	US\$1–1.7 billion (mitigation and adaptation)	Energy Agriculture and food security Housing and infrastructure Water Health Education
The Bahamas	Yes	Broad targets, objectives, and programs	Not estimated	Agriculture, livestock development, and fisheries Tourism Health and well-being Housing and infrastructure Water Energy Forestry
Barbados	Yes	Broad targets, objectives, and programs	Not estimated <sup>a</sup>	Energy Industrial processes and product use Agriculture Land use, land use change, and forestry Waste Transport
Belize	Yes	Broad targets, objectives, and programs	US\$318.13 million	Coastal zone and marine resources Agriculture Fisheries and aquaculture Health Tourism Forestry and biodiversity Land use Housing and infrastructure Water

COUNTRY	ADAPTATION COMPONENT	ADAPTATION OBJECTIVES/TRAGETS	IMPLEMENTATION COSTS	KEY SECTORS FOR MITIGATION
<b>Dominica</b>	Yes	Broad targets, objectives, and programs	US\$25 million	Energy Infrastructure Agriculture and fisheries
<b>Grenada</b>	No	No	No	No sectors identified
<b>Guyana</b>	Yes	Broad targets, objectives, and programs	US\$1.6 billion	Infrastructure Forestry Land use Agriculture
<b>Saint Lucia</b>	Yes	Not set	Not estimated	Tourism Water Agriculture Fisheries Infrastructure Biodiversity and ecosystems Education Health
<b>St. Kitts and Nevis</b>	Yes	Broad targets, objectives, and programs	US\$127.14 million	Agriculture Coastal and marine ecosystems Health Tourism Water
<b>St. Vincent and the Grenadines</b>	Yes	Broad targets, objectives, and programs	Not estimated	Agriculture Tourism Coastal and marine ecosystems Water Health
<b>Suriname</b>	Yes	Broad targets, objectives, and programs	US\$696 million (mitigation and adaptation)	Infrastructure Water Land use Transport Energy Forestry Agriculture
<b>Trinidad and Tobago</b>	No	Not set	Not estimated	No sectors identified

## BOX B.1 KEY CLIMATE ACTION MEASURES IN SELECTED CARI-12 COUNTRIES

Note: For most countries, the following measures are conditional on receiving foreign aid and financing.

### Antigua and Barbuda:

- 86% renewable energy generation by 2030
- 100% new vehicle sales to be electric by 2030
- Ban on import of new internal combustion engine vehicles from 2025

### The Bahamas

- Target emissions in energy and transport
- 30% (minimum) renewables in the energy mix by 2030
- Establishment of a 20% forest estate

### Barbados

- Fossil-fuel free by 2030

### Belize

- Livestock methane emissions reduced by 10% by 2030
- 75% renewable energy generation by 2030
- 15% reduction in conventional fuel use by 2030
- End to open burning of waste and closure of municipal dumps, while implementing rural-waste management systems

### Dominica

- 98.6% reduction in greenhouse gas emissions from energy generation by 2030, harnessing geothermal resources and a solar photovoltaic conversion program targeting hotels, commerce, manufacturing, and utilities.
- Promote the import of hybrid vehicles

### Guyana

- Adopt reduced-impact logging (as timber contributes to 40% of country emissions) and reduce logging areas in favour of conservation
- 100% renewable power supply by 2025

### St. Kitts and Nevis

- 100% renewable energy generation by 2030
- Increase share of electric vehicles to at least 2%

### Suriname

- Maintains 93% of forest cover
- 17% of total land area under national protection system by 2030
- 35% of energy supply from renewable sources by 2030
- Tighten the import of vehicles older than 5 years and introduce vehicle-emission controls

## APPENDIX C:

# RENEWABLE ENERGY: LEGAL AND REGULATORY LANDSCAPE

**TABLE C.1 OVERVIEW OF THE CARI-12'S POLICY, LEGAL, AND REGULATORY FRAMEWORKS FOR PRIVATE SECTOR INVESTMENT IN RENEWABLE ENERGY**

JURISDICTION	POLICY RELEVANT TO RE	ENERGY LAW/RE LAW	REGULATIONS	IRP/SYSTEM PLANNING	INVESTMENT POLICY/LAW
<b>Antigua and Barbuda</b>	National Energy Policy, <sup>3</sup> 2011 Sustainable Energy Action Plan, <sup>4</sup> 2013	Renewable Energy Act, <sup>5</sup> 2015	The Public Utilities Act, <sup>6</sup> 1973	Planning vRE Integration Study <sup>7</sup>	Investment Climate Statements: Antigua and Barbuda, <sup>8</sup> 2019 Antigua and Barbuda Citizenship by Investment Act, <sup>9</sup> 2013
<b>The Bahamas</b>	The Bahamas National Energy Policy, <sup>10</sup> 2013	Electricity Arrangement of Sections <sup>11</sup> Electricity Act, <sup>12</sup> 2015	The Bahamas Electricity Corporation Regulations, <sup>13</sup> 1965		Investment Climate Statements: The Bahamas, <sup>14</sup> 2021 The Bahamas Investment Authority <sup>15</sup>
<b>Barbados</b>	Barbados National Energy Policy, <sup>16</sup> 2019	Electric Light and Power Act, <sup>17</sup> 2013		Integrated Resource & Resiliency Plan for Barbados, 2021 <sup>18</sup> Barbados Renewable Integration Study, 2015 <sup>19</sup>	Investment Climate Statements: Barbados, 2021 <sup>20</sup> Invest Barbados <sup>21</sup>
<b>Belize</b>	National Energy Policy Framework, 2011 <sup>22</sup>			Belize Consolidated Project Plan, 2018 <sup>23,24</sup>	Investment Climate Statements: Belize, <sup>25</sup> 2021
<b>Dominica</b>	Draft National Energy Policy of the Commonwealth of Dominica, 2014 <sup>26</sup> Distributed Renewable Energy Generation Policy, 2016 <sup>27</sup>	Electricity Supply Act <sup>28</sup>	The Commonwealth of Dominica Electricity Sector Transmission, Distribution and Supply Code <sup>29</sup>	Integrated Resource Plan 2012–2030, <sup>30,31</sup> DOMLEC Generation Expansion Assessment (IRP), 2014–33 <sup>32</sup> DOMLEC's Integrated Resource Plan and Related Five Year Investment Plan, 2015 <sup>33</sup>	Investment Climate Statements: Dominica 2021 <sup>34</sup>

JURISDICTION	POLICY RELEVANT TO RE	ENERGY LAW/RE LAW	REGULATIONS	IRP/SYSTEM PLANNING	INVESTMENT POLICY/LAW
<b>Grenada</b>	The National Energy Policy of Grenada <sup>35</sup> , 2011	Electricity Supply Act, 2016 <sup>36</sup> Public Utilities Regulatory Commission Act, 2016 <sup>37</sup> Amendment to the Electricity Supply Act, 2017 <sup>38</sup> Amendment to the Public Utilities Regulatory Commission Act, 2017 <sup>39</sup>	Draft Regulations on Tariff Setting Methodology, 2019 <sup>40</sup> Draft Regulations on the Rules and Procedure for Applying for Licences and Permits <sup>41</sup> Draft Generation Expansion Planning and Competitive Procurement Regulations, 2019 <sup>42</sup> Electricity Sector Grid Code, 2019 <sup>43</sup>		Investment Climate Statements: Grenada, 2021 <sup>44</sup>
<b>Guyana</b>	Draft National Energy Policy of Guyana, 2016 <sup>45</sup>	Electricity Sector Reform Act, 1999 <sup>46</sup>	Electricity Sector Regulations, 1999 <sup>47</sup>	Guyana Power & Light Development and Expansion Programme, 2021 <sup>48</sup>	Guyana Investment Act, 2004 <sup>49</sup> Investment Statements: Guyana, 2021 <sup>50</sup>
<b>Saint Lucia</b>	Saint Lucia National Energy Policy, 2010 <sup>51</sup> Saint Lucia Energy Sector Policy and Strategy <sup>52</sup> , 2003 Saint Lucia National Energy Transition Strategy <sup>53</sup> , 2017	Electricity Supply Act, 2008 <sup>54</sup>		Saint Lucia National Energy Transition Strategy and Integrated Resource Plan <sup>55,56</sup>	Investment Climate Statements: Saint Lucia, 2021 <sup>57</sup>
<b>St. Kitts and Nevis</b>	National Energy Policy St. Kitts and Nevis, 2011 <sup>58</sup>				Investment Climate Statements: St. Kitts and Nevis, 2021 <sup>59</sup>
<b>St. Vincent and the Grenadines</b>	The Government's National Energy Policy, 2009 <sup>60</sup> Energy Action Plan for St. Vincent and the Grenadines, 2010 <sup>61</sup>	Electricity Supply Act, 1984 <sup>62</sup>		St. Vincent and the Grenadines National Electricity Transition Strategy, 2017 <sup>63</sup>	Investment Climate Statements: St. Vincent and the Grenadines, 2021 <sup>64</sup>
<b>Suriname</b>		Electricity Act, 2016 <sup>65</sup>			Investment Climate Statements: Suriname, 2021 <sup>66</sup>
<b>Trinidad and Tobago</b>	Framework for Development of a Renewable Energy Policy for Trinidad and Tobago, 2011 <sup>67</sup> Energy Policy Green Paper, under development <sup>68</sup>	Trinidad and Tobago Electricity Commission Act, 2016 <sup>69</sup>			Investment Climate Statements: Trinidad and Tobago, 2021 <sup>70</sup>

## Notes

1. Barbados' NDC mentions partial contributions and grants so far, but not a total cost estimate.
2. Barbados' NDC mentions partial contributions and grants so far, but not a total cost adaptation estimate.
3. "National Energy Policy" (Government of Antigua and Barbuda, 2011), [https://www.ctc-n.org/files/resources/antiguabarbuda\\_national\\_energy\\_policy.pdf](https://www.ctc-n.org/files/resources/antiguabarbuda_national_energy_policy.pdf).
4. "Sustainable Energy Action Plan" (Government of Antigua and Barbuda, 2013), [http://www.oas.org/en/sedi/dsd/Energy/Doc/EAP\\_AntiguaBarbuda\\_web.pdf](http://www.oas.org/en/sedi/dsd/Energy/Doc/EAP_AntiguaBarbuda_web.pdf).
5. "Renewable Energy Act" (Government of Antigua and Barbuda, 2015), [https://www.ctc-n.org/files/resources/antiguabarbuda\\_national\\_energy\\_policy.pdf](https://www.ctc-n.org/files/resources/antiguabarbuda_national_energy_policy.pdf).
6. "The Public Utilities Act" (Government of Antigua and Barbuda, 1973), <https://www.global-regulation.com/law/antigua-and-barbuda/2935982/public-utilities-act.html>; <http://laws.gov.ag/wp-content/uploads/2018/08/cap-359.pdf>.
7. "IRENA Planning VRE Integration Case Study Antigua" (IRENA), [https://islands.irena.org/-/media/Files/IRENA/Sids/CASE\\_STUDY\\_ANTIGUA.ashx?la=en&hash=AB7B7B6C9A7B3313CAB3C7D94AF7F594A6E3D211](https://islands.irena.org/-/media/Files/IRENA/Sids/CASE_STUDY_ANTIGUA.ashx?la=en&hash=AB7B7B6C9A7B3313CAB3C7D94AF7F594A6E3D211).
8. "2019 Investment Climate Statements: Antigua and Barbuda" (US Department of State, 2019), <https://www.state.gov/reports/2019-investment-climate-statements/antigua-and-barbuda/#:~:text=There%20are%20no%20limits%20on,on%20a%20piece%20of%20property>.
9. "Antigua and Barbuda Citizenship by Investment Act" (Government of Antigua and Barbuda, 2019), <http://www.ilo.org/dyn/natlex/docs/ELECTRONIC/93553/109408/F1924341845/ATG93553.pdf>.
10. "The Bahamas National Energy Policy" (Government of the Bahamas, 2013), <https://www.bahamas.gov.bs/wps/wcm/connect/c0934c9b-fcoe-4496-90e7-5d273c57553a/energypolicy.pdf?MOD=AJPERES>.
11. "Electricity Arrangement of Sections" (Government of the Bahamas), [http://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/1956/1956-0017/ElectricityAct\\_1.pdf](http://laws.bahamas.gov.bs/cms/images/LEGISLATION/PRINCIPAL/1956/1956-0017/ElectricityAct_1.pdf).
12. "Electricity Act" (Government of Bahamas, 2015), <https://www.climate-laws.org/geographies/bahamas-the/laws/electricity-act-2015>.
13. "The Bahamas Electricity Corporation Legislation" (Government of the Bahamas, 1965), [http://laws.bahamas.gov.bs/cms/images/LEGISLATION/SUBORDINATE/1965/1965-0076/TheBahamasElectricityCorporationRegulations\\_1.pdf](http://laws.bahamas.gov.bs/cms/images/LEGISLATION/SUBORDINATE/1965/1965-0076/TheBahamasElectricityCorporationRegulations_1.pdf).
14. "2021 Investment Climate Statements: The Bahamas" (US Department of State, 2021), <https://www.state.gov/reports/2021-investment-climate-statements/bahamas/>.
15. "Bahamas Investment Authority" (Government of the Bahamas), [https://www.bahamas.gov.bs/wps/portal/public!/ut/p/b1/04\\_Sj9CPykssyoxPLMnMzovMAfGjzOKNDdx9HR1NLHz9jUisDTwNnQ3NvENNDbyDjYEKIoEKDHAARWN C-sP1o\\_ArMYQqwGOFnod-bqp-QW6EQZaJoyIAo6v6\\_A!!/dl4/d5/LzdBISEvZoFBI5gnQSEh/](https://www.bahamas.gov.bs/wps/portal/public!/ut/p/b1/04_Sj9CPykssyoxPLMnMzovMAfGjzOKNDdx9HR1NLHz9jUisDTwNnQ3NvENNDbyDjYEKIoEKDHAARWN C-sP1o_ArMYQqwGOFnod-bqp-QW6EQZaJoyIAo6v6_A!!/dl4/d5/LzdBISEvZoFBI5gnQSEh/).
16. "Barbados National Energy Policy" (Government of Barbados), <https://energy.gov.bb/publications/barbados-national-energy-policy-bnep/>.
17. "Electric Light and Power Act" (Government of Barbados, 2013), <https://energy.gov.bb/download/electronic-light-power-act/?ind=1622200259213&filename=Electric-Light-and-Power-Act-CAP.278-May2021.pdf&wpdmdl=1726&refresh=61e98b3foa5371642695487>.
18. "Integrated Resource & Resiliency Plan for Barbados" (Ministry of Energy, Small Business, and Entrepreneurship, 2021), <https://energy.gov.bb/download/integrated-resource-resiliency-plan-for-barbados-draft-report/?wpdmdl=3465&refresh=61e1a54c212951642177868>.
19. "GE-led Study Reaffirms Barbados Light and Power's Renewable Power Integration Capabilities" (General Electric, 2015), <https://www.ge.com/news/press-releases/ge-led-study-reaffirms-barbados-light-powers-renewable-power-integration>.
20. "2021 Investment Climate Statements: Barbados" (US Department of State, 2021), <https://www.state.gov/reports/2021-investment-climate-statements/barbados/>.
21. "Invest Barbados" (Government of Barbados), <https://www.investbarbados.org/>.
22. "National Energy Policy Framework" (Government of Belize, 2011), <https://energy.gov.bz/wp-content/uploads/2020/09/National-Energy-Policy-Framework.pdf>.
23. "Belize Consolidated Project Plan" (Government of Belize, 2018), [https://energy.gov.bz/wp-content/uploads/2020/09/Belize\\_CPP\\_Report\\_20180910.pdf](https://energy.gov.bz/wp-content/uploads/2020/09/Belize_CPP_Report_20180910.pdf).
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