A PIVOTAL MOMENT FOR GUYANA: REALIZING THE OPPORTUNITIES

SYSTEMATIC COUNTRY DIAGNOSTIC

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Kaieteur Falls pictured by: Senior Financial Officer Steen Byskov

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Preface

This Systematic Country Diagnostic (SCD) is the first ever prepared by the World Bank Group for the Cooperative Republic of Guyana. It is designed to provide a comprehensive overview of key macroeconomic, fiscal, and sectoral challenges as the country begins its historic transformation into an oil producer. The SCD was finalized in March 2020 and updated to reflect the COVID-19 pandemic impacts and the fall in the oil prices. Furthermore, these two factors accentuate the constraints faced by Guyana and reinforce the analysis and messages in the report.

First, although, Guyana is among the few countries in the Latin America and Caribbean (LAC) region to maintain a positive economic outlook, its public health systems will be stretched with the impact of COVID-19. The pandemic has exposed the inadequacy in health systems to treat patients and protect health workers, with the lack of hospital beds and healthcare workers. There are also spatial divergences with access to basic health care services particularly limited in rural areas, and the problem is expected to be more challenging as testing and treatment of COVID-19 will likely be carried out at the national and the four regional hospitals. The containment measures are impacting employment and livelihood; important in a country with over 43 per cent poor.

Second, the current volatility in oil prices reinforces the need for a sovereign wealth fund, good governance and transparency in the sector; this issue has been clearly articulated in the report. Recent oil price volatility may have reduced overall revenue of oil production in the short term. However, prices are projected to stabilize in the medium and long term, hence developments do not change the medium- and long-term outlook in any substantial way. The high quality of oil and low variable costs for the current ongoing production facilities are anticipated to be covered even with low prices, hence production is unlikely to halt.

Abbreviations & Acronyms

AFC	Alliance for Change
APNU	A Partnership for National Unity
BoP	Balance of Payments
BoS	Guyana Bureau of Statistics
CARICOM	Caribbean Community
CCT	Conditional Cash Transfers
EITI	Extractive's Industry Transparency Initiative
FDI	Foreign Direct Investment
GCC	Gulf Cooperation Council
GCRG	Government of the Co-operative Republic of Guyana
GDP	Gross Domestic Product
GEP	Global Economic Prospects
GNP	Gross National Product
GPL	Guyana Power and Light
GSDS	Green State Development Strategy
HCI	Human Capital Index
HIPC	Heavily Indebted Poor Country
ICT	Information and Communications Technology
IDB	Inter-American Development Bank
IMF	International Monetary Fund
IMI	International Migration Institute
LAC	Latin America and the Caribbean
LFS	Labor Force Survey
MICS	Multiple Indicator Cluster Survey
MOE	Ministry of Education
MOH	Ministry of Health
NDCs	Nationally Determined Contributions
NIS	National Insurance Scheme
NRF	The Guyana Natural Resource Fund
O&G	Oil and Gas
PNC	People's National Congress
PPP	Purchasing Power Parity
SCD	Systematic Country Diagnostic
SLC-HBS	Survey of Living Conditions/Household Budget Survey
SOE	State-owned enterprises
TFP	Total Factor Productivity
UHC	Universal Healthcare Coverage
UNFCCC	United Framework Convention on Climate Change
UNICEF	United Nations International Children's Emergency Fund
WBES	World Bank Business Experience Survey
WDI	World Development Indicators

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EXECUTIVE SUMMARY

1. Guyana stands at the threshold of a new era. The recent discovery of vast offshore oil and gas (O&G)[1] reserves and the start of production, is poised to fundamentally transform the structure of the Guyanese economy while generating an influx of fiscal revenue. Prior to the discovery, extractive industries and commodity exports already played a major role in Guyana's economy and public finances. However, the mining sector created few jobs and had a limited impact on poverty reduction. The rise of the O&G sector poses unprecedented macro-fiscal management challenges while offering new opportunities to address longstanding development constraints. The development of oil-producing countries often comes at high cost of environment and climate change, which needs to be balanced. In addition, the country is now facing the challenges from the COVID-19 pandemic that will stretch the public health systems and highlight inadequacies of testing and treatment facilities.

2. Recognizing both the enormous potential of the O&G sector and the considerable risks involved in oil-driven growth and from the pandemic, this first systematic country diagnostic (SCD) for Guyana presents a forward-looking analysis of an economy that is poised at a pivotal moment. It outlines a vision for Guyana, anchored in the oil-fund, as a high-income economy on the path of inclusive and sustainable growth with social cohesion and environmental resilience. The country will face major tradeoffs as it strives to balance its development objectives. The SCD draws on lessons from the international experience with resource-rich developing countries, as well as Guyana's own history with extractives, to inform the country's development agenda, support a robust policy dialogue between stakeholders, and maximize impact on the citizenry.

3. Recognizing the country's exceptional circumstances, this SCD sets a vision for Guyana as an oil-producing economy on a path towards inclusive and sustainable growth. Given the magnitude of projected oil production and revenues, Guyana's GDP could rise from US$4.3 billion in 2019 to US$14.0 billion in 2030, with the oil sector alone accounting for US$3.6 billion at the end of the period.[2] Assuming the population growth rate remains on its current trajectory, Guyana's per capita GDP would exceed US$16,900 by 2030, enabling the country to reach close to high-income status if the baseline assumptions hold.[3] However, for high-income status to reflect meaningful gains in general wellbeing, Guyana must improve its human capital development and health indicators, and reduce poverty levels while maintaining macroeconomic stability and environmental sustainability. Thus, the development vision for Guyana as a high-income, oil-producing economy by 2030 must include an agenda for broad-based growth and social cohesion, where all citizens receive a fair share of growth benefits.

[1] Guyana has both oil and gas reserves, and the SCD uses the terms "oil sector" and "O&G sector" interchangeably.
[2] These GDP projections are based on production from two oil fields and completed National Accounts data as publicly available in April 2020.
[3] GDP projections are in nominal terms, and the criteria for high-income status may change if real terms are used.

4. Guyana is a small state with abundant natural resources, both extractive and renewable, but its legacy of jobless resource-based growth and spatial development patterns has resulted in low levels of development outcomes and high emigration rates. Guyana is endowed with extensive grasslands, tropical rainforests, deposits of gold, bauxite, and diamonds, abundant water resources, and newly discovered oil and gas reserves off its Atlantic coast. Resource-based development has created a limited number of jobs. Over 80 percent of Guyana's land mass is covered by tropical rainforest and mountains, and the population is concentrated along the coastal plain. Poverty rates are highest in the sparsely populated interior, where communities have limited access to economic opportunities, healthcare and public services. Guyana is an ethnically and religiously diverse society, encompassing Indo-Guyanese, Afro-Guyanese, Mixed-Guyanese, indigenous Amerindian and others. Economic and social factors have contributed to high emigration rates and brain drain, with 39 percent of all Guyanese citizens currently residing abroad and roughly half of all Guyanese with a tertiary education having emigrated to the United States.

5. The economy of Guyana and the livelihoods of its people largely depend on the utilization of rich natural resource base and its efficient and sustainable use will determine Guyana's long-term growth prospects. Despite being an important contributor to the country GDP, natural resources management practices in Guyana are also faced with a number of institutional and capacity challenges. Newly discovered O&G reserves could add a source of volatility to natural resources and their weak management and inadequate institutional and capacity underpinnings represent a significant constraint to Guyana's pathway to inclusive and resilient growth. That said, they are at the same time providing an opportunity to maximize the potential of Guyana's vast natural resources including by adopting proactive environmental strategies and practices, among others.

6. The SCD is organized into six chapters. Chapter 1 situates the development of the oil sector within Guyana's broader economic, social, and political context. Chapter 2 estimates the magnitude of fiscal revenues from the oil sector, along with alternative cost scenarios, and the implications of alternative strategies for allocating these revenues and considers how policies can mitigate the macro-fiscal and environmental risks posed by the sector. Chapter 3 focuses on institutional quality and good governance, especially in terms of strengthening the public sector, and it details challenges related to the design and implementation of a sovereign wealth fund, which the international experience has shown to be vital to the success of resource-rich developing countries. Chapter 4 explores how the government can leverage natural resource revenues to accelerate Guyana's economic transformation and spur job creation. Chapter 5 evaluates strategies for transforming Guyana's natural capital into human capital and reaching full coverage of basic services and infrastructure through investment in health, education, and social protection. The chapter highlights the constraints in human capital development and health facilities; even more critical that these are addressed in context of the current COVID-19 pandemic. Chapter 6 prioritizes interventions necessary to generate enduring gains in poverty reduction and shared prosperity. A key offering of the chapter is a spatial development package to address deficiencies in basic service delivery and infrastructure necessary to protect well-being and health of Guyanese citizens. To ground the analysis in the real-world experience of Guyanese communities, each

chapter begins with a brief discussion of how the newfound wealth will affect the most vulnerable and marginalized households.

Chapter 1: A Pivotal Moment in Guyana's Economic History

7. The discovery of offshore oil reserves has profoundly altered the Guyanese economy, and how the government manages the anticipated fiscal revenues and the macroeconomic impact of oil exports will determine whether the rise of the oil sector eliminates or exacerbates the country's longstanding development challenges. Guyana's gross oil resources are conservatively estimated at over 8.0 billion barrels, and its territorial waters remain largely unexplored. Oil production started in December 2019, and Guyana has already become an oil exporter. The rise of the oil sector is projected to dramatically alter Guyana's growth trajectory and the sectoral composition of its economy.

8. As oil exploration and production activities are currently located entirely offshore, with only modest ties to the nonoil economy, public policy will play a major role in determining how the oil sector impacts the income levels and living standards of Guyanese households. The sector is expected to remain largely isolated from the larger economy due to Guyana's small manufacturing base and lack of specialized workforce skills. Consequently, in the short-to-medium term, public spending will be the major channel through which the oil sector impacts Guyana's economic and social development.

9. Well before the discovery of oil, Guyana had struggled to transform its resource wealth into inclusive and sustainable growth. Despite its abundant natural resources, Guyana's per capita GDP in 2018 was the second-lowest in South America at just under US$5,000, and its national poverty headcount rate was among the highest in the Latin America and Caribbean (LAC) region at 43.4 percent.[4] Guyana's commodity-focused economic model contributed to an unbalanced distribution of returns, which was underscored by the low growth elasticity of poverty. Between 2006 and 2017, when the annual GDP growth rate averaged about 4 percent per year, a one percent increase in GDP per capita was associated with a mere 0.5 percent decline in the poverty rate. The international experience highlights the oil sector's potential to worsen inequality if fiscal revenues are not properly managed, which can further weaken the impact of growth on poverty and living standards while potentially undermining social cohesion.

10. Poverty and ethnic fragmentation complicate Guyanese politics and heighten risks to social and political stability. Rural coastal areas are home to a large share of Indo-Guyanese, that are in the agricultural sector. Half of the urban population is Afro-Guyanese, with employment mainly in the services and the public sector. Indigenous Amerindian Guyanese live primarily in inland rural areas and are often engaged in smallholder agriculture, forestry, craftwork, mining, and traditional livelihoods. Poverty is concentrated in the country's rural interior, with especially high poverty rates among indigenous communities. Nationwide, three-quarters of the population and over 80 percent of the poor live in rural areas. Access to health care services is inadequate especially in the interior due to limited infrastructure and quality of care, as well as high cost of

[4] The income poverty headcount rate, measured at US$5.50 per person per day in 2011 purchasing-power-parity terms, based on the Labour Force Survey 2017.

travel. Traditional gender norms and high levels of social tolerance for violence are binding constraints for social inclusion.

11. Moreover, the international experience suggests that the oil sector can pose serious challenges to good governance, political stability, social cohesion and the integrity of democratic processes. Resource-rich countries with stronger public institutions have consistently experienced better social and economic outcomes than have comparable countries with weaker institutional infrastructure. The development of large-scale extractive industries in developing countries can erode the quality of governance and may even spark conflicts and polarization over control of resource revenues. Guyana's governance indicators are relatively low, and an influx of oil revenues could exacerbate the challenges facing the public sector. A lack of transparency and participation undermines trust in public institutions, and measures of institutional trust reached a record low in 2014. Despite recent gains, Guyana's score on Transparency International's Corruption Perceptions Index remains below those of most high-income oil-rich countries, and in 2019 Guyana ranked 85th out of the 180 countries included in the index. The limited effectiveness of the public sector has undermined the implementation of social-development and poverty-reduction programs.

12. The COVID-19 pandemic has created a global health crisis that has had a deep economic impact. Guyana, despite being among a few countries in the LAC region to maintain a positive economic outlook, is facing high public health risk due to its weak health system. Guyana ranks 137th out of 195th in the global health security index and is particularly weak in early detection and reporting of epidemics as well as an inadequate health system to treat patients and protect health workers. If not contained, the outbreak will likely strain the health system's capacity. Guyana has 1.6 hospital beds per 1,000 people, lower than the LAC average of 2.2 and the Caribbean average of 2.3 (2014). Access to basic health care services is limited especially in rural areas, and the problem is expected to be more challenging for testing and treatments of COVID-19 infections.

13. The pandemic and the containment measures imposed by the Government of Guyana including travel restrictions and social distancing measures have a differentiated effect on employment and livelihood. Industries that are among the most affected include retail trade, transport, food and accommodation businesses. The industries altogether create jobs for more than 20 percent of total employment. The impact will likely fall disproportionately on informal workers, constituting approximately 60 percent of workers from these industries who generally lack labor, social and health protections. Disruption in economic activities is expected to continue, leading to income loss or even permanent job losses.

14. Guyana faces an enormous challenge, but it has considerable strengths to draw on as it strives to transform its economy into an engine of shared prosperity. While there have been delays in the conclusion of the current electoral process, Guyana has had a peaceful transition of power. While oil presents novel challenges, policymakers can leverage the country's experience with the mining sector to inform their strategy for managing resource revenues. High levels of emigration have depleted the country's human capital, but the diaspora could become a considerable asset if steps are taken to encourage the return of skilled professionals. Guyana possesses abundant renewable natural capital, and although the oil sector poses environmental

risks, its fully offshore location will mitigate immediate threats to sectors such as agriculture and tourism.

Chapter 2: Oil and Intergenerational Equity

15. Guyana's newfound natural resource wealth presents policymakers with critical tradeoffs between spending, investment, and savings. Public policy will shape the impact of the oil sector on the scope and pace of economic growth, as well as the distribution of income gains between households and across generations. The magnitude of the country's anticipated resources presents a serious risk that oil revenues will be spent too quickly, overwhelming the public sector's capacity to manage expenditures prudently while distorting prices and economic incentives.

16. The value of fiscal oil revenue will depend on production volumes, export prices, the costs of production, and the terms of the government's agreements with oil companies. For example, the Production Sharing Agreement (PSA) with ExxonMobil and its partners provides annual fiscal revenue via a 2 percent royalty on gross production plus 50 percent of "profit oil," which is defined as production that exceeds cost recovery. Initially, up to 75 percent of total oil revenue after royalty payments will be allocated to repay the capital expenditures and operating costs incurred by the oil companies. After these outlays have been recouped, the rising volume of "profit oil" is projected to dramatically increase fiscal revenues.

17. Total fiscal revenues from developing the country's first two oilfields are projected to exceed US$20 billion, dwarfing Guyana's 2018 GDP of US$4 billion. While oil prices are expected to fluctuate these fluctuations may have an impact in the short term, but not in the medium and long term, hence not affecting the outlook in any substantial way. The variable costs for the current ongoing production facilities even with protracted low prices are anticipated to be covered, hence production unlikely to halt. To manage the oil revenues, a Sovereign Wealth Fund (SWF) is recommended, designed to absorb excess revenue that cannot be spent effectively in the short term. In 2019, the government established a SWF - the Natural Resource Fund (NRF) - to manage the expected influx of O&G revenue although without bipartisan parliamentary support due to absence of opposition party members. Revenues in such SWFs, established in other countries, are usually invested in foreign financial assets, enabling the country's natural resource wealth to generate consistent returns across generations.

18. Macroeconomic projections suggest that after the 2020 crisis has passed, the Guyanese nonoil economy can expand at an average rate of around 4.5 percent per year and absorb a nominal fiscal expansion of about 9-10 percent each year starting in 2021. These estimates would need to be revisited regularly and a larger fiscal expansion may be absorbed if the additional expenditures do not contribute to domestic demand. Such an expansion would boost public spending from about 33 percent of nonoil GDP in 2019 to 37 percent in 2030. The public debt stock would rise from US$2.3 billion to US$3.7 billion in nominal terms, but it would fall from 54 percent of GDP in 2019 to 27 percent in 2030. Meanwhile, the oil revenue saved as foreign assets in a SWF can enable the government to pay off the entire public debt stock if it chose to do so: the total foreign assets are projected to reach US$14.1 billion in 2030, significantly higher than Guyana's projected nonoil GDP of US$10.4 billion.

19. Alternative projections highlight the deeply negative consequences of pushing spending beyond this limit. Channeling all fiscal oil revenues directly into the budget, with no savings in a SWF, would cause a sharp increase in the inflation rate, and growth would slow immediately after the oil revenues were exhausted. Frontloading public investment beyond the revenues generated by the oil sector could boost the annual GDP growth rate to 8 percent, but it would cause an unsustainable increase in the debt stock, and debt-service payments could fully consume future oil revenues. However, these negative effects would not materialize if additional spending is allocated to either boost savings and foreign assets, or directly boost imports, thereby not affecting domestic demand.

20. Oil exports can pose challenges to the management of the real effective exchange rate, and only those oil-producing countries that have successfully sterilized capital inflows combined with other sophisticated economic policy instruments have been able to sustain economic growth over the long-term. Guyana lacks sterilization instruments and developing them would require sophisticated policy reforms and administrative upgrades, including the creation of an electronic system for trading government bonds. In the absence of sterilization, capital inflows will likely drive up prices for non-tradable goods and services, especially real estate, weakening the competitiveness of traditional nonoil exports. Instruments to sterilize capital inflows will be more effective if they are implemented as part of a broader package of economic policies designed to help Guyana to deal with other economic shocks, such as capital outflows following a decline in oil prices. This is most relevant in context of the current volatility and decline in oil prices.

21. Guyana will have to manage dual climate-change risks. As a country that is highly vulnerable to climate change and climate-induced natural disasters, climate change adaptation is at the core of its climate action. Additionally, fiscal risks emanating from climate and natural disasters could derail the growth and development efforts; necessitating targeted public investment to build resilience. Coastal flooding is an especially serious risk, as much of Guyana's population and economic activity—especially agriculture—is concentrated in low-lying areas along the Atlantic coast, and unplanned urbanization increases the vulnerability of coastal areas. Measures must be put in place to mitigate the risks associated with environmental disasters and protect the country's renewable natural capital. Key measures include development of climate-resilient infrastructure, sustainable management and use of natural resources, adoption of climate-smart practices and technologies and improved governance and institutions underpinning these efforts. At the same time, considering the global effort to limit temperature rise, another risk that Guyana is facing is macro-fiscal. It arises from anticipated and accelerated transition of the global economy away from carbon-intensive fuels. As such, Guyana will need to balance its development needs with the impacts of global low-carbon transition and ensure that future growth trajectories incorporate social, economic and environmental concerns while also creating an enabling environment for low-carbon and sustainable development.

Chapter 3: Governance and Institutions

22. Good governance and strong public institutions are vital to the long-term growth of resource-rich countries. Guyana faces an array of governance and institutional challenges as it strives to leverage its natural resource wealth to support sustainable development. Institutions are referred to in this SCD as the set of organizations, laws, rules, practices and systems overseen or implemented by the state's civil service that are used to implement public policies, laws and deliver public goods and services. Key priorities include: (i) improving the quality of government and enhancing accountability and transparency across the public sector; (ii) designing appropriate policies, legislation, and institutions to underpin the development of the oil sector; and (iii) elaborating the rules governing a SWF. Addressing these challenges will require measures to attract and retain highly qualified staff to the public sector during a period when the country's skilled professionals are likely to face expanding opportunities in the private sector.

23. Deficiencies in planning and budgeting undermine the effectiveness of Guyana's public institutions. The public financial management system suffers from weaknesses in fiscal risk management, multiyear budgeting, public procurement, public investment management, and financial reporting. Limited cash planning, the repeated use of overdrafts, inadequate commitment controls, and insufficient information on arrears continue to negatively impact public expenditure management. A large share of recurrent expenditures is pre-committed to finance the wage bill, as well as transfers to public-welfare and private-sector organizations, and the annual budgeting process largely involves allocating resources across domestically funded capital projects. The resulting inability to formulate sectoral strategies, medium-term investment plans, and multiannual expenditure policies limits the ability of the budget process to advance Guyana's development objectives. Moreover, poor planning and ineffective management systems undermine the predictability of public service delivery.

24. Unpredictable service delivery can undermine citizen's confidence in public institutions. Despite recent improvement, Guyana's governance scores remain in the bottom half of global rankings, especially on regulatory quality - the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Further, trust in institutions and rule of law remain low. The government effectiveness which measures the quality of public services and the degree of its independence from political pressure has constantly declined, despite gains in other governance indicators. Trust in public institutions is critical to fostering a cohesive society.

25. In addition to greater transparency and accountability across the public sector, specific measures will be needed to ensure the successful management of the oil sector and the fiscal revenues it generates. The government will need to develop: (i) an adequate policy, regulatory, and contractual framework for the oil sector, (ii) oversight institutions and improved fiscal policy design and administration agencies, and (iii) robust revenue management and distribution processes. While Guyana has made progress in building the capacity to manage its nascent oil sector, further efforts will be needed to reach the levels of regulatory quality and efficiency of other emerging oil producers.

26. Strengthening the public investment management system will be especially critical, as the inflow of oil revenues is expected to drive a rapid increase in public investment. SWFs in several countries, including the Guyana NRF Act, prioritize using oil revenues to finance development expenditures, but Guyana's current expenditure processes and systems are not able

to manage such an expansion. Expectations of oil revenue inflows increases pressure on service delivery, and, in many situations, private firms start offering unsolicited bids to improve public infrastructure, exacerbating fiscal risks. Addressing these risks while enhancing service delivery will require investment coordination and prioritization, as well as the possible contracting of skills from the private sector. A centrally managed public investment program could develop a master plan for public investment and bolster confidence in public institutions.

27. Resource rich countries establish SWFs that are aligned with the international best practices for sovereign wealth funds known as the "Santiago principles." While the current NRF is largely aligned to the Santiago principles, it was approved by Parliament in the absence of the opposition parliamentarians. Successful adoption and implementation of the Santiago principles requires bipartisan support and ownership in democracies. The NRF Act provides for a Macroeconomic Committee and an Investment Committee to advise the Minister of Finance and stipulates that advice will be made public as part of the minister's report to the legislature. It also includes a special provision for withdrawals in the wake of natural disasters. However, it does not allow for withdrawals to counter economic downturns unrelated to such disasters. Legislation that allows use of resources is critical in the context of the current COVID-19 pandemic which is manifesting in many countries as economic impacts on account of transport disruptions, social distancing and lockdowns. The NRF Act mandates the accumulation of assets in the fund even if the government continues to borrow, and it does not entail a debt ceiling or otherwise limit public borrowing.

Chapter 4: Structural Economic Transformation and Job Creation

28. The international experience and the legacy of Guyana's mining industry both highlight the risks that resource-driven growth poses to job creation and the competitiveness of the non-resource sectors. Among developing countries, an overdependence on oil exports is strongly associated with slow job creation and persistently high poverty rates, and Guyana has proven vulnerable to the adverse effects of real exchange-rate appreciation on employment dynamics and productivity. Between 2006 and 2017, the mining industry rapidly expanded, but instead of sustained job creation, Guyana experienced a shift in employment across sectors. Public-sector employment expanded, but service delivery remained poor. Agriculture continued to absorb labor, albeit at low wages, while industrial employment contracted as Dutch-disease effects diminished the competitiveness of processed exports on international markets. Years of largely jobless growth had little impact on poverty reduction and inhibited the structural transformation of the Guyanese economy.

29. Guyana's oil sector is expected to create local jobs, and oil exports are likely to profoundly impact the structural composition of the Guyanese economy and undermine the competitiveness of other sectors. The oil sector is projected to create about 3,850 direct jobs and 23,100 indirect jobs by 2025, employing 0.7 and 3.9 percent of the workforce, respectively. The government has adopted a prudent approach to the development of local content, but the job-creating potential of the oil sector is limited by its capital- and skill-intensive nature, and Guyana's small, undiversified manufacturing base is not capable of producing many of the sophisticated inputs the sector requires. As oil exports rise, the appreciation of the real exchange rate is expected to negatively impact the competitiveness of tradable sectors, a key symptom of Dutch disease.

Manufacturing and agriculture are likely to experience job losses as employment shifts toward the oil sector and non-tradable services.

30. The revenues produced by the oil sector can distort the labor market by encouraging the unchecked expansion of public-sector employment and the establishment of generous transfer programs. Oil revenues create strong incentives to create or expand transfer programs and boost public-sector employment. Although public-sector employment adds to overall job creation, a large and highly paid public service may crowd out jobs and investment in the private sector by putting upward pressure on reservation wages and competing for scarce human resources away from private firms. Meanwhile, the reallocation of physical and human capital from the private to the public sector can also create distortions in relative wages that lower overall productivity. For these reasons, managing the growth of public-sector employment will be crucial to maintain the competitiveness of Guyana's private sector.

31. Appropriate public policies are critical to support private-sector development and job creation. Over the last decade, an expanding public sector has driven job creation in Guyana, while an unfavorable business environment, a large state presence in the economy, limited competition, and rent-seeking behaviors have inhibited the development of the private sector. As Guyana moves into a new phase of its development, the international experience highlights the perils of resource-driven growth. While the oil sector tends to create a limited number of jobs, massive oil revenue is expected to change the dynamics of local labor markets by weakening competitiveness of the tradable sector, increasing the country's dependence on oil exports, undermining incentive to work, and triggering an expansion of public sector employment. Public policies must counter the adverse effects of the oil sector on employment dynamics and reinforce the competitiveness of the non-resource economy. Public investment can diversify and modernize production in sectors in which Guyana has a comparative advantage, expanding employment creation while maintaining incentives to work. Complementary improvements in the business climate could enhance the impact of public investment on job growth and economic diversification.

Chapter 5: Human Capital Development and Sustainable Poverty Reduction

32. Given the oil sector's modest projected effects on job creation and nonoil economic activity, government spending and distributive policies will largely determine how the rise of the oil sector impacts Guyana's long-term development trajectory. Unlike other economic activities, in which most added value is distributed to workers as wages and to owners as profits, resource rents accrue to the government, which redistributes them through public spending. Guyana has long struggled to transform its resource wealth into inclusive growth, and while the national poverty rate has declined since 1991, it remains among the highest in the region, reflecting decades of relatively jobless resource-driven growth.

33. Two dimensions of public spending will determine how effectively the government translates its oil-revenue windfall into sustainable and inclusive growth; both gain importance in context of COVID-19. The first is human capital development, as public spending on health and education will directly impact the productivity of the current and future workforce. This will influence the ability of Guyanese workers to participate in the oil sector and related activities, as well as the economy's capacity to sustain robust growth rates as oil revenues diminish.

The second dimension is social protection and cash transfers, as these policies will be critical to ensure that the benefits of the country's oil wealth reach the poorest and most vulnerable households.

34. Spatial disparities and low levels of human capital limit the oil sector's positive spillovers on the broader economy. Despite gains in public education and healthcare, Guyana's human capital indicators are below the regional average. Education and health indicators reveal deep disparities between regions and ethnic groups. The poor quality of education undermines learning outcomes, especially in rural areas. Tertiary education offers low returns, and a large share of tertiary-educated Guyanese emigrate to more favorable labor markets. Meanwhile, lack of access to basic health care and infrastructure such as improved drinking water and sanitation has an adverse impact on maternal and child health in rural areas. High out-of-pocket costs and a lack of healthcare professionals further weaken Guyana's overall health indicators. Access to basic health care services is limited especially in rural areas, and the problem is expected to be more challenging during the pandemic..

35. Achieving full coverage of basic services and infrastructure will be essential for Guyana to achieve its development objectives. Guyana's geography deepens spatial disparities, as the sparse population and remote communities of the interior reduce the rate of return on infrastructure investments and raise the cost of delivering basic services. Oil revenue can finance improvements in areas that are critical to welfare and human capital development, including access to improved water sources, improved sanitation, roads, electricity, education, healthcare, information technology, and financial services. Spending should be prioritized to areas that need major improvement. Increasing the supply of education and health staff while upgrading vital infrastructure will be necessary to expand the provision of high-quality public services. Investing in education and healthcare offers a major opportunity to enhance the oil sector's impact on poverty reduction and shared prosperity. However, the international experience in the region and beyond suggests that increased spending will not necessarily improve health and education outcomes unless it is accompanied by good governance, strong institutions, and effective oversight mechanisms.

36. A strong social protection system will be vital to improve distributional equity and address the adverse effects of the oil sector on employment and growth in traditional sectors. Many countries use cash transfers to improve living standards among poor and vulnerable households. Universal and targeted cash transfers each offer specific advantages and drawbacks, and the international experience yields important lessons for designing an effective transfer mechanism. Guyana's current social protection programs are inadequate and poorly targeted, and the government needs to address their deficiencies before increasing their funding levels. Other social protection programs, such as unemployment insurance and skills training, can speed the reallocation of labor across sectors and shield households from income shocks. All social protection programs should be financed through the normal budget process to ensure sustainability and avoid politicization. Moreover, social protection programs must assess the limitations of the government's institutional capacity, and appropriate safeguards are required to prevent abuse. While the government's ability to implement social protection programs will improve over time, policymakers must carefully examine the efficacy of launching any ambitious initiatives.

37. To achieve fair distribution of oil wealth and realize its poverty reduction potential, two factors are important when making spending decisions: i) progressivity of spending and ii) institutional capacity. The chapter highlights that if the government maintains the current progressivity level of its redistributive policies, the impact of oil revenue on poverty reduction will be limited. Under that scenario, the average income growth of the bottom 40 percent is lower than that of the total population, and the poverty rate is projected to be slightly below 30 percent in 2030. If, however, the government pursues more progressive or pro-poor redistributive policies, Guyana can achieve the single digit poverty rate by 2030. A policy is progressive or pro-poor if it reduces income gaps between the top and bottom of the distribution either through job creation or social transfers directed to the poor. For example, in Mexico the annualized income growth of the bottom 40 percent between 2016-2018 was 2.9 percent compared to 1.0 percent of the total population. However, lack of institutional capacity can turn a well-designed progressive policy into an even more regressive system when subject to rent seeking and efficiency loss.

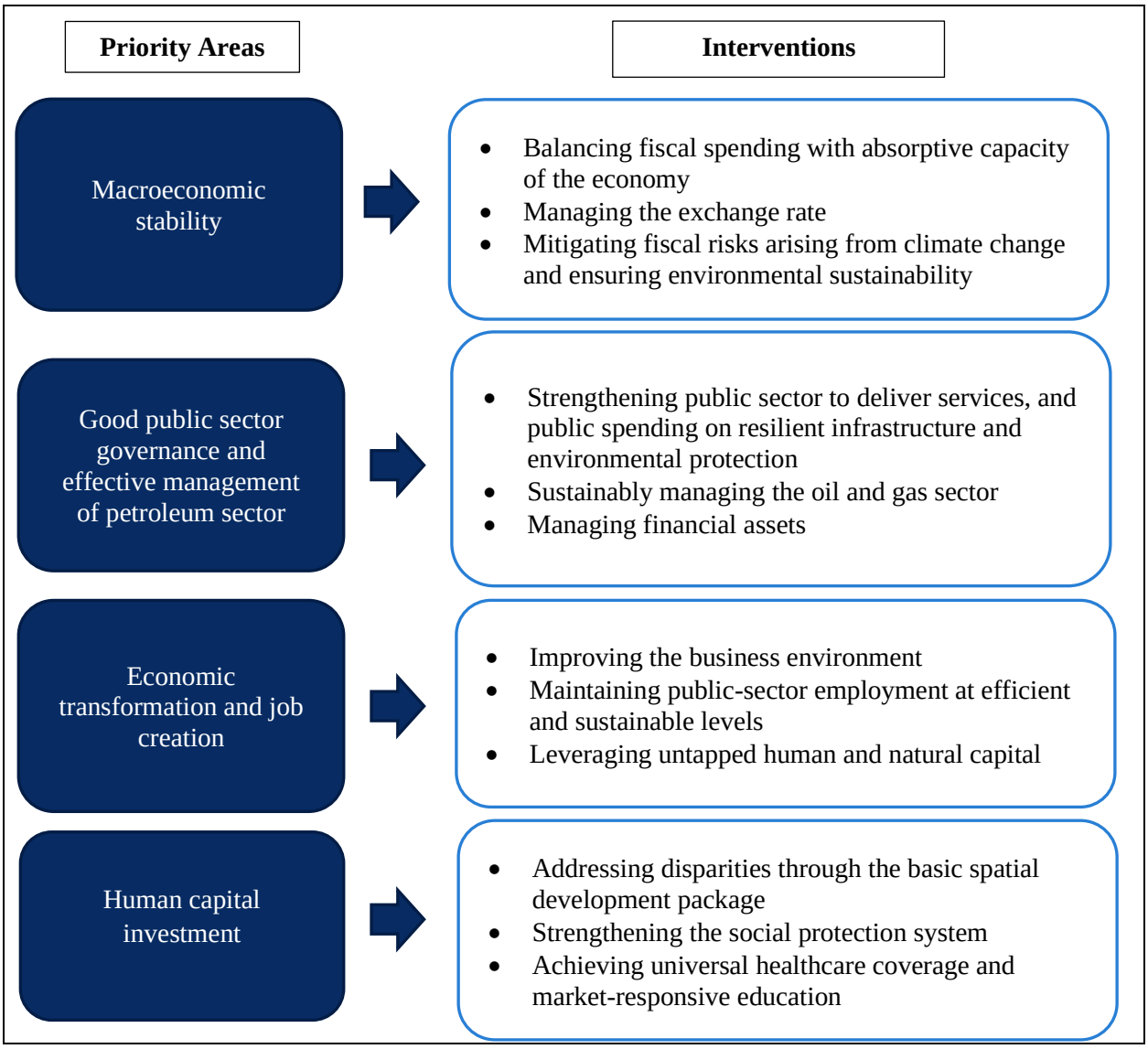
Chapter 6: Policy Options and Prioritization

38. The complexity of the challenges facing Guyana, and the government's limited institutional resources, demand a judiciously selected and carefully prioritized policy agenda. The international experience with newly resource-rich countries highlights the importance of fiscal restraint and respect for the limits of both the expenditure capacity of the public sector and the absorptive capacity of the economy. Well-designed policies can strengthen governmental capabilities while leveraging nonoil diversification to enhance the economy's capacity to absorb public spending.

39. Guyana faces critical challenges in four areas. The government's chief macroeconomic challenges include mitigating the macro-fiscal risks associated with the rise of the oil sector, countering the impact of real exchange-rate appreciation on the nonoil economy, and attenuating the macroeconomic threats posed by climate change. Addressing governance challenges will be necessary to increase the supply of public services, strengthen public investment management systems, and increase transparency and accountability in the public sector. Guyana's employment challenges reflect its inequitable, undiversified economic structure, which is marked by limited competition, a weak business climate, and small, underdeveloped markets. Finally, tackling Guyana's human capital and healthcare challenges will require large-scale investments in education and healthcare designed to build the capacity of the workforce, keep them healthy, save lives and reduce regional disparities in human-development indicators.

40. Oil revenues can help the government address these challenges, but only if those revenues are managed effectively. Without adequate safeguards to prevent misuse, rising oil resource revenues could exacerbate Guyana's development challenges and expose it to a host of adverse socioeconomic effects collectively known as the "resource curse." In line with the challenges described above, the SCD identifies four priority areas in which the government can leverage oil revenues to achieve its development objectives (Figure ES-1).

Figure 0-1: Priority Areas and Policy Interventions



41. A priority for ensuring inclusive and sustainable development will be to maintain macroeconomic stability and avoid or minimize the distortions associated with oil-driven growth. The government must ensure that the influx of fiscal oil revenues does not push public spending beyond the expenditure capacity of public institutions or the absorptive capacity of the nonoil economy, which could accelerate inflation and erode the competitiveness of nonoil exports. Shifting from direct to indirect taxes could help maintain a competitive real exchange rate, though appropriate mechanisms must be put in place to offset the impact of increased indirect taxation on low-income households. Meanwhile, boosting investment in climate-resilient infrastructure and environmental protection could help reinforce macroeconomic stability while facilitating a sustainable urbanization process that is expected to accompany the rise of the oil sector.

42. It will be important to strengthen public institutions. Efforts to modernize the O&G sector's legal and institutional framework and capacity should strive to promote transparency and accountability, encourage greater public engagement, and foster more effective interagency collaboration. Managing the growth of the civil service and involving the private sector in specific aspects of service delivery will enable the government to maximize the impact of current spending. Prudent management of fiscal oil revenues and foreign assets will require specialized skills provided by international experts, but the cross-country experience shows that appropriate and transparent oversight by the national authorities will be crucial to ensure the responsible accumulation of foreign assets in the SWF. Modernizing the public sector will require strengthening oversight mechanisms for the civil service, revamping public financial management systems to prevent inefficiency and curb opportunities for corruption and rent seeking across the public sector.

43. A priority will also be to promote economic diversification and job creation. To offset the adverse impact of real exchange-rate appreciation on the nonoil economy, the authorities must address the binding constraints on private-sector development identified for improving the business climate . A diverse and competitive private sector is necessary to support broad-based job creation and enable a diverse range of communities and ordinary citizens to participate in and benefit from the growth process. Measures that encourage local innovation and the adoption of new technologies could accelerate the growth of vital job-creating, business-enabling subsectors such as finance and logistics. While the government will need to attract skilled workers to key positions, maintaining parity between public- and private-sector wages will be necessary to prevent the crowding-out of private sector employment. The revenues generated from oil can help leverage the diversification potential of untapped natural capital. Developing high-value-added sectors in which Guyana has a comparative advantage could facilitate gradual economic transformation and avoid the disruptive effects of skills shortages. Updated labor policies will facilitate structural transformation and enable the efficient reallocation of labor across industries and from rural to urban areas. Comprehensive immigration reform is urgently needed to manage rising immigration levels and access the skills and resources of the Guyanese diaspora.

44. Building human capital will be critical. As the current COVID 19 pandemic has shown, this is the most important priority. Achieving sustainable long-term growth will require successfully converting depletable natural capital into broad-based gains in human capital. Achieving full coverage of critical services and infrastructure, including improved water sources, improved sanitation, roads, electricity, primary and secondary education, basic healthcare, information technology, and financial services, will be vital to the achievement of Guyana's development objectives. The social protection system must be expanded to better cater to children, youth, and working-age adults. Once an effective targeting mechanism, payment system, and social registry have been put in place, conditional cash transfers can be used to improve maternal and child health, overcome gender-based constraints on social and economic inclusion, and mitigate high transportation costs, which are a major barrier to educational attainment. Once full coverage of basic services and infrastructure has been established, policymakers should focus on achieving universal health coverage and creating a market-responsive education system. The necessary improvements in social services will be expensive, and the total cost of comprehensive

education reform alone could be as high as US$2.4 billion (US$9,800 per student[5]), which is around half Guyana's current nonoil GDP. Consequently, the speed at which social services can be upgraded will depend upon the absorptive capacity of the economy.

45. Fundamental conditions and development outcomes vary greatly across geographical regions and hence public policy would need to be adapted and prioritized to the specific circumstances in each region. The SCD outlines the 2030 development goals as basic requirements to set Guyana on the path to fulfil the vision. These goals are in accordance with the 2030 Agenda for Sustainable Development. To achieve the 2030 development goals, the country must identify and address the deep spatial disparities by improving infrastructure and service delivery in lagging regions (Table ES-1). Allocating spending on infrastructure and services to reflect disparities in welfare across regions will help ensure that the benefits of oil revenue are equitably distributed. This requires engagement with diverse stakeholders, including the private sector and development partners, to develop a master plan for meeting basic needs in underserved areas. A spatial development package identifies deficiencies in development outcomes by geographical area and prioritizes the needs for basic service delivery and infrastructure that are deemed necessary to support the social and economic well-being of all Guyanese citizens.

Table ES-1: Basic Spatial Development Package for Achieving 2030 Development Goals

		Distance to the 2030 development goals*			
	Vision 2030	**National**	**Administrative region**		**Priority**
1. Improved water sources	100%	6%	Interior:	29%	Invest in infrastructure to improve household access to proper sanitation, availability of clean water in interior
			Region 7,8:	35%	
			Region 9:	58%	
2. Improved sanitation	100%	5%	Interior:	14%	Invest in infrastructure to improve household access to proper sanitation
			Region 7,8:	40%	
3. Healthcare	Stunting: 0%	12%	Interior:	20%	Invest in healthcare infrastructure and human resources as well as telemedicine in rural areas.
			Region 7,8,9:	27%	
	Vaccination of children 100%	22%	Interior:	44%	
			Region 1,9:	55-59%	
4. Primary school	Attendance 100%	3%	Region 1,2:	4.5%	Provide conditional cash transfers to incentivize education, cover transportation costs, and keep children in school especially in Regions 1,2
	Dropout 0%	4%	Region 1,2:	13-18%	
5. Secondary school	Attendance 100%	15%	Interior:	22%	Provide secondary education in Regions 1,7,8
			Region 2,7,8:	23-25%	
			Region 1:	35%	
6. Road	100% of populations	12%[1]	Region 9	38%	Invest in road infrastructure connecting to the interior
			Region 7	45%	
			Region 1	47%	
			Region 8	74%	
7. Electricity		13 %	Interior:	44%	

[5] The OECD average at OECD Online Education Database https://stats.oecd.org/Index.aspx.

	100% of the population		Region 1,9:	75%	Invest in infrastructure to improve access to electricity in the interior
8. ICT	Penetration and coverage 100%	Fixed broadband 66%[2] Mobile Internet 85%[3]			Develop information and communications technology infrastructure in the interior
9. Banking[4]	20 commercial bank branches and 68 ATM per 100,000 persons	12 commercial bank branches and 51 ATM per 100,000 persons[4]	Region 8:	2 bank branches (current total 0)	Expand banking services in remote areas. Develop infrastructure to support mobile banking in the interior
			Region 1:	4 bank branches (current total 1)	
			Region 9:	3 bank branches (current total 2)	

Source: MICS 2014 for Guyana unless otherwise indicated.

1. An overlay of the road network map and the population density map; 2. Telegeography, 2018; 3. GSMA Total mobile internet subscribers at the end of the period, expressed as a percentage share of the total market population; 4. WDI and List of Commercial Banks and Branches 2015, Bank of Guyana

* These numbers show the extent to which current indicators differ from the 2030 development goals. For example, the distance to full coverage of improved sanitation is 5 percent for Guyana and 14 percent for the interior, meaning that 95 and 86 percent of the Guyanese population and the interior population has access to improved sanitation, respectively.

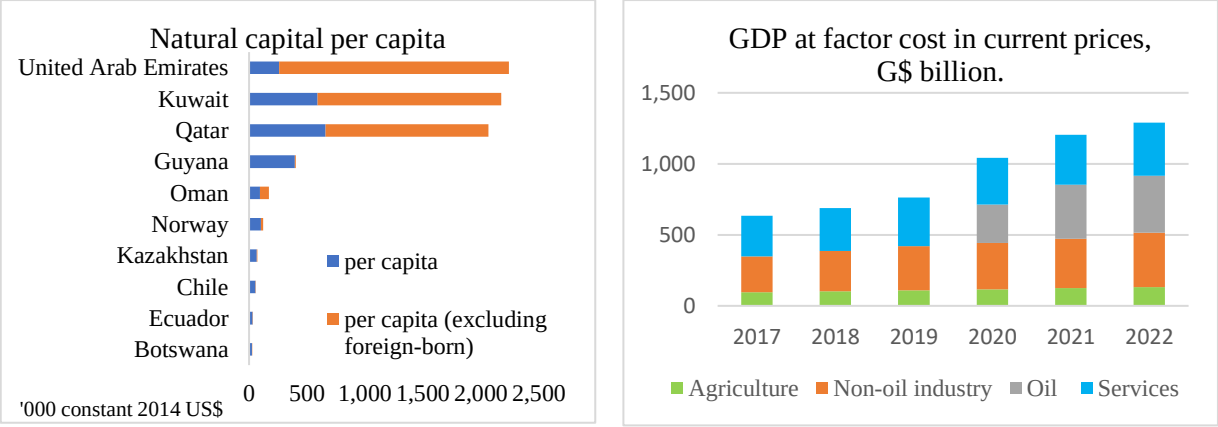
46. This SCD explores how Guyana may transform its newfound oil wealth into an engine for inclusive and sustainable growth. Good governance is crucial as it applies to the management of the oil sector, financial assets and government expenditures. Successful adoption of modern management needs to take account of Guyana's ethnic diversity as reflected in its national institutions and economic activities. Likewise, successful adoption of modern management needs would have to take into account the economy of Guyana. The livelihoods of its people largely depend on the utilization of its rich natural resource base, which has been increasingly under pressure from human activities and climate change. These challenges could be further exacerbated if O&G industry is not sustainably managed. Oil revenues depend on international prices but - even at today's prices - are projected to significantly exceed the absorption capacity of the nonoil economy. This SCD notes that an assessment of the absorption capacity of the nonoil economy should inform decisions on how much to spend in the domestic economy and how much to save in financial assets invest abroad. The report explores options on how to allocate oil revenues for domestic spending, including investment in human, physical and natural capital. Investment in human capital through health and education is important, but also crucial to maintain competitiveness on international markets. Public investment in physical capital will be needed to boost service delivery and limit the impact of climate change on Guyana's natural capital. A basic spatial development package could guide the allocation of resources and address regional disparities offering all Guyanese to benefit from the oil revenues. The report refers to best practices and cautionary examples of other countries but also points to reasons how Guyana may successfully manage this opportunity with a consideration of local context.

1. Chapter 1: A Pivotal Moment in Guyana's Economic History

As Guyana's policymakers strive to manage the coming influx of oil revenue, their decisions will have a profound and lasting impact on the lives of citizens across the country. To highlight the real-world implications of the choices facing the government, this Systematic Country Diagnostic presents the story of "Alenna," a fictional young Amerindian girl from a remote community in Guyana's impoverished hinterland. Although she will have no opportunity to influence the policies that will shape her economic future, the circumstances of her life can contextualize and inform the country's development strategy by underscoring the deeply personal implications of even the most abstract public policy decisions.

1. Following the discovery of massive offshore oil and gas (O&G) reserves and the start of oil production, coupled with the COVID-19 pandemic, the Co-operative Republic of Guyana has reached a pivotal moment in shaping its economic history.[6] Guyana—a small, low-income country with a population of less than 800,000—now has among the world's largest shares of natural resources per capita.[7] Guyana's gross O&G resources are conservatively estimated at over 8 billion barrels of oil, with the potential for further discoveries in its largely unexplored territorial waters. Oil production started in December 2019, and Guyana has already become an oil exporter. [8] The rise of the O&G sector is projected to dramatically alter Guyana's growth trajectory and realign the sectoral composition of its economy (Figure 1-1). While oil prices are expected to fluctuate these may have an impact in the short term, but not substantially impact the outlook in the medium to long term. The variable costs for the current ongoing production facilities, even with protracted low prices, are anticipated to be covered, hence production unlikely to halt.

Figure 1-1 Guyana's Natural Resources per Capita and Growth Trajectory



Note: [Left] Guyana's estimate is based on NPV of projected exports from 5 oil fields at 2014 oil price of US$96.2 per barrel and discount rate of 4 percent. Five oil fields account for 2.9 billion barrels of oil, 37 percent of estimated recoverable resources.
Source: Wealth of Nations Database; World Development Indicators; BoS (historical data) and WB staff (projections).

[6] The first viable oil discovery was made in May 2015, and oil production commenced in December 2019.
[7] This is according to the World Development Indicator (WDI) definitions.
[8] Across this Report, oil produced during December 20-31, 2019 is included in the 2020 production.

2. This systematic country diagnostic (SCD) will focus on Guyana's efforts to utilize its newfound resource wealth to address its fundamental development challenges. Guyana's O&G sector could radically accelerate its social and economic development. Likewise, and considering that the economy of Guyana relies on its vast natural resources, O&G sector could provide an opportunity not only to protect them, but also to maximize their potential. However, the experience of resource-rich countries includes many cautionary examples and managing the risks of resource-driven growth will pose a serious challenge for Guyanese policymakers. This SCD draws on lessons from the international experience of other resource-rich countries, as well as from Guyana's own history with extractive industries, to contextualize the government's development agenda and support a robust policy dialogue between the public sector, the private sector, and civil society.

3. Recognizing the country's exceptional circumstances, this SCD is forward-looking, setting a vision for Guyana as an oil producing economy on the path of inclusive and sustainable growth. Given the magnitude of projected oil production and revenues, Guyana's nonoil GDP could reach US$10.4 billion by 2030, while its overall nominal GDP could reach US$14.0 billion. Assuming the population growth rate remains on its current trajectory, Guyana's per capita GDP would exceed US$16,900 by 2030, enabling the country to reach close to high-income status.[9] However, for this status to meaningfully reflect gains in wellbeing, Guyana must improve its human development indicators, healthcare facilities, and reduce poverty levels while maintaining macroeconomic stability and ensuring the sustainable management of its vast natural resources, including the O&G sector itself. At the same time, recognizing the importance of natural resources for the future of Guyana's inclusive and sustainable growth, Guyana must continue to improve their sustainable management. This requires effectively adapting to growing climate change risks and effectively managing the impacts of global low-carbon transition and ensuring that future growth trajectories incorporate environmental and sustainability concerns. Thus, the development vision for Guyana as a high-income, oil-producing economy by 2030 must include an agenda for broad-based growth, environmental sustainability and social cohesion where all citizens receive an equitable share of the benefits from growth. Given the current COVID-19 pandemic, focus on healthcare and health services infrastructure needs to be accentuated. In this context, the following chapter describes Guyana's current fiscal and economic circumstances, as well as its macroeconomic, poverty, and socio-political situation, and describes some of the key challenges facing resource-rich countries.

The Guyanese Context

4. Guyana's natural resources are abundant and largely untapped. In addition to the vast O&G reserves discovered in its territorial waters, Guyana is endowed with extensive grasslands; tropical rainforests; deposits of gold, bauxite, diamonds, and other minerals; and extensive water resources. Guyana borders Venezuela to the west, Suriname to the east, and Brazil to the south. Most of the Guyanese population lives in the north, along the country's Atlantic coastline. Guyana encompasses four major geographical regions: the interior savannahs, the highland region, the hilly sand and clay area, and the low coastal plain. Over 80 percent of Guyana's landmass is covered by tropical rainforest. The annual deforestation rate was 0.048 percent in 2017, one of the lowest rates in South America and well below the 0.275 percent average for tropical countries. Guyana is a

[9] GDP projections are in nominal terms; the criteria for high-income classification may change if stated in real terms.

carbon sink, and its Nationally Determined Contributions (NDCs) under the Paris Climate Agreement focus on maintaining an environmentally friendly and sustainable path, going forward.[10] However, the degradation and loss of mangrove forests, combined with the impact of climate change on rising sea levels, has resulted in increasingly frequent coastal flooding, making climate-change adaptation an especially important element of the country's public investment policy.

Box 1.1: Guyana's Vision for Green Development

Guyana **has a development strategy that defines policy priorities for environmentally sustainable development**. A Green State Development strategy (GSDS) was developed during 2018-19 which builds on the Low Carbon Development Strategy (LCDS). Recognizing the value of Guyana's forests, the LCDS was focused on a low-carbon, low-deforestation, climate resilient development pathway. The LCDS was launched in 2009 and updated in 2013 identifying the country's climate commitments and priorities up to 2015. Building on the LCDS, the GSDS is aligned with the UN's Sustainable Development Goals and aims to address the economic, environmental, and social dimensions of development through public investments that promote sustainability. The GSDS's priorities are focused on three areas: managing natural-resource wealth, supporting economic resilience, and building human capital.

Managing natural resource wealth: establishing sound fiscal and monetary policies and sustainably managing the country's natural resources. The strategy prioritizes the creation and operationalization of a sovereign wealth fund (SWF) to manage fiscal revenues from the O&G sector. Through the national budget process, public investment programming should transition to a medium-term expenditure framework. The development of natural resources will be supported by a national land-use plan, institutional mechanisms to enable coordination between agencies with competing priorities, and the resolution of outstanding land rights issues. Activities launched under the Low Carbon Development Strategy will continue: current levels of deforestation will be maintained, the REDD+ monitoring, reporting and verification system will be strengthened, and new areas for conservation will be established, with 2 million hectares set aside for the protection of biodiversity and ecosystem services.

Supporting economic resilience: focus on promoting economic competitiveness and resilience through environmentally sustainable and inclusive economic diversification. Resource extraction will be carried out in accordance with stringent standards, evidence-based environmental and social safeguards, and robust compliance incentives. Access to finance, equipment and skills training will support economic diversification. The growth of services subsectors such as business-process outsourcing, tourism, and technology will create new employment opportunities, while improvements in the business environment, including reforms to tax administration and the judicial system, will encourage private-sector development and foreign investment. Infrastructure investment will meet high standards for resilience against climate risks while minimizing waste, improving energy efficiency, and reducing emissions. A shift to a modern, sustainable, low-carbon transportation sector will be incentivized.

Building human capital: Actions under this policy area are designed to address Guyana's poor education and health indicators. Priority is to eliminate disparities in health and education outcomes between coastal and hinterland communities, upper- and lower-income households. Social development policies will prioritize primary and secondary education, nutrition and food security, and improved access to basic

[10] Guyana has begun national consultations to revise its NDCs to reflect new development priorities and strategies along with the start of petroleum production. The revised NDCs will articulate clear and realistic targets and include the agriculture and transportation sectors, providing baseline data and indicators for measurement and monitoring.

healthcare services. Slowing the emigration of skilled professionals, or even attracting the return of skilled workers from the Guyanese diaspora, will be an especially crucial challenge. Transparency, accountability and capacity strengthening of public institutions will support good governance and drive greater efficiency in the delivery of government services.

5. Prior to the discovery of oil, Guyana had long struggled to transform its resource wealth into inclusive and sustainable growth.[11] Despite its abundant natural resources, Guyana had the second-lowest GDP per capita in South America in 2018 at just under US$5,000, and its national poverty headcount rate was among the highest in the LAC region at 43.4 percent (Figure 1-2).[12]

6. Guyana's economic reliance on primary commodities, vast infrastructure deficit, weak public institutions, deep regional disparities, and low levels of human capital weakened the impact of growth on poverty reduction. Between 2006 and 2017—the economy's most recent sustained expansion, when the annual GDP growth rate averaged about 4 percent per year—a one percent increase in GDP per capita was associated with a mere 0.5 percent decline in the poverty rate. By contrast, 1 percent of GDP growth was associated with a 1.2 percent decline in the poverty rate in Paraguay and a 2.3 percent decline in Ecuador. Guyana's income Gini coefficient, a key measure of inequality, stood at 0.48 in 2017, and the median monthly income was US$192 in 2011 purchasing-power-parity terms.

Figure 1-2: Poverty Rates, Guyana and Comparators, 2017

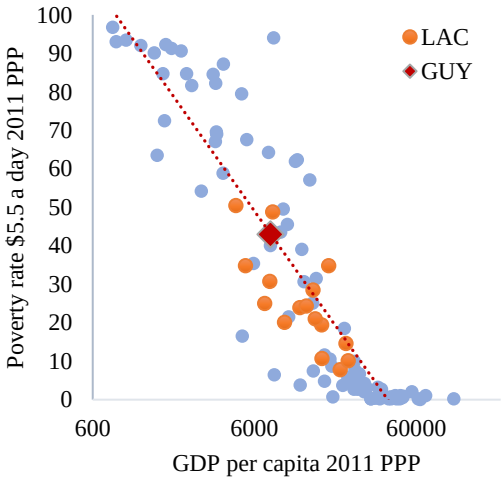
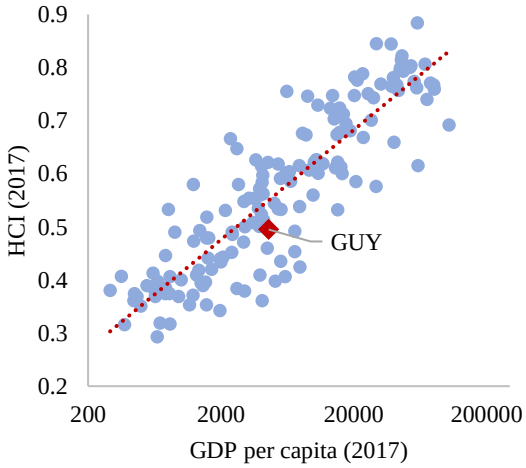


Figure 1-3: Human Capital Index Scores, Guyana and Comparators, 2017



Source: World Development Indicators

[11] See Annex 1: Guyana's Development Patterns, 2006-17.

[12] Income poverty rate estimated from the Labour Force Survey 2017, measured at US$5.5 per person per day in 2011 PPP terms. See Annex 2: Income poverty methodology.

Table 1-1 Poverty Rates by Socio-Economic Group, 2017 (%)

Household Characteristics				Individual characteristics			
Age of head		Remittances		Ethnicity		Labor force	
15-24	34.0	Non-recipient	44.7	Afro	32.5	Employer	24.9
25-40	50.8	Recipient	27.4	Mixed	42.2	Private employee	23.4
41-64	41.9	Gender of head		Indo	44.7	Public employee	16.5
65+	37.1	Male	42.8	Amerindian	57.5	Self-employed	36.6
Education of head		Female	44.6	Others	24.4	Unpaid worker	51.1
Less than primary	54.9	Dependency ratio		Regions		Employment sector	
Primary	42.7	<0.5	38.2	Urban coastal	35.0	Agriculture	36.7
Secondary	33.9	0.5	52.0	Rural coastal	44.5	Mining/quarrying	19.0
Tertiary	21.1			Rural interior	57.1	Industry	23.7
						Services	23.4

Source: Labor Force Survey 2017
Note: Poverty rates are measured at US$5.5 per day in 2011 PPP terms.

7. Poverty is concentrated in the country's rural interior, with especially high poverty rates among indigenous communities. Three-quarters of the population and over 80 percent of the poor live in rural areas. In 2017, poverty rates ranged from 57 percent in the rural interior to 35 percent in the urban centers on the coast, but rural coastal areas were home to two-thirds of the poor (**Error! Reference source not found.**). Nonmonetary poverty indicators are also high, and Guyana's score on the World Bank's Human Capital Index was estimated at 0.49 in 2017, lower than what its GDP per capita would predict (Figure 1-3).

8. The COVID-19 pandemic has exposed Guyana's weak health system. Guyana ranks 137th out of 195th in the global health security index and is particularly weak in early detection and reporting of epidemics as well as having an inadequate health system to treat patients and protect health workers. If not contained, the outbreak will likely strain the health system's capacity. Guyana has 1.6 hospital beds per 1,000 people, lower than the LAC average of 2.2 and the Caribbean average of 2.3 (2014). Access to basic health care services is limited especially in rural areas, and the problem is expected to be more challenging during the pandemic as testing and treatment of COVID-19 will likely be carried out at the national and the four regional hospitals.

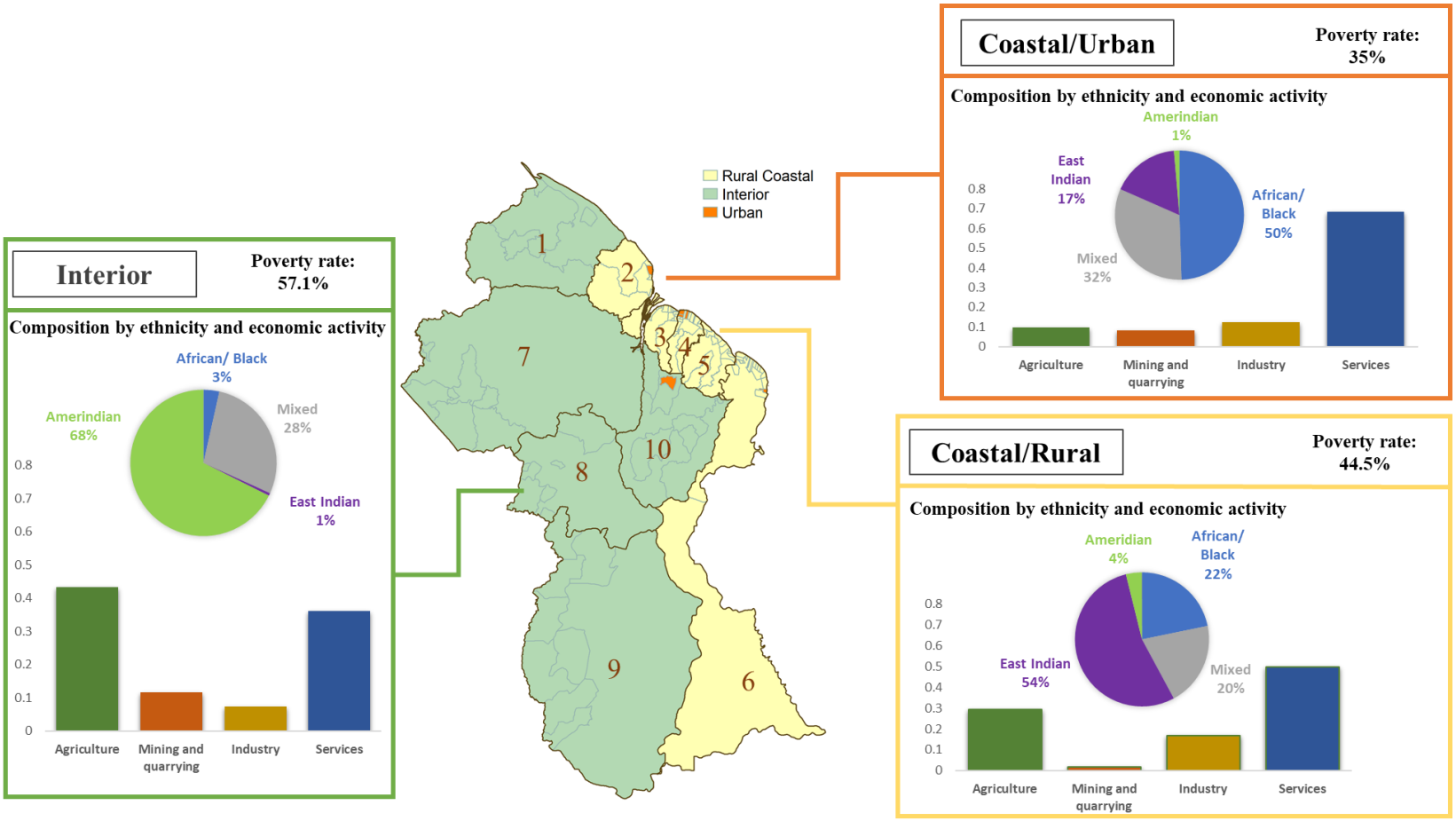
9. Guyana's economy has long focused on primary commodities, and economic activity is concentrated in the agricultural and mining sectors. Agriculture employs most of Guyana's workforce and is critical to the livelihoods for poor households (**Error! Reference source not found.**). Sugar and rice are the country's main cash crops, and various forms of agro-processing—including rice milling and the production of molasses and rum—are a major component of the country's small industrial sector. Bauxite mining has been an economic mainstay since the colonial era, and Guyana also possesses substantial reserves of gold, diamonds, manganese, and other valuable minerals. Gold ore, bauxite ore, and alumina are all major exports, but Guyana's limited industrial base and deficient infrastructure—especially its costly and unreliable electricity supply—preclude any sophisticated mineral processing or other forms of energy-intensive manufacturing. Other exports consist largely of primary commodities, including timber and ocean shrimp, though the country's modest textile and traditional crafts subsectors are important contributors to manufactured exports.

10. Guyana's resource-based growth model has created limited jobs, contributing to lack of inclusive development. High-value mining exports put upward pressure on the real effective exchange rate, weakening the competitiveness of firms in non-resource tradable sectors and undermining the development of more sophisticated forms of agriculture and manufacturing. Between 2006 and 2017, the sustained growth of the capital-intensive mining sector yielded limited employment creation, mostly in informal artisanal mining. Meanwhile, the appreciation of the real exchange rate during the period damaged the competitiveness of manufacturing, and as manufacturing employment contracted agriculture absorbed some of the excess labor at declining wages. Non-tradable services expanded, consistent with the typical pattern for resource exporters, but the service sector produced few high-paying jobs. These factors have contributed to an economic structure that disproportionately benefits households at the top of the income distribution.[13]

11. Guyana's economic development pattern and poverty dynamics are marked by regional and rural/urban disparities. Much of the economic activity associated with the resource sector, including both non-tradable services and the public administration, has been concentrated in urban areas, deepening spatial disparities in income levels and poverty rates. Meanwhile, underinvestment in infrastructure and human capital exacerbates competitiveness challenges and perpetuates socioeconomic disparities, including the concentration of poverty in rural areas. The absence of a robust industrial sector to provide employment for the burgeoning rural workforce has kept agricultural wage rates low and discouraged investment in agricultural capital.

[13] Between 2006 and 2017, income of the bottom 40 percent grew more slowly than average income of Guyanese households, while income inequality increased – as measured by the Gini coefficient, which increased from 0.46 to 0.48 (World Bank staff estimates using the SLC-HBS 2006 and the LFS 2017).

Figure 1-4: Guyana's Administrative Regions, Poverty Rates, Ethnic Groups, and Dominant Economic Activities



Source: LFS 2017. Composition shows economic activity among the employed.
Note: Guyana comprises ten administrative regions: Region 1 - Barima Waini, Region 2 - Pomeroon-Supenaam, Region 3 - Essequibo Islands-West Demerara, Region 4 - Demerara- Mahaica, Region 5 - Mahaica-Berbice, Region 6 - East Berbice – Corentyne, Region 7 - Cuyuni-Mazaruni, Region 8 - Potaro-Siparuni, Region 9 - Upper Takutu- Upper Essequibo and Region 10 - Upper Demerara-Upper Berbice. The urban-rural division comprises three distinct areas: the urban coastal area, the rural coastal area and the rural interior, each housing 26 percent, 64 percent and 10 percent of the population respectively. Region 1,7,8,9 together with most parts of Region 10 are referred to as the interior.

12. Guyana's development pattern also involves an important ethnic dimension across key areas of economic activity. Guyana's four major ethnic groups are the Indo-Guyanese, the Afro-Guyanese, indigenous Amerindian Guyanese, and Guyanese of mixed ethnicity.[14] Historically, the first two groups have been dominant in the political arena, while the third remained largely isolated from national politics. However, the Amerindian constituency has recently asserted itself as a potentially important electoral force, while the number of mixed-ethnicity voters has grown significantly. Different ethnic groups are associated with specific geographic regions and economic activities. Rural coastal areas are home to a large share of Indo-Guyanese, who also dominate the agricultural sector. Half of the urban population is Afro-Guyanese, who account for the largest share of employment in the services sector and the public administration. Amerindian Guyanese live primarily in inland rural areas and are frequently engaged in smallholder agriculture, forestry, mining, craftwork, and traditional livelihoods (**Error! Reference source not found.**).

13. Given the ethnicity base division of economic activities, public policy decisions favoring specific sectors have had important social implications. Socialist policies adopted in the 1960s and 1970s reduced agricultural output and bankrupted many small rice farmers, who were mainly Indo-Guyanese. Economic liberalization and austerity programs during the late 1980s and 1990s subsequently depressed public-sector wages, affecting many Afro-Guyanese households (Gafar 1996). Much of the Amerindian population remained isolated from the impact of public policies and was also largely excluded from economic opportunity. However, over the past decade employment among both poor Afro-Guyanese and Amerindian households has shifted toward the rapidly growing services sector, which contributed to a drop in poverty rates among both groups.[15]

14. Monetary poverty in Guyana is accompanied by deficiencies in nutrition, health, education, and quality-of-life indicators. Unequal access to opportunities has further weakened the impact of economic growth on poverty reduction. Labor-force participation rates have traditionally been lowest among women and among the bottom 40 percent of the income distribution. Traditional gender roles that influence women's participation in labor markets are especially prevalent in rural areas, and women make up a disproportionate share of workers in the informal sector. While access to education is almost universal, indicators of education quality are below the LAC average, and low returns to education in the domestic economy contribute to high rates of emigration (Box 1.2). The provision of education and healthcare is especially challenging in rural areas and the interior, where low population density and poor infrastructure greatly increases the marginal cost of social services. Healthcare facilities are concentrated in urban centers, contributing to large urban/rural disparities in health outcomes. Rural coastal areas experience high infant mortality rates, while stunting in rural interior is twice that in urban areas. These disparities may get accentuated if COVID-19 testing and treating facilities are not available in rural areas, limiting the options for containing the spread of the virus in these areas.

15. Gender-based and youth violence is a pervasive problem in Guyana, which undermines its social development. Children and women traditionally have specific social and

[14] See Annex 3 Indigenous population of Guyana.

[15] Other ethnic groups, including Guyanese of European or Chinese descent, are excluded from the analysis due to their small population size.

economic roles in their households or communities, and a mix of social norms and cultural practices influences the prevalence of violence against children and women.[16] A recent survey found that tolerance for a husband hitting his wife if she neglects the household chores was higher in Guyana than it is among other Caribbean and LAC respondents.[17] At least one in three Guyanese women reports being a victim of gender-based violence. Youth are often the victims and perpetrators of many types of violence, including homicides, gang violence, and school violence.

Box 1.2: Guyana: Emigration among Skilled Workers and Migration Policy

Limited employment opportunities in Guyana contribute to emigration, especially among skilled workers. Guyana's emigration rate is among the highest in the world, and in 2017 Guyana's emigrant population was 63 percent as large as its domestic population (**Error! Reference source not found.**). While emigrant workers provide a substantial flow of remittances, the absence of skilled professionals in vital sectors weakens Guyana's economic competitiveness. Guyanese emigrants tend to come from relatively wealthy regions and well-educated families. Roughly half of all Guyanese with a tertiary education emigrate to the U.S. (**Error! Reference source not found.**), and emigration is especially common among white-collar workers. A recent study found that economic and professional opportunities were the main reason for emigration among Guyanese healthcare professionals (Bleeker and Deonandan, 2016).

Figure 1-5: Emigrants (% of population)

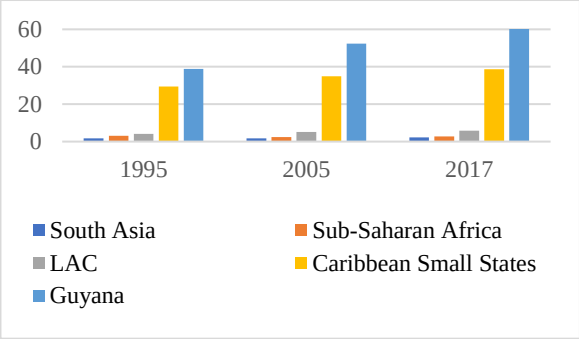
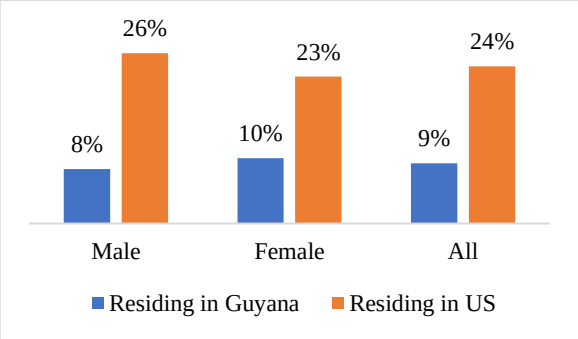


Figure 1-6: Percentage of Individuals with Tertiary Education, 2012-15

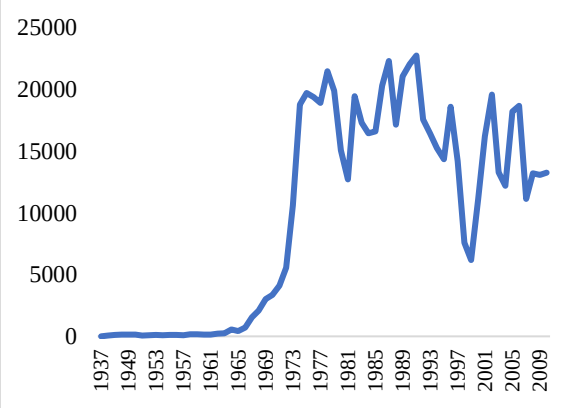


Source: UN migration database; American Community Survey 2015; Guyana Census 2012.
Note: Migrants are restricted to 20+ years old and migrated to the US after age 20.

While emigration is common among small states, a combination of economic and political forces drives Guyana's exceptionally high emigration rates. The state-led development strategies of the 1970s boosted emigration flows, especially among skilled workers. In 1970, 25 percent of highly skilled emigrants had previously been corporate executives or specialized professionals such as doctors, lawyers, engineers, administrators, or supervisors (Vezzoli, 2014). Due to political factors, emigration was especially common among Indo-Guyanese. Since 1975, Guyana's emigration flows have remained high, reflecting limited job opportunities, high rates of crime and violence, pervasive corruption, and political instability. While the emigration rate has risen steadily in recent years, remittance flows to Guyana have declined both in nominal terms and as a share of GDP (**Error! Reference source not found.**, **Error! Reference source not found.**).

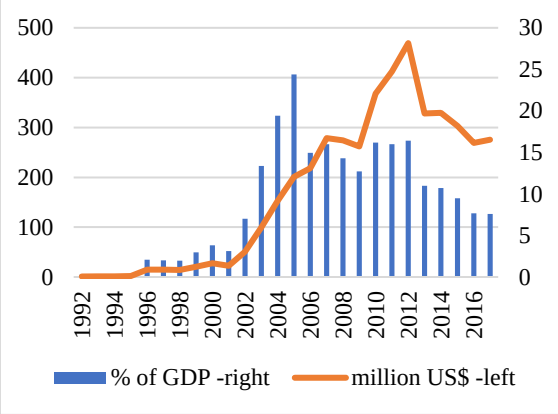
[16] UNICEF (2016) The Situation Analysis of Children and Women in Guyana
[17] LAPOP, 2014/15.

Figure 1-7: Total Emigration Flows from Guyana



Source: DEMIG (2015) DEMIG C2C, version 1.2, Limited Online Edition. Oxford: International Migration Institute. www.migrationdeterminants.eu

Figure 1-8: Personal Remittances Received



Source: World Development Indicators, World Bank

Low returns to education encourage emigration among skilled workers in both the public and private sectors. The average rate of return to education in Guyana is 6.2 percent, well below both the global average (9.1) and the LAC average (9.4).[18] Emigration drains the public sector of the skills necessary to manage public services and resources effectively. Leveraging Guyana's natural wealth to ensure inclusive and sustainable growth will require building the capacity of the public sector by strengthening education and training systems, building the capacity of the public administration, and establishing incentives for skilled workers to remain in the country. Likewise, the success of Guyana's efforts to reduce emigration rates among skilled workers in the private sector will hinge on the economy's capacity to create better-quality, higher-paying jobs.

Oil resources will radically alter migration incentives, and Guyana must establish a balanced migration policy. Migration policies play an important role in determining the flows, conditions and consequences of international migration (Bassarsky et al., 2013), and a revised policy should reflect the government priorities for immigration levels, attracting and retaining highly skilled workers, encouraging return of Guyanese emigrants, and promoting the involvement of diaspora in the country's development.

The Challenges of Resource Wealth

16. Guyana's massive O&G reserves offer an unprecedented opportunity to reduce poverty, improve healthcare, and raise living standards. However, both the international experience and Guyana's history with extractive industries underscore the risks that resource wealth can pose to sustainable and inclusive growth. Large endowments of natural resources are associated with both highly positive and deeply negative outcomes, and the latter are most likely to materialize in countries with low levels of public administrative capacity, high levels of corruption, weak public institutions, and poor governance indicators (Box 1.3). Deep regional disparities, areas of entrenched poverty, and ethnic fragmentation may increase the vulnerability of a resource-rich country to adverse political and economic consequences, including violence and

instability. However, empirical evidence shows that the offshore location of the oil resources reduces the risk of conflict.[19]

Box 1.3: The "Resource Curse" and Socio-Political Stability

Large natural-resource discoveries in developing countries have been linked to a set of negative outcomes collectively known as the "resource curse." In principle, natural resources should enable developing countries to rapidly improve their infrastructure, public services, and living standards, but in practice resource revenues are often associated with economic decline, worse development outcomes, corruption, and autocratic rule (McNeish, 2010).

The Dutch disease is a commonly cited example of the resource curse. Large revenue flows from natural resources lead to real exchange rate appreciation or inflation, decreasing competitiveness of non-resource tradable sector while fueling demand for non-tradable goods. An increase in the relative price of non-tradable to tradable goods shifts production and resources away from the non-resource tradable sector toward the resource and the non-tradable sectors. Price distortions create a so-called deindustrialization, resulting in productivity losses, labor reallocation and job losses.

Overdependence on natural resources increases the country's susceptibility to external shocks. Resource-rich countries tend to have an undiversified economic base. While natural resources become a major export good, the Dutch-disease effects further reduce other exports. Lack of diversification exacerbates the country's risk of volatile commodity prices.

Natural resources tend to have limited local linkages and crowd out the private sector activity, resulting in insufficient employment creation. While the resource sector tends to produce large flows of revenue, it often adds few jobs to the economy with limited linkages to the nonoil economy. Resource revenues allow the government to expand public sector employment and increase transfers. Adding to the decline of the non-resource tradable sector due to the Dutch-disease effect, the resource sector and the public sector attract skilled labor and set high reservation wage, to the detriment of private sector development.

Resource rents, profits made from extracting natural resources, accentuate rent-seeking behavior, violence, and conflicts, especially where institutions are weak. Research suggests that developing countries that are highly dependent on primary commodities face elevated risks of violent conflict and poor governance (Bannon and Collier, 2003). Weakening state capacity can also lead to violence, because a state facing internal conflict has less incentive to build up its legal infrastructure and fiscal capabilities (Besley and Persson, 2009; Fearon, 2005). Natural resources are often spatially concentrated, which can lead to contention between national governments, local communities, and the rest of the country (Fearon and Laitin, 2003), and grievances may arise if resource revenues are perceived to be shared unequally (Caselli et al., 2015). The risk of conflict appears to be particularly acute among oil-producing countries, while other primary commodities are not as strongly linked with violence and political instability (Ross, 2004; de Soysa and Neumeyer, 2007). Urgent development needs can also encourage the mismanagement of resource revenues by intensifying competition between interest groups and weakening incentives to save for future generations. Finally, ethnic fragmentation and weak public institutions may contribute to a climate of distrust that increases the risk of resource-related conflict (Huntington, 1996; Horowitz, 1985).

[19] Anderson et al. (2017).

17. The country faces major governance challenges, and most of its World Governance Indicators are in the bottom half of the global ranking.[20] A large influx of O&G revenues could exacerbate governance challenges and intensify ethnic tensions. Managing resource revenues in an equitable, transparent, and sustainable manner will be crucial to maintain social and political stability in Guyana. High levels of crime and violence already hinder the country's economic development, and competition over resource rents or a sharp rise in economic inequality could compound these challenges and exacerbate the negative impact of oil exports on the nonoil economy.

18. High levels of exposure to violence and social tolerance for violence are not only a critical social challenge, but also a binding constraint on investment and economic growth. Guyana's indicators of crime and violence exceed the global average, though they remain below the LAC averages. High crime rates discourage foreign investment, divert scarce resources to security, and contribute to the emigration of skilled professionals. High levels of crime and violence can also weaken trust in public institutions, particularly the criminal justice system. In 2016, one-quarter of Guyana's citizens identified security, crime, and violence as the most pressing issues facing the country.[21] The ongoing crisis in Venezuela has intensified insecurity in border regions, and an estimated 10,500-14,500 Venezuelan refugees have sought sanctuary in Guyana.[22] Venezuelan refugees are settling in communities that already face significant strains on basic social services. Moreover, violent gangs (*sindicatos*) have taken over the illicit cross-border trade in gasoline and affect residents who work in the region.[23]

19. Guyana is a functioning democracy, yet public policy involves little direct public participation. Guyana features an active press and a robust civil society, and political parties form freely and operate without interference.[24] Public engagement is critical to the allocation of resource revenues, as participatory mechanisms can help governments achieve better outcomes while encouraging social inclusion and promoting confidence in the fairness of government institutions.[25] However, public engagement in Guyana's policy process has traditionally been limited and is often conditioned by whichever group holds political power. Weaknesses in public institutions and justice system, create opportunities for crime and corruption.

20. Regulatory and policy changes that affect business activities are often formulated and implemented with little transparency. The World Bank Global Indicators of Regulatory Governance reflect the country's limited capacity to design and enforce regulations through consultative and participatory approaches.[26] Guyana's performance is poor by both LAC standards and that of low-income countries worldwide. Guyana ranks 134th out of 190 countries on the Ease of Doing Business Index (Chapter 4).[27] Strengthening the transparency of Guyana's institutional

[20] Worldwide Governance Indicators, World Bank. Chapter 3 discusses governance issues in the context of oil economies.
[21] The Latin America Public Opinion Poll 2016.
[22] UNICEF estimates that while some 10,500-14,500 Venezuelans have settled in Guyana, between 40,000 and 60,000 may be entering Guyana on a short-term basis. See: UNICEF, 2018.
[23] The Guardian, 2018.
[24] Freedom House, 2018.
[25] World Bank Strategic Framework for Mainstreaming Citizen Engagement, 2013
[26] Global Indicators of Regulatory Governance (GIRG), World Bank.
[27] Doing Business Indicators, World Bank.

and policy frameworks and encouraging public participation in the design of policies, regulations, and budgetary decisions will be vital to create a healthy business climate and enhance trust in government institutions.

21. Furthermore, the growing exposure to O&G for growth and development needs to be balanced with environmental sustainability and climate change. Given the magnitude of anticipated climate change impacts that Guyana is facing and global efforts to mitigate them, the O&G sector faces the potential of a global low-carbon transition. That said, the O&G industry can also take account of environmental sustainability principles, including by providing resources to invest in a low-carbon future.

22. Guyana faces an enormous challenge, but it has considerable strengths to draw on as it strives to transform its economy to build shared prosperity and achieve high-income status. Guyana has had regular transitions of power after elections. While oil presents novel challenges, policymakers can learn from the country's experience with the mining sector to inform their strategy for managing resource revenues. High levels of emigration have depleted the country's human capital, but the diaspora could become a considerable asset if the government takes steps to encourage the return of skilled professionals. The country must establish a balanced immigration policy that includes measures to encourage the return of citizens living abroad and facilitate investment by the diaspora (Box 1.2). The current fully offshore location of O&G development will reduce its linkages to the national economy. Beyond the extractive industries, Guyana possesses abundant renewable natural capital. Although the O&G sector poses environmental risks, the fact that it is currently concentrated offshore helps mitigate threats to sectors that depend heavily on the quality of the natural environment, such as agriculture and tourism.

23. This SCD explores the transformative potential of Guyana's oil sector. It seeks to situate the risks and challenges of managing resource revenues in the country's social, economic, and institutional context. The structure of the SCD is as follow:

- Chapter 2 evaluates strategies for ensuring that the exploitation of Guyana's oil reserves delivers sustainable growth, with the returns shared equitably across generations. This chapter: (i) estimates how much oil revenue can be spent effectively in the short term and offers guidance for investing excess revenues through a sovereign wealth fund (SWF); (ii) highlights the need to adopt measures to stabilize the real effective exchange rate at a level that maintains export competitiveness and (iii) highlights the need to address the macroeconomic risk arising from environmental and disaster risks.
- Chapter 3 highlights the three key governance challenges, which involve managing: (i) the O&G sector, (ii) foreign assets invested in a SWF and (iii) public expenditures, notably investment in public infrastructure. Addressing the challenge of managing the public sector as well as leveraging the private sector is a common theme to all three issues.
- Chapter 4 considers the role of the oil sector in Guyana's economic transformation and job creation. This chapter: (i) examines the impact of oil on the local labor market, drawing on the experience of Guyana's mining industry and other oil-producing countries; (ii) highlights the importance of diversification; and (iii) examines the role of public investment in facilitating economic transformation.

- Chapter 5 focuses on leveraging oil resources to support sustainable gains in human capital formation, healthcare infrastructure and poverty reduction. This chapter: (i) reviews Guyana's social development indicators and spatial disparities in development outcomes; and (ii) assesses how best to mobilize oil revenues to expand coverage and improve quality of public health, education, and social protection systems.
- Chapter 6 concludes the SCD with an analysis of pathways to advance the country's vision for broad-based and sustainable social and economic development – a harmonious future along with environmental resilience.

2. Chapter 2: Oil and Intergenerational Equity

> *…Alenna and her family will be affected by policies for saving and spending the country's oil wealth. For example, they may benefit from cash transfers or improved health and education services. However, in the region where she lives, productive resources are fully employed, and increased spending will quickly lead to higher prices. Investment in public infrastructure and human capital will gradually increase supply, but the immediate impact will not benefit Alenna and her family. How can the government maximize the positive impact of fiscal policy? What combination of savings in the form of foreign financial assets, local investment in infrastructure and public services, and cash transfers and other social protection policies will most benefit Alenna and her family?*

1. Guyana's newfound natural resource wealth presents policymakers with critical tradeoffs between spending, investment, and savings. This chapter discusses the implications of alternative strategies for allocating the fiscal resources generated by the oil sector. The impact of resource allocation depends on the total size of the country's oil reserves, the trajectory of oil production over time, the economic possibilities created by the development of the oil sector itself, and the absorptive capacity of the nonoil economy. Each of the strategies discussed is subject to a high degree of uncertainty due to the inherent unpredictability of oil production and export prices.[28]

2. The magnitude of the country's anticipated resource boom presents a serious risk that oil revenues could be spent too quickly, overwhelming the public sector's capacity to manage expenditures prudently while distorting prices and economic incentives. Total fiscal revenues from the development of the country's first two oilfields are projected to exceed US$20 billion, dwarfing Guyana's 2019 GDP of US$4.3 billion. The rise of the oil sector will alter the sectoral composition of the economy, provide new resources to finance infrastructure investment, spur direct and indirect job creation, and potentially enable the provision of cheaper and cleaner electricity.[29] However, the international experience highlights the risk that a vast revenue influx can pose to good governance and the competitiveness of traditional exports. The propensity of resource revenues to erode the quality of public institutions while undermining the development prospects of the nonoil sectors is known in the literature as the "resource curse" (see Box 1.3).

3. To manage the vast influx of fiscal revenue from natural resources, countries around the world have established sovereign wealth funds (SWFs).[30] An SWF can help break the vicious cycle of the resource curse (Figure 2.1). Many SWFs are designed to absorb all oil revenues and limit withdrawals to a level that can be effectively absorbed in the short term without overwhelming the expenditure capacity of public institutions and/or distorting macroeconomic

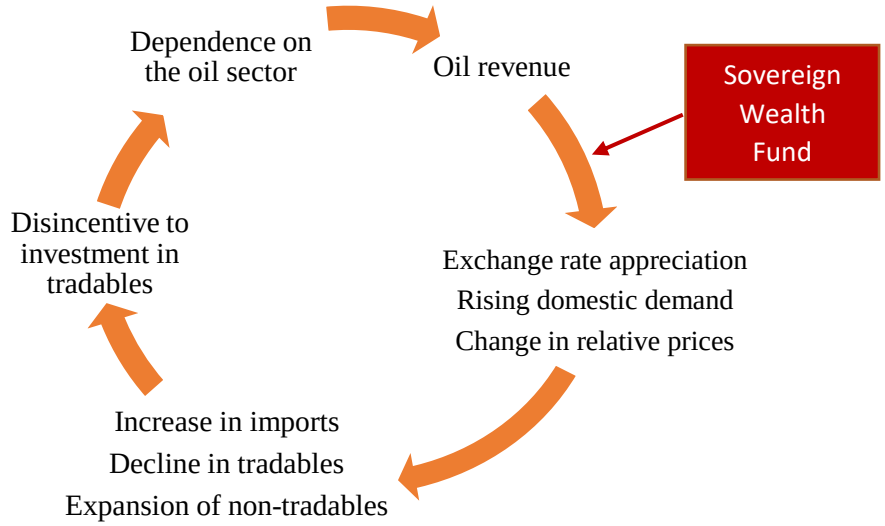
[28] The fiscal oil revenues are influenced by the terms of government contracts with oil companies, but international oil prices and domestic oil production schedules will ultimately determine the size and pace of revenue inflows. Oil price and output projections get updated frequently. As mentioned earlier, while oil prices are expected to fluctuate these may have an impact in the short term, but not substantially impact the outlook in the medium and long term. The variable costs for the current ongoing production facilities even with protracted low prices are anticipated to be covered, hence production unlikely to halt.

[29] Guyana's newfound natural gas resources could replace the costly, emissions-heavy and highly polluting heavy fuel oil (HFO) currently used for power generation.

[30] Guyana's Parliament approved a Natural Resource Fund in 2019, although without bipartisan support.

incentives. Revenues that remain in the SWF can be invested in foreign financial assets, enabling the country's natural resource wealth to generate consistent returns across generations. This chapter discusses the magnitude of Guyana's expected fiscal revenues from the oil sector, the absorptive capacity of the economy, policies to sterilize the impact of capital inflows on the real effective exchange rate, and how public investment can mitigate the fiscal risks posed by natural disasters. Improvements in governance systems that can increase the absorptive capacity of the economy, and measures to strengthen the institutions tasked with managing fiscal revenue are discussed in Chapter 3.

Figure 2.1: A sovereign wealth fund can break the vicious cycle of the resource curse.



Source: WB staff

2.1 The Size of the Oil and Gas Discovery and Its Impact on Fiscal Revenues

4. Guyana's first significant oil discovery was not made until 2015, but following a succession of large-scale finds, the country now holds the world's 17th largest oil reserves. Advances in technology and an improved understanding of the local geology yielded Guyana's first major oil discovery, and subsequent exploration efforts have achieved an unprecedented 89 percent success rate. Moreover, Guyana's prospective oil blocks remain largely unexplored, and the country's total oil and gas production potential may be substantially greater than current estimates indicate. As of February 2020, the country's confirmed gross recoverable resources exceeded 8 billion barrels of oil equivalent, slightly less than the confirmed oil resources of Angola. Guyana currently possesses about 15 percent of all conventional oil[31] discovered globally since 2015, and anticipated exploration activity in 2020 raises the possibility of additional discoveries.

5. The value of fiscal oil and gas revenue will depend on production volumes, export prices, the costs of production, and the terms of the government's agreements with oil companies. At present Guyana has production-sharing agreements (PSAs) with various O&G

[31] "Conventional oil" refers to liquid oil deposits, as opposed to shale oil, oilsands, or other exploitable hydrocarbons.

companies, negotiated at slightly different terms. Under the PSA signed by Guyana and ExxonMobil's subsidiary, Esso Exploration Production Guyana Limited (EEPGL), annual fiscal revenue comprises a 2 percent royalty on gross production plus 50 percent of "profit oil," which is defined as production that exceeds cost recovery (Section 3.1).[32] The PSA also states that up to 75 percent of total oil revenue after royalty payments will initially be allocated to repay the capital expenditures and operating costs incurred by the oil companies to develop the finds.[33] After the oil company's development investments have been recouped, the rising volume of "profit oil" is projected to dramatically increase fiscal revenues.

6. The development of the oil sector will have a large impact on Guyana's balance of payments, but its direct effects on the nonoil economy in the early years of oil production will be relatively modest, albeit important given the small Guyanese economy today. Oil revenues will boost exports and generate current-account surpluses starting in 2023, as oil companies finance large-scale investments that are recorded as foreign direct investment (FDI) in the balance of payments (Figure 2.2). These investments will then be repaid and recorded as capital transfers in the balance of payments, gradually offsetting earlier FDI inflows. Until 2022, these investments will yield modest company profits and government revenues. Oil company profits are expected to be transferred abroad and will be recorded in the balance of payments as current transfers. While capital transfers are projected to taper off in 2023, current transfers are expected to increase.

7. The fiscal revenue generated over time by the oil sector is projected to significantly exceed the current size of the Guyanese economy. The fiscal revenue from the development of the country's first two fields is expected to total US$ 20.5 billion, assuming World Bank/IMF oil price projections. If the oil price drops to US$25 per barrel for the entire period, fiscal revenues would remain close to US$3.9 billion, close to the size of Guyana's 2018 GDP, with a discount rate of 5 percent yielding a net present value (NPV) of US$1.9 billion (Table 2.1). If oil production is expanded to five fields, the fiscal revenues are projected to increase to US$67 billion, and an NPV of US$26.7 billion. However, during 2020-22, when investment costs are being recovered, fiscal revenue from the sector is expected to range from about 3.3 to 4.0 percent of total GDP, before increasing dramatically in 2023 to 9.5 percent of GDP and 21.3 percent of GDP in 2024.[34]

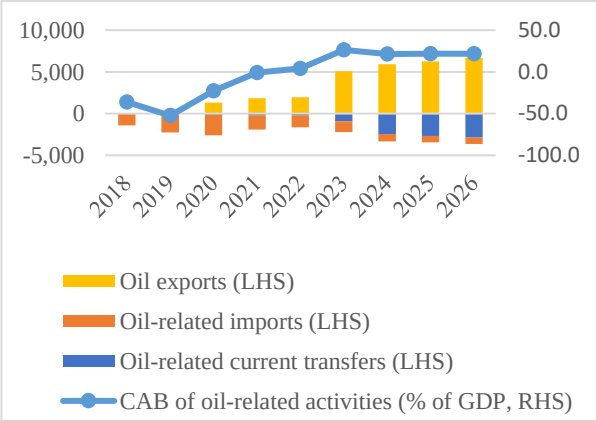
8. The projections in this SCD are based on World Bank oil-price projections as of end-April 2020, and they assume development of the country's first two fields, but an expansion to five fields does not significantly alter the oil sector's anticipated economic impact over 2020-22. An expansion to five fields would contribute to fiscal revenues over time but delay the growth of fiscal revenue by two years, as the investment cost of these fields would be repaid prior to the increase in profit oil.[35] The potential development of additional oil fields is currently under consideration. Oil production is projected to continue even if there is a substantial decline in global

[32] Since 2017, the licensing of new oil exploration firms has been suspended pending the definition of new licensing terms and legal arrangements.
[33] Capital expenditure consists of exploration, appraisal and development costs.
[34] Baseline projections for nonoil GDP are discussed below.
[35] The PSA with ExxonMobil does not have "field level ring fencing" provisions, but instead allows for "block-wide" recovery. As ExxonMobil continues to actively explore within the Stabroek block and plans to develop several fields, revenues from Liza-1 field and subsequent fields will be used to recoup expenses incurred by ExxonMobil as it develops new fields within the block.

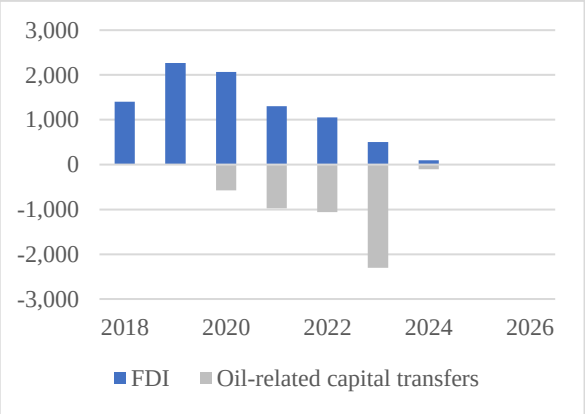
oil prices, which has recently materialized. The variable costs for the current ongoing production facilities even with protracted low prices are anticipated to be covered, hence production unlikely to halt. Lower oil prices increase the length of time during which oil revenues will continue to finance cost recovery, thereby delaying the eventual increase in fiscal revenue generated by profit oil.

Figure 2.2. The Impact of the Oil Sector on Guyana's Balance of Payments, 2018-2026 (US$ millions unless otherwise indicated)

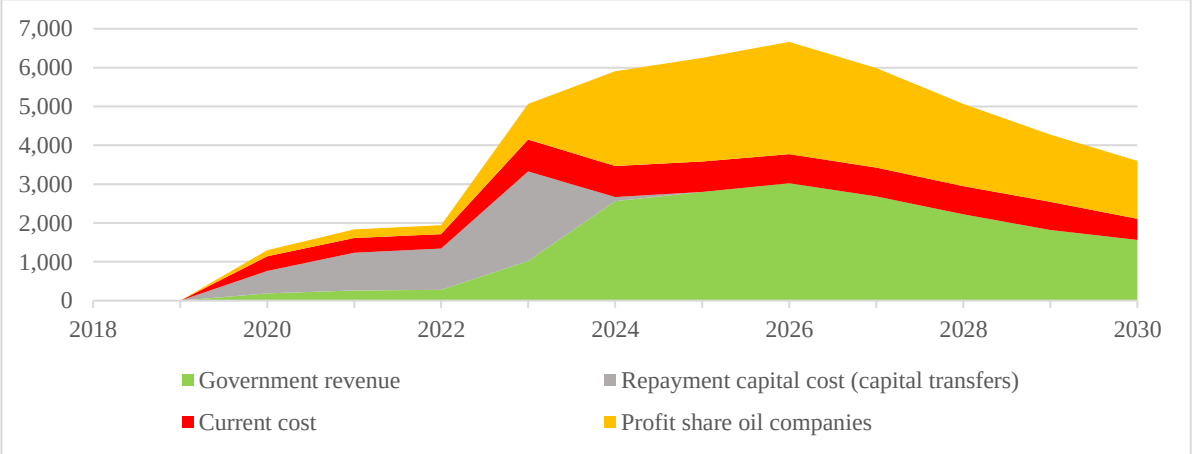
The oil sector is projected to generate massive current-account surpluses starting in 2023…



…reflecting large-scale FDI inflows, which will be repaid through capital transfers.



Fiscal revenue and oil company profits will increase in 2023, after the investments have been repaid, but decline over time as oil is an exhaustible resource



Source: World Bank staff projections.

Note: Oil prices as projected by the World Bank Global Economic Prospects (GEP) as of April 28, 2020. Lower oil prices will lengthen the period to repay the investment capital and hence delay the increase in government revenue; [Top Left] CAB: Current account balance. Above estimate relates to two oilfields (Liza-1 and -2); it does not incorporate fields for which the development plan had not yet been approved as of April 2020.

9. All of Guyana's commercially viable oil reserves discovered thus far are located offshore, and the oil sector will affect the economy primarily through its impact on fiscal revenue. International oil companies are leading the development of the O&G sector in close collaboration with the Guyanese authorities. Production commenced on December 20, 2019, just four years after the first commercially viable deposits were discovered—an extremely short lead time for a major oil discovery in a developing country. While local companies are operating

in the oil sector, and their engagement is expected to deepen over time, activities directly related to oil production will continue to represent only a small share of Guyana's nonoil economy. Although the government has developed a local-content policy designed to promote backward linkages between the oil sector and the nonoil economy, Guyanese firms are expected to focus on a narrow range of oil-related activities (Chapter 4). Consequently, oil production is projected to have a massive impact on specific industries and sectors, but its macroeconomic effects will occur primarily through fiscal revenues and expenditures. In 2019, spending by oil companies accounted for almost 2.5 percent of GDP and created over 1,700 jobs.[36] The sector has had a major spinoff impact on the travel and hospitality industries, boosted wages for workers with specific skills, and created valuable new opportunities for Guyanese firms and entrepreneurs. However, the oil sector's impact on average wages has been modest, and future wage effects will likely be driven by public spending (Section 4.1).

Table 2.1: Oil revenues, 2020-41 (US$ million)

	Total	Cost	Fiscal revenues	NPV of fiscal revenues (a)
Two fields				
GEP prices, April 23, 2020 (b)	61,053	21,369	20,514	8,953
US$ 25 per barrel (c)	27,317	21,369	3,928	1,859
Five fields				
GEP prices, April 23, 2020 (b)	180,399	49,228	67,425	26,669
US$ 25 per barrel (c)	73,115	49,228	12,961	5,291

a: Discount rate 5 percent; b: 2030 levels during 2030-41 c: kept constant during 2020-41.

Source: World Bank staff estimates

2.2. The Economics of Resource Extraction

10. The literature suggests that the sustainable exploitation of non-renewable natural resources requires investment in financial, physical, and human capital. This chapter uses a macroeconomic model to forecast the oil sector's effects on fiscal revenues and expenditures (Annex 5). Macroeconomic modeling helps to determine the optimal levels of government consumption, investment, and savings, but the government's capacity to spend and invest resources efficiently will limit the positive impact of expenditure increases on economic growth and social development.[37] Frontloading expenditure commitments—especially on relatively rigid budget categories such as public sector wages and benefits, subsidies, and fiscal transfers—increases the risk that future expenditures would need to adjust in response to a fall in oil prices or another exogenous shock, with potentially severe fiscal and economic consequences. In addition to its negative implications for expenditure quality and long-term fiscal sustainability, an

[36] In 2019, oil-related jobs employed 0.5 percent of the labor force from the current 2 oil fields; with more oil fields under development, this is likely to increase (see Chapter 4).

[37] Macroeconomic models are informed by assumptions regarding the rate of return on investments, oil-price and production forecasts that are volatile and revised frequently. Plus, there are 'what if' scenario of alternatives for oil being developed over time.

unchecked fiscal expansion will distort prices and macroeconomic incentives, with adverse effects on long-term competitiveness and the welfare of Guyanese households. Investing in foreign financial assets can help manage the growth of domestic demand and smooth savings and consumption patterns, so long as sufficient safeguards for these investments are put in place (Chapter 3).

11. Assuming that oil wealth can be effectively converted into financial capital without excessive risk of mismanagement or macroeconomic distortions, accelerating the use of oil revenue to purchase foreign financial assets may be advisable. Real prices for nonrenewable natural resources have fluctuated, but a clear downward trend is observable over the long term.[38] Meanwhile, financial assets have consistently appreciated in real terms, barring crises episodes. While rapidly converting natural resource into financial assets appears desirable, in practice few countries have managed to invest a sufficient amount of revenue to take full advantage of these trends without experiencing adverse institutional or economic consequences (Box 2.1).

Box 2.1 The Optimal Savings Rate for National Resource Rents

Since extractive industries are unsustainable, the optimal savings rate for resource rents depends on the anticipated horizon over which they will be depleted: the shorter the horizon, the higher the savings rate should be. All other things being equal, a shorter horizon implies that a higher savings rate will be necessary to reach a given level of permanent income and consumption. While the Hotelling rule (Hotelling 1931) states that the export price of natural resources should increase at the worldwide rate of interest, this does not hold if alternatives—such as renewable energy—are developed, and research and development spending on alternative energy tends to increase as oil prices rise.

National savings can be invested in financial assets abroad or in the accumulation of domestic physical and human capital. Investing in foreign financial assets can help smooth the business cycle, which is projected to become more volatile as Guyana's economy becomes increasingly dependent on oil, and future returns can support intergenerational equity. To accomplish these goals, resource revenues should be invested in a sovereign wealth fund with clearly defined rules governing inflows and outflows. Depending on its objectives, the fund should be conservatively managed so that it has adequate resources to contribute to the budget during an economic downturn and/or sufficient long-term assets to yield a consistent return for future generations. The Hartwick Rule (Hartwick 1977) notes that extracting and selling oil amounts to running down capital, unless the receipts are fully reinvested in financial, physical or human capital. A survey by Hamilton, Ruta and Tajibaeva (2005) employs time series data on investment and rents from exhaustible resource extraction from 70 counties and concludes that Venezuela, Trinidad and Tobago and Gabon would all be as wealthy as South Korea if they had followed the Hartwick Rule, while Nigeria would be five times as well off as it was at the time of their survey.

Domestic investment in physical and human capital can boost long-run economic productivity, but the optimal level of such investment depends on the expenditure capacity of public institutions. The ability of Guyana's public sector to effectively select and implement public investment projects is limited (IMF 2017).[39] Moreover, rapidly scaling up public expenditures can distort the production and price

[38] Schwerhoff and Stuermer, 2019.
[39] IMF (2017), Public Investment Management Assessment (PIMA), Technical Assistance Report, December.

structure of the nonoil economy and may strain the private sector's ability to take advantage of new opportunities. For these reasons, the return on public investment is influenced by the pace and scope of institutional capacity-building and by the implementation of complementary reforms to enhance the business climate and reduce regulatory costs.

The optimal size and composition of investments financed by the oil sector depends on the rates of return offered by alternative asset classes. These returns are difficult to assess, and even the best projections are subject to considerable uncertainty. In this context, Guyana and many similar countries have established rules to guide the allocation of investments (Section 3.2).

2.3 Managing Fiscal Oil Revenue, Baseline Scenario

12. Given the anticipated magnitude of oil revenues, channeling them directly into public spending would cause severe macroeconomic disruptions. As noted above, macrostructural modeling can help to estimate the nonoil economy's capacity to absorb fiscal spending.[40] The model uses estimates of potential GDP based on the capital stock, employment rates, and total factor productivity (TFP), which measures the efficiency with which capital and labor are transformed into economic outputs. If employment remains unchanged and TFP continues to grow at a modest annual rate of 1.8 percent,[41] investment by both the public and private sector will increase the capital stock and boost potential output. However, even investing a massive 36 percent of current nonoil GDP in 2019, the capital stock increased by just 6.8 percent in constant prices after depreciation. Consequently, the potential nonoil GDP growth rate is projected to decline gradually from 4.7 percent in 2022 to 4.5 percent in 2030.[42] While rising aggregate demand could cause the actual economic growth rate to exceed the potential rate, it would also boost imports and inflation and would not be sustainable over the long term.[43]

13. Macroeconomic projections suggest that the Guyanese economy may be able to absorb a nominal fiscal expansion of about 9-10 percent starting in 2021. These estimates would need to be revisited regularly and a larger fiscal expansion may be absorbed if the additional expenditures do not contribute to domestic demand.[44] Such an expansion would increase public spending from 33 percent of nonoil GDP in 2019 to 37 percent in 2030. The public debt stock would rise in nominal terms from US$2.5 billion to US$3.7 billion, but it would fall as a share of GDP from 54 percent in 2019 to 27 percent in 2030. Meanwhile, the oil revenue saved as foreign assets in the NRF would enable the government to pay off the entire public debt stock if it chose to do so: these assets are projected to reach US$14.1 billion in 2030, significantly larger than projected nonoil GDP of US$10.4 billion. The model results summarized in Table 2.2 are based on the development of two oilfields, and in the two-field scenario production would peak in 2026 and decline thereafter. Consequently, GDP is projected to decline from 2026 onward. However, these two fields account for only a small share of Guyana's potential oil reserves, and if five fields are brought into production, oil GDP would remain close to its peak until 2030. In each of these

[40] The details of the model are presented in Annex 5.
[41] TFP growth was stable during 2012-18, growing on average by 1.8 percent with a standard deviation of 0.05.
[42] Nonoil GDP growth in 2020 and 2021 is temporarily depressed due to the impact of the coronavirus on private consumption and investment.
[43] Potential output will need to be reassessed regularly, which is one of the tasks of the Macroeconomic Committee under the NRF Act, 2019.
[44] These estimates may also need to be revised to take account of revisions to historical national accounts data.

scenarios, nonoil GDP is insulated from the oil sector and sustains its growth even during years when the oil sector contracts.

Table 2.2. Guyana: Selected Macroeconomic Projections under a Two-Oilfield Scenario, 2021-2030

	2021-25	2026-30
Economic growth annual average (percent)		
Real GDP growth	15.5	-5.0
Real nonoil GDP growth	4.1	4.5
Private consumption	4.9	5.5
Government consumption	4.1	4.8
Investment, nonoil	7.9	5.0
Fiscal revenues from oil sector (annual average)		
US$ million, nominal	1,386.0	2,264.2
As share of GDP (percent)	12.1	16.3
As share of nonoil GDP (percent)	22.5	27.0
Fiscal deficit/surplus as share of GDP (percent)	6.9	12.2
At end of period		
GDP (US$ billion)	13.0	14.0
Nonoil GDP (US$ billion)	6.7	10.4
GDP per capita (US$)	15,977.2	16,930.6
NRF assets (US$ million)	5,258.2	14,141.7
Public debt (US$ million)	3,269.6	3,708.7

Source: World Bank staff estimates and projections

Notes: Economic growth is measured at constant 2006 prices for nonoil GDP and at US$35 per barrel for oil GDP. Projections at current prices based on oil prices as projected by the WB-GEP as of April 28, 2020.

14. Fiscal policies that increase the economy's capacity to absorb public spending would allow for rapid, though still prudent, expenditure growth. The composition of public spending affects the absorptive capacity of the economy, a larger expansion can be absorbed if it does not contribute to domestic demand. For example, public investment to construct a gas pipeline and gas-fired power station will primarily affect imports, as few of the necessary inputs would be sourced locally. By contrast, spending on public-sector wages will have a direct impact on domestic demand and put upward pressure on inflation. However, creating incentives for individuals to increase their personal savings can mitigate the impact of rising public-sector wages and transfers on aggregate demand. To avoid excessive macroeconomic distortions, assessments of the impact of public spending based on its composition must be mainstreamed into the budget process.

15. These projections assume that 27 percent of the fiscal expansion during 2020-30 will be allocated to public investment. Under this scenario, nonoil private investment is assumed to remain robust after a sharp contraction in 2020, increasing from 19.7 percent of GDP in 2020 to 24 percent of nonoil GDP from 2023 onwards. Annual nonoil FDI and private debt inflows are assumed to average over US$0.8 billion, or about 7 percent of GDP. Attracting this level of private

investment would require a significant improvement in the business climate,[45] as well as the guarantee of future economic activity provided by the SWF assets. Nominal wages are assumed to increase steadily as public and private investment bolsters output per worker. Finally, the inflation rate is assumed to increase gradually from over 2 percent to over 4 percent. Trade liberalization and improvements to the business climate are expected to boost competition and attenuate price increases.

16. These projections assume that nonoil exports will remain competitive and continue to grow by close to 3 percent per year on average. Continued export growth will require: (a) productivity growth, (b) wage-cost growth commensurate with productivity growth, and (c) a stable nominal exchange rate. Public investment is assumed to contribute to the productivity of exports. Reforming the tax structure could boost the competitiveness of labor-intensive exports (Box 2.2). The exchange rate is assumed to remain stable due to the sterilization of capital inflows, implying that the government will establish the market infrastructure and administrative capacity necessary for sterilization.[46]

Box 2.2 Tax Policies to Support Export Competitiveness

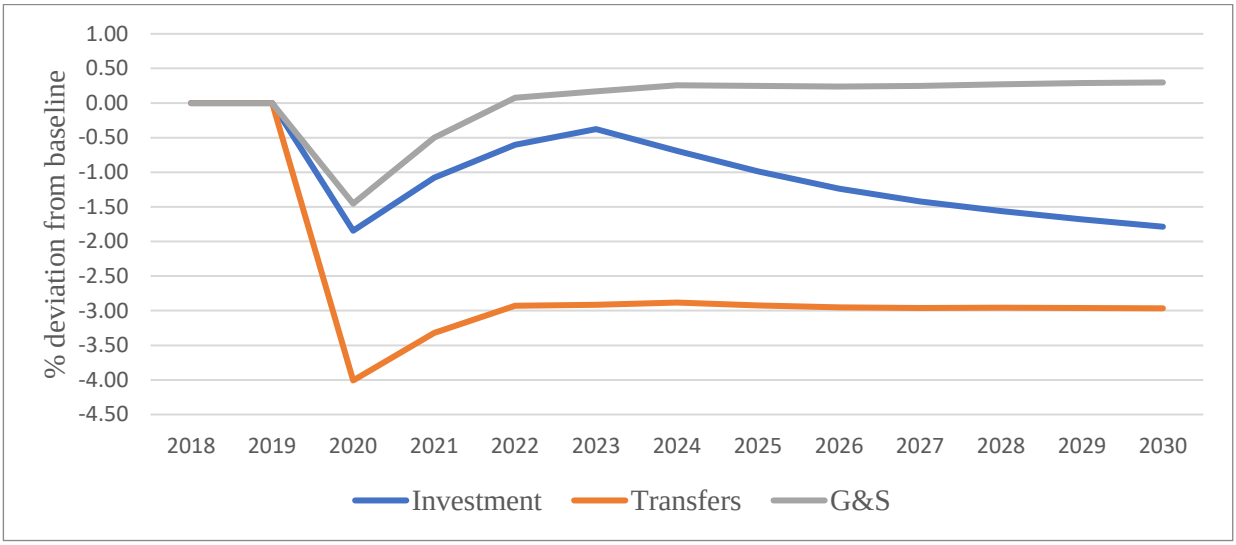
Current and capital inflows boost overall demand, which contributes to rising wages and prices for non-traded goods, undermining the competitiveness of exporters and domestic producers who compete with imports.[47] Lopez et. al. (2008) evaluate policies that governments can adopt to counteract wage increases and minimize real exchange-rate appreciation. They analyze the case of Jamaica, which has high remittances, to estimate the impact of revenue-neutral measures to reduce direct taxation while increasing indirect taxation. They conclude that a reduction in payroll taxes offset by an increase in indirect taxes mitigates the impact of remittances on labor-force participation and export competitiveness. However, they also note the potential negative impact on the income distribution, as direct taxes tend to be more progressive than indirect taxes. In this context, if developing countries opt to shift the tax burden from direct to indirect taxes this would need to be balanced by simultaneously increasing transfers to low-income households.

17. The impact of the fiscal expansion on growth and poverty will depend on the composition of public spending. Government transfers to the poor will have the largest, most immediate and sustained impact on poverty reduction. The short-term impacts of goods and services levels are initially similar but diverge over time: because public investment builds the capital stock and boosts economic growth, its effects on poverty endure, while the impact of spending on goods and services diminishes over time. While these estimates are subject to significant uncertainty, a set of projections based on the above-mentioned assumptions is presented below (Figure 2.3). These scenarios are deviations from the baseline presented in Table 2.2 and would not apply if any of the risks discussed in Section 2.4 were to materialize.

[45] Guyana ranked 134th out of 190 countries in the World Bank's 2019 Ease of Doing Business Index.
[46] Sterilizing capital inflows will require modernizing the domestic debt market and strengthening the analytical and governance functions of the central bank.
[47] Cordon and Neary (1982).

Figure 2.3. Impact of Alternative Public Expenditure Scenarios on Poverty Reduction, 2020-2030

Impact on poverty levels of an additional 5 percent of GDP on public spending



Source: World Bank staff estimates.

2.4 Macroeconomic Risks

18. The scenario described above is subject to significant risks. Addressing the risks posed by the rise of the O&G sector extends well beyond the allocation of the budget and encompasses public investment management, debt policies and management, and measures to mitigate price distortions, and public investment to mitigate the macro fiscal risk of environmental disasters (Table 2.3). Thus far, prudent fiscal management has contained Guyana's on-balance-sheet fiscal risks, but progress on developing the necessary instruments to sterilize capital inflows has been modest. Moreover, the government's ability to manage its rising foreign financial assets responsibly has yet to be tested, and the experience of other developing countries that rapidly accumulated large-scale financial assets is replete with cautionary examples.

19. The international experience underscores the enormous challenge that O&G exports can pose to the management of the real effective exchange rate, and only those oil-producing countries that have developed a sophisticated policy toolkit and successfully sterilized capital inflows have been able to sustain economic growth over the long term.[48] Oil prices are inherently volatile, and the nature, timing, and direction of economic shocks cannot be predicted as the current episode clearly demonstrates. Countries with more sophisticated capital, product, and labor markets are better able to cope with volatility, and the government must maintain a consistent focus on the development and deepening of these markets. Guyana lacks sterilization instruments, and developing them would require complex policy measures and administrative upgrades, including the creation of an electronic system for trading government bonds.[49] In the absence of sterilization, capital inflows will likely drive up prices for non-tradable goods and services, especially real estate, weakening the competitiveness of traditional nonoil exports. An analysis of Guyanese firms that have stopped exporting and expanded domestic production suggests that these firms tend to become less efficient as they lose contact with international

[48] Arezki et al. (2017).

[49] While government debt is currently tradable, such trades are solely recorded on paper.

markets.[50] A policy response may need to go beyond preparing for capital inflows, as growth and capital flows tend to become more volatile in resource-based economies**.**

Table 2.3: Oil Revenues: Macroeconomic Risks and Risk Mitigation

Risks	Country Examples	Mitigation Measures	Status in Guyana
Borrowing prior to production	• Ghana • Mozambique	Adopt appropriate debt management and macroeconomic policies.	Following the discovery of commercially viable oil reserves, the budget deficit fell from 4.4% in 2016 of GDP to 3.5 in 2018. New debt legislation is being prepared.
Management of the oil sector by state-owned enterprises heightens fiscal risks	• Saudi Arabia • Trinidad & Tobago • Ecuador • Venezuela	Build capacity to identify, assess and monitor fiscal risks arising from contingent liabilities.	Management by SOEs is an option under Guyana's NRF Act.
Fiscal expansion following production	• Equatorial Guinea • Timor-Leste	Divert a share of fiscal resources to a sovereign wealth fund.	The NRF was adopted in the absence of Parliamentary Opposition.
Mismanaged response to economic cycle	• Brazil	Enact fiscal rules to stabilize output volatility.	Guyana's relatively rigid use of oil resources specified in the NRF could be complemented by a debt rule.
Unproductive expansion of public investment	• Angola	Improve the appraisal and selection process for public investment projects.	Public investment procedures have been strengthened, but further reforms are necessary.
High impact, low frequency environmental disaster	• Australia, US, Canada, Kuwait	Build capacity to identify and monitor risks arising from O&G sector	Oil Spill Contingency Plan has been drafted, public investment in building capacity needs to be increased.
Unsustainable expansion of public consumption (e.g., pension programs)	• Brazil • Nigeria	Target increases in public consumption to benefit poor households.	Public pensions have been increased, but poverty alleviation programs remain poorly targeted.
The creation of extrabudgetary funds with inadequate oversight	• Angola • Nauru • Malaysia	Monitor fiscal risk through implicit and explicit government guarantees.	Explicit guarantees are tightly monitored, but there is no monitoring of implicit guarantees.
Real exchange-rate appreciation erodes the competitiveness of the nonoil economy	• The Netherlands in the 1970s and others that experienced the so-called "Dutch disease"	Sterilize capital inflows through price-based or capital-control policies.	The authorities have limited institutional capacity to manage the exchange rate.

Source: World Bank staff.

20. The baseline scenario assumes that resources invested abroad will generate a healthy return, but international experience suggests that managing foreign financial assets can be challenging. Managing foreign assets is especially challenging for a country with limited experience operating in international capital markets. As noted above, the newly established SWF is designed to accumulate revenues that cannot be spent effectively in the near term and invest them in foreign financial assets. Similar strategies have been pursued successfully by Norway,

[50] Arayavechkit, et. al. (2020 forthcoming).

Timor-Leste, and several Gulf states, but the international experience highlights threats to the integrity of SWFs, which may be compromised by inadequate transparency and/or insufficient managerial capacity. Consequently, the returns to investment in a SWF are not guaranteed and should not be taken for granted. To avoid the worst outcomes experienced by comparable countries, the government needs to rapidly build the fund's administrative capabilities and ensure that appropriate reporting and oversight mechanisms are established in compliance with international best practices. These issues are discussed in detail in Chapter 3.

Figure 2.4 The Impact of Alternative Fiscal Policies on Macroeconomic Projections, 2020-2030

Figure a. nonoil GDP (2019=100)

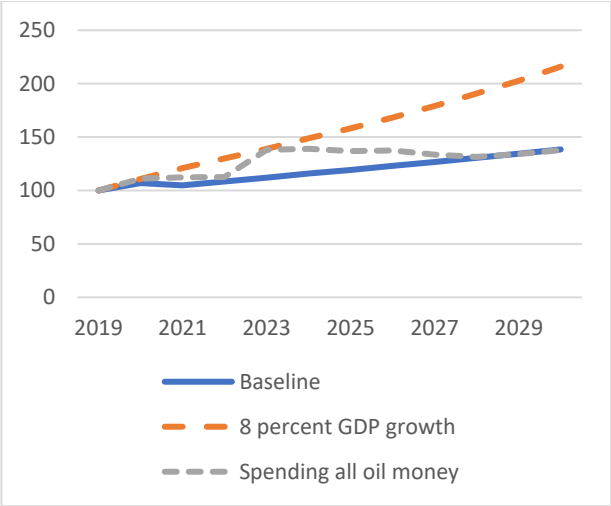


Figure b: Inflation (percent)

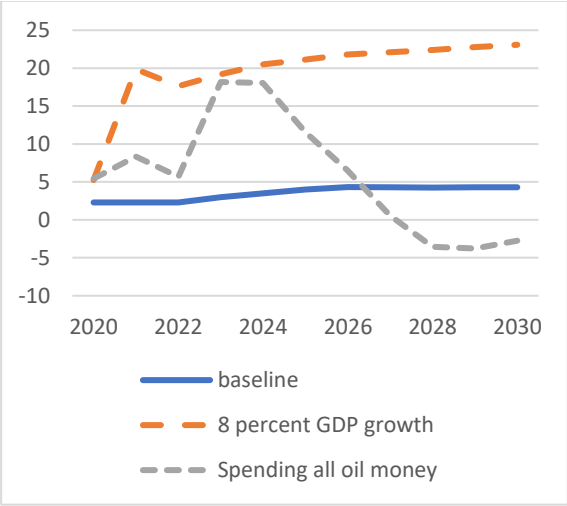


Figure c: Debt-to-nonoil GDP ratio (percent)

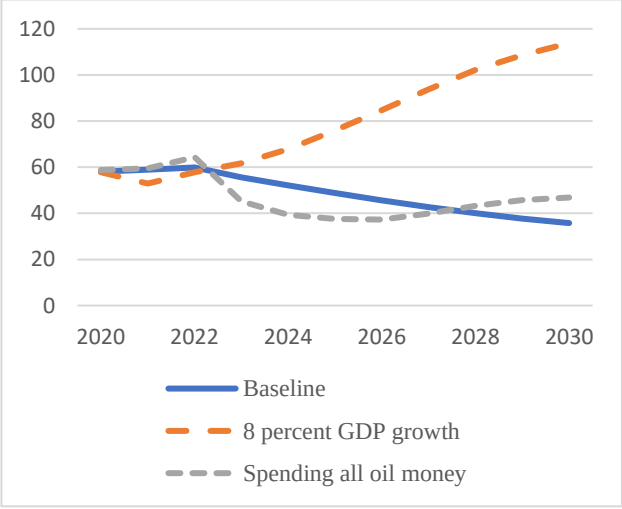
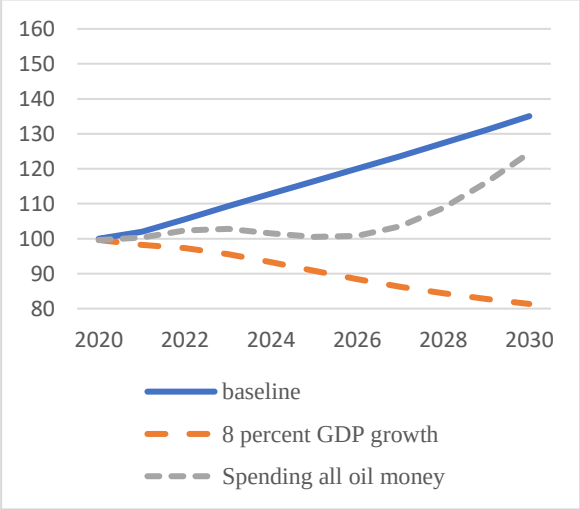


Figure d: Nonoil exports (2020=100, US$ nominal)



Source: World Bank Staff estimates and projections.

21. To illustrate the risks posed by unsustainable fiscal policies, two alternative scenarios are presented. These scenarios differ from the baseline described above, and both result in far worse outcomes; to be noted this is based on two oil fields only (Figure 2.4):

- Under the first scenario, all of Guyana's fiscal oil revenues are channeled 50 percent directly into public investment and 50 percent into public consumption, with no savings and no change in the debt level. This rapid increase in public spending leads to massive inflation and slow growth in nonoil exports during 2023-26. Under this scenario, real GDP is initially higher than it is in the baseline, and the debt-to-GDP ratio is initially lower. However, inflation is more volatile, and importantly the country has no foreign assets. The case of Equatorial Guinea offers a cautionary example of the deeply negative consequences of spending resource revenues immediately with little or no accumulation of financial assets.[51]

- Under the second scenario, the government boosts public investment aiming to reach a growth rate of 8 percent. The expansion is financed both by using oil revenues and by contracting new external debt. Under this scenario, real GDP in 2030 is projected to be 56 percent higher than under the baseline. However, the debt trajectory quickly becomes unsustainable as the debt-to-nonoil GDP ratio reaches almost 120 percent in 2030. While this scenario still assumes a buildup in foreign assets, future oil revenues are expected to be inadequate to service Guyana's debt stock. In the international arena, the case of Ghana underscores the importance of proactive debt management, as weak borrowing controls can thwart measures to contain the growth of public spending, leading to rapid debt accumulation, unsustainable expenditure policies, and macroeconomic distortions.

2.5 Environmental Risks

22. Guyana is exposed to multiple effects of climate change that can exacerbate macro-fiscal risks and derail growth and development efforts. Rising sea levels and increasingly destructive tropical storms accelerate coastal erosion, increase flood risk, and lead to permanent loss of land in some areas (Figure 2.5). Guyana's coastal plain strip lies below the mean high-tide mark and has historically suffered flooding from both Atlantic storm surges and heavy rains. The coastal plain accounts for just 6 percent of the country's area, yet it is home to 90 percent of the population and most of the country's current economic activity. Research shows that the impact of rising sea levels and intensified storm surges in Guyana would be among the greatest in the world, exposing 100 percent of the country's coastal agriculture and 66.4 percent of coastal urban areas to flooding and coastal erosion, with potential GDP losses projected to exceed 46.4 percent. Extreme rainfall has caused widespread flooding in the coastal lowlands. In 2005, flooding affected almost 39 percent of the population, with damages estimated at 59 percent of GDP (Figure 2.6). Moreover, the degradation and destruction of mangroves, which are also vulnerable to climate change, intensifies pressure on fisheries and increases the impact of storm surges on coastal areas.

23. Recognizing the country's extreme vulnerability to climate change, the government has committed to implementing adaptation measures. Public investments in climate-resilient infrastructure, such as reinforced seawalls and efficient drainage and dike systems, will be essential to protect coastal and lowland areas against flooding. The country's existing water-management infrastructure must be reinforced and expanded. The sustainable use and management of land, water, and marine resources is also essential to reduce vulnerability and help communities adapt to climate variability and change. Efforts to reduce deforestation and forest degradation, develop

[51] Equatorial Guinea has a sovereign wealth fund, the Fund for Future Generations, but its assets are very limited at about US$80 million.

and enhance sustainable forest-management practices and improve livelihoods of forest-dependent communities are a major component of climate-change adaptation. Moreover, given Guyana's water-related climate risks, efforts to improve water security from a multidimensional perspective, through water-resources management, services and governance will be fundamental to support sustainable development. Similarly, an important way of addressing anticipated climate risks will be through the adopting and scaling up of climate-smart agricultural practices and technologies, including resilient crop varieties. These will be crucial to food security and rural livelihoods. Finally, due to the extraordinary importance of coastal and marine areas in Guyana, promoting the effective governance of coastal and marine resources, including the establishment of coastal and marine protected zones and the reduction of pollution, will be vital to strengthen resilience.

Figure 2.5: Sea-Level Rise, Trend

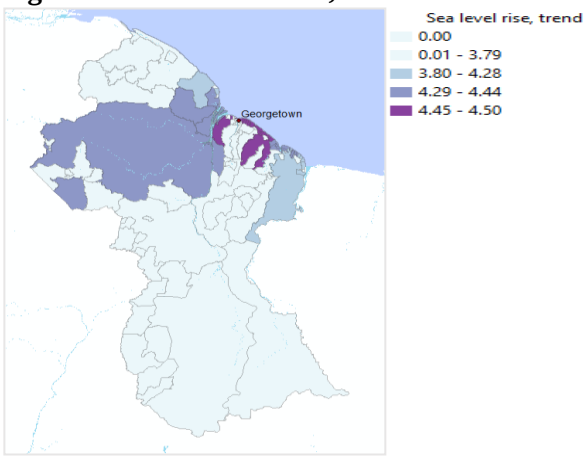
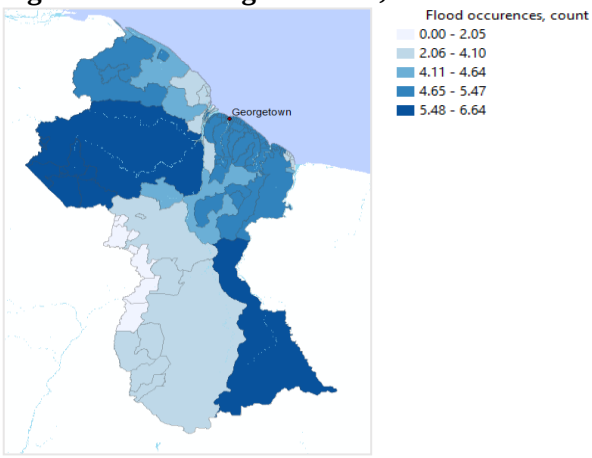


Figure 2.6: Flooding Incidents, Count



Source: World Bank staff NASA Earth Observatory data (2017), Hansen et al (2013), Halpern et al (2015), and the Hidden Dimensions dataset (2017).

24. Urbanization rates are expected to exacerbate observed vulnerabilities, necessitating investments in climate-resilient municipal infrastructure, as an important adaptation measure. Recent trends suggest that the pace of urbanization has increased since 2010, with the urban population growth rate averaging 0.8 percent, double the rural rate of 0.4 percent. The share of the urban population is expected to increase over the next five-to-ten years due to the anticipated oil boom, and urban or industrial developments have been envisaged for recently defunct sugar estates. According to estimates from World Urbanization Prospects, Guyana's urban population is expected to increase to 36 percent of the total population by 2050. Urbanization will put pressure on municipal infrastructure and services and expose vulnerable populations to climate-related risks. Poor urban planning can lead to rising congestion and air pollution, increased pressures on housing and land markets, unsafe construction, insufficient infrastructure, and the inadequate provision of basic services (water, sanitation, electricity, telecommunications, internet, etc.) as cities grow over time. Georgetown faces especially significant challenges due to the proliferation of informal settlements and low-quality dwellings, which are threatened by rising sea levels

25. While adaptation is at the core of Guyana's climate policy, Guyana is also committed to supporting global efforts to mitigate climate change. Guyana has submitted its Nationally Determined Contributions (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC), in which it outlined a number of climate-change mitigation and adaptation

measures, notably in the forestry and energy sectors, which are the source of most current and historical emissions.[52] Guyana's climate change mitigation efforts are even more critical in the context of its O&G sector. Even though the impact of Guyana's greenhouse gas (GHG) emissions from its new O&G production capabilities is expected to be mixed, the sector is expected to have significant impact on Guyana's carbon footprint. On the one hand, the sector has the potential to generate GHG, while on the other, its use in potentially replacing costly, high polluting and carbon-intensive heavy fuel oil in power generation will reduce GHG. In addition, the objectives of the a green development strategy are expected to continue to guide policymaking, including efforts to reduce deforestation and improve forest productivity, strengthen the REDD+ monitoring, reporting, and verification system, and protect Guyana's forest carbon sink while recognizing the marginal contribution to climate change that its O&G sector will make (Box 2.3).

Box: 2.3 Guyana's Climate Change Agenda

As the world's most recent oil producer, Guyana will have a large contribution to the climate change agenda. While the total carbon emissions of the major oil producers are low due to their small size, they are among the world's largest per capita carbon emitter. Currently, Guyana's petroleum reserves are estimated at over 8 billion barrels of oil (~0.4% of global resources), and the country is expected to produce up to 750,000 barrels of oil equivalent per day by 2025 (~0.8% of global production in 2018). Though oil production will have a major impact on Guyana's carbon footprint, it will have only a marginal impact on international oil production and prices. Currently, all crude oil being produced is exported, and thus the associated emissions are expected to be concentrated elsewhere in the value chain, in processing, transport, or consumption. The impact of Guyana's greenhouse gas (GHG) emissions from its new oil and gas production capabilities is expected to be mixed. On one hand, producing O&G has the potential to generate GHG emissions and local air pollutants, and the Guyanese government should ensure that these emissions are minimized by prohibiting routine gas flaring, using clean options for onsite power generation instead of diesel or heavy fuel oil, and using third-party oversight to limit the potential for methane leakage. On the other hand, Guyana's newfound natural resources will likely replace the use of costly, high polluting and carbon-intensive heavy fuel oil in power generation, significantly reducing GHG emissions from the electricity sector, drastically reducing local air pollutants, and supporting the future expansion of additional intermittent sources of energy, such as wind and solar.

Conclusion

26. This chapter highlights the importance of adhering to three macroeconomic principles:

(i) Fiscal spending should be consistent with the absorptive capacity of the economy as estimated by potential GDP.

- **Boosting output beyond potential GDP will contribute to inflation and erode the competitiveness of nonoil exports.** Because firms that stop exporting tend to experience a decline in productivity, the competitiveness of nonoil exports is critical to long-term growth. Moreover, weakening competitiveness inhibits economic diversification and fosters a "rentier state" model in which resource rents and the return on financial assets are increasingly indispensable to national income.

[52]United Nations Framework Convention on Climate Change (UNFCCC).

- **To avoid adverse macroeconomic distortions, Guyana must limit domestic spending of oil revenues to prudent levels in line with the economy's absorptive capacity.** In addition, a ceiling on public debt and liabilities equal to about 60 percent of nonoil GDP would help guard against an unsustainable increase in the debt burden. Because oil is an exhaustible resource, liabilities should be considered as a share of nonoil GDP. Liabilities exceeding 60 percent of nonoil GDP may raise the risk of debt distress in response to a short-term drop in global oil prices or the inevitable long-term decline in the country's oil reserves.

(ii) The real exchange rate should be managed to ensure external competitiveness.

- **Over the medium term, a shift from direct to indirect taxes could boost the competitiveness of nonoil exports.** However, such a shift should only be considered after a cash-transfer system or other mechanism to offset its adverse impact on poor households has been put in place.

- **The sterilization of capital inflows is vital to prevent macroeconomic distortions.** However, sterilization requires a well-functioning capital market capable of absorbing central bank debt instruments. As private capital inflows are projected to become more volatile, Guyana should develop appropriate sterilization instruments and associated market mechanisms.

(iii) Measures should be put in place to mitigate the risks associated with environmental and climate change disasters.

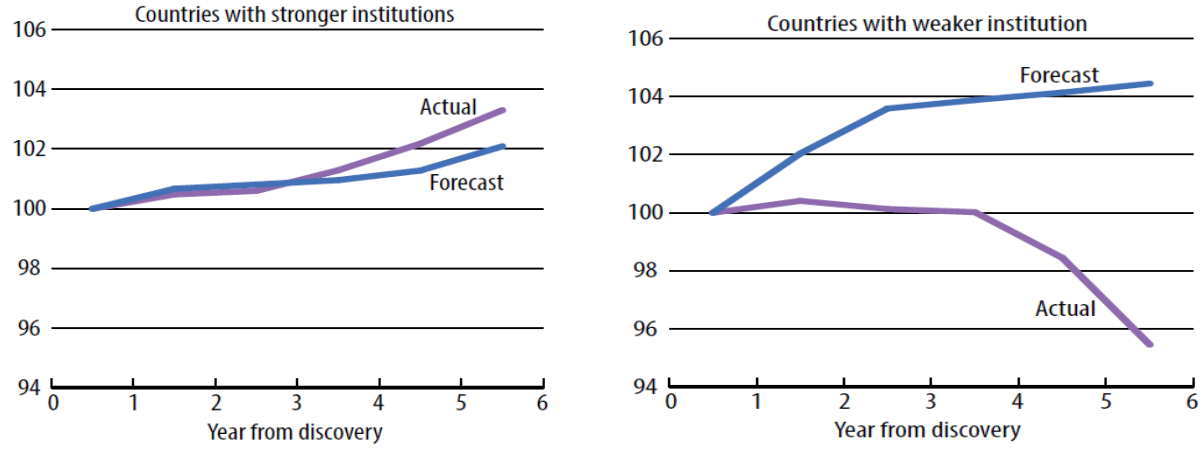
- **Climate-smart development policies should complement investments in physical infrastructure and disaster-preparedness systems with measures to protect forests, coastal ecosystems, and other natural assets.** Public investment should prioritize climate-resilient infrastructure, sustainable use and management of land, water and marine resources adoption and scale-up of climate-smart practices and technologies including in the agriculture sector. In addition, promoting economy-wide innovation and development of cost-effective technologies to reduce GHG emissions, modern municipal planning techniques to incorporate and address climate and weather-related hazards.

3. Chapter 3: Governance and Institutions

…Alenna and her family are excited by the government's promises of improved services that will be financed by oil revenues. However, they recall that in the past public services were not delivered, as their settlement was not recorded in official maps, and many people had to travel to neighboring villages even to collect salaries…

1. The international experience highlights the pivotal role that good governance and robust public institutions play in achieving positive development outcomes in resource-rich countries. Ensuring sustainable long-term growth requires managing the O&G sector in a way that supports a diversified and inclusive economy. The effectiveness of alternative fiscal strategies will hinge on the strength of the institutions and processes that underpin the mobilization of oil revenues, spending, public investment, and management of foreign assets. Countries with stronger institutions have been more successful in managing the natural resource wealth. Botswana, Chile, Norway, Malaysia and Tanzania managed to maintain relatively diversified economies, avoided excessive increases in public debt, and resisted an unsustainable expansion of public services. Countries with stronger institutions have tended to manage their natural resource wealth more effectively and have maintained growth rates that are broadly consistent with the projections published by the IMF's World Economic Outlook (WEO). Meanwhile, countries with weak institutions have seen their growth rates fall short of expectations (Figure 3-1).

Figure 3-1 GDP growth following oil and gas discovery, actuals versus WEO projections[53]



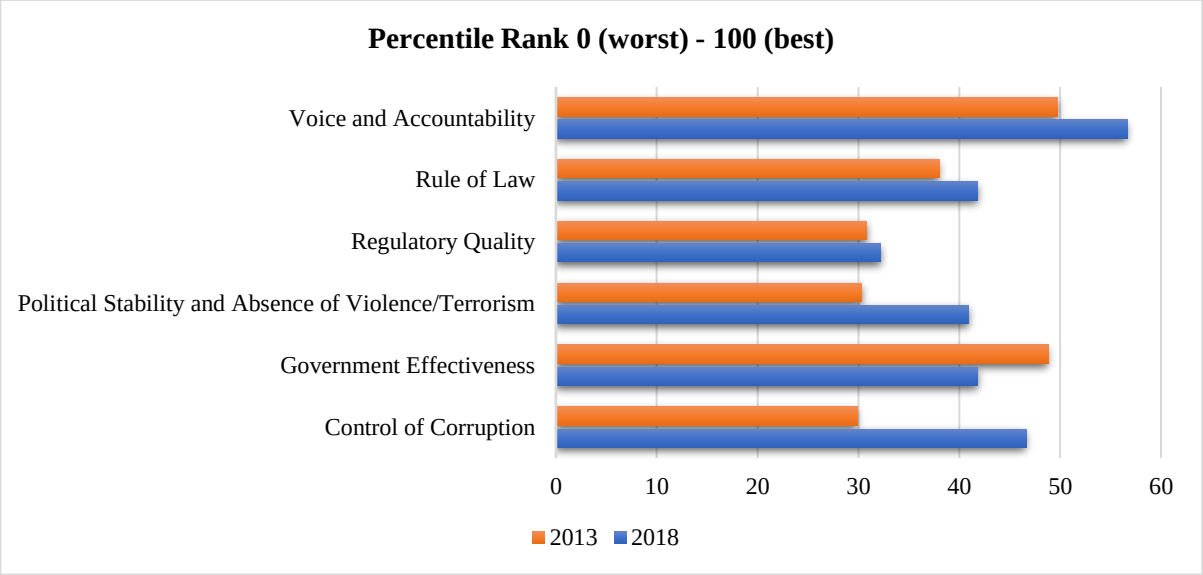
Source: Cust and Mihalyi (2018).

2. The effectiveness of Guyana's public institutions is undermined by lack of sound regulations, low levels of public trust, and the poor quality of public services. Despite recent improvements, Guyana's governance scores remain in the bottom half of the global ranking (Figures 3-2). Guyana scores significantly low in regulatory quality - the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector

[53] The analysis is based on a scoring system for governance institutions that was applied to 149 countries. Countries were classified as having weak institutions if the score was below the 1980's median. Of the 149 countries, 67 were classified as having strong institutions with average rating of 0.74 on a scale of 0 to 1; by contrast 82 countries were classified as having a weaker score, with an average score of 0.11. Guyana's score was 0.15.

development. Trust in institutions and rule of law remain low and measures of the government's effectiveness, including the quality of public services and their independence from political pressure, have constantly declined. Freedom of expression and control of corruption have improved, as also reflected in a significant improvement in the Corruption Perceptions Index (CPI).[54] In 2019, Guyana ranked 85th out of 180 countries on the CPI—tied with Trinidad & Tobago and Kuwait, but below the levels of high-income oil-producing economies such as Norway (7th), the United Arab Emirates (21st), Qatar (30th), and Bahrain (77th). Left unaddressed, pervasive mistrust of public institutions can lead to social unrest and instability.

Figure 3-2. Guyana's Worldwide Governance Indicator Scores, 2013 and 2018



Source: Worldwide Governance Indicators, World Bank.

3. This chapter describes the governance and institutional challenges that Guyana faces as it strives to leverage its natural resource wealth to support sustainable development. Institutions are defined as the set of organizations, laws, rules, practices and systems overseen or implemented by the state's civil service that are used to implement public policies, enforce laws, and deliver public goods and services. This chapter focuses on: (i) strengthening the public sector to enhance the effectiveness of public polices and improve service delivery; (ii) designing appropriate laws, regulations, and institutions to underpin the O&G sector; and (iii) elaborating the rules governing a SWF.

3.1 Strengthening the Public Sector

4. Increasing the capacity of Guyana's economy to absorb fiscal spending will require strong public sector and governance arrangements. The potential of public policies and public service delivery is closely related to the quality of the civil service and the public financial management (PFM) systems to manage resources efficiently and transparently. Guyana's civil service has significant room for improvement; especially in terms of its capacity to manage oil revenues and efficiently implement public investment projects (Box 3.1). Guyana's fiscal revenues

[54] Transparency International, 2018. Corruption Perceptions Index. https://www.transparency.org/cpi2018

have long been volatile due to the government's reliance on taxes and royalties from the minerals, agriculture, forestry, and fisheries sectors. In this context, PFM systems have been used primarily to respond to short-term fiscal shocks with limited attention to long-term planning, including long-term public investment planning. The anticipated inflow of revenue from the oil sector, combined with recent improvements in revenue management, is expected to increase the size and improve the predictability of fiscal revenues. However, the achievement of Guyana's development objectives will hinge on the efficiency and effectiveness with which public expenditures are managed.

Box 3.1: Public Services and the Quality of the Civil Service

Across countries, the quality of public policies and services is closely related to the quality of the civil service. Strong civil-service management, including human-resource planning, recruitment and selection, professional development, and incentives for professionalization, are critical to attract, retain, and motivate a professional staff. Key elements of civil-service management include workforce planning, reliable data on staff numbers and payrolls, adequate organizational structures with updated job profiles, merit-based systems for recruitment, selection, and promotion, equitable and competitive pay scales, and a robust performance monitoring and assessment framework linked to career-development opportunities.

A recent study by the Inter-American Development Bank (IDB) determined that Guyana's aggregate Civil Service Development Index score is 25 out of 100, underscoring the country's considerable room for improvement.[55] The IDB's analysis revealed that Guyana has a relatively strong legal, regulatory, and institutional framework to safeguard civil servants against discrimination, but there are deficiencies in its coverage and implementation. Guyana scored lowest on the sub-index for "management capabilities," as managers within the civil service are more transactional than transformational, focus primarily on operational or administrative responsibilities, and are not as strategically oriented as their peers in other participating countries.

Guyana's highest score was for the "compensation management," sub-index, reflecting the country's well-defined job classification system. This system, however, is not universally implemented, as officers are often paid outside of the established salary bands. Guyana scored poorly on the sub-index for "development management," which focuses on individual and collective growth, reflecting the lack of systemic policies and procedures for succession planning, ascertaining staff training and workforce development needs, and processes for evaluating the efficacy of training and workforce development.

O&G revenues will increase fiscal expenditures and raise expectations for better public service delivery. Meeting these expectations will require strengthening the civil service by developing leadership capacity and inculcating a culture of strategic planning, professional management, and robust monitoring and evaluation. In addition, the systematic use of training needs assessments could help close existing performance gaps and improving quality of managers, including via the recruitment of international experts and members of the diaspora.

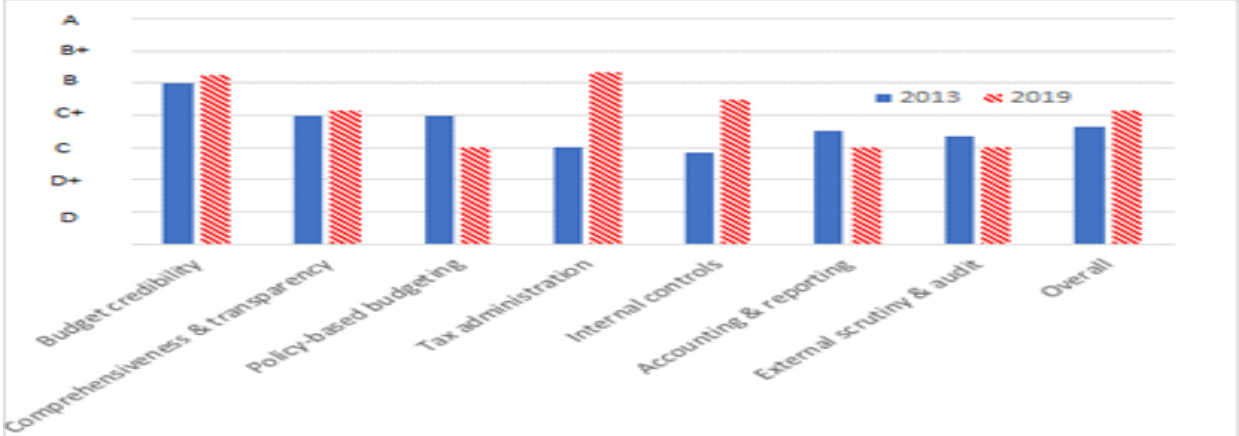
5. A recent Public Expenditure and Financial Accountability (PEFA) assessment found that Guyana's PFM system is generally robust, but it suffers from weaknesses in fiscal risk management, multi-year budgeting, public procurement, public investment management, and financial reporting.[56] While revenue forecasting and management systems have improved,

[55] IDB (2018), Building State Capacity in the Caribbean: The State of the Civil Service in Guyana.
[56] PEFA Secretariat, Guyana PEFA Report, 2019.

deficiencies in public expenditure management constrain the government's ability to utilize the budget to advance its policies and implement priority projects (Figure 3.3). Limited cash planning, the repeated use of the Consolidated Fund overdraft facility, inadequate commitment controls regarding salary and non-salary expenditures, and insufficient information on arrears continues to negatively impact public expenditure management. A large portion of recurrent expenditures are pre-committed to finance the wage bill and transfers to public welfare and private sector organizations, and the annual budgeting process largely involves allocating resources across domestically funded capital projects. Consequently, strategic planning focuses primarily on public investment. A failure to formulate sectoral strategies, medium-term investment plans, or multiannual expenditure policies limits the ability of the budget process to advance Guyana's development objectives. Central government agencies and line ministries do not establish a coherent link between policy, planning, and budgeting, which contributes to expenditure inefficiency and the inadequate monitoring of fiscal risks.

6. The unpredictability of public investment funding, the lack of procurement planning, and inadequate internal controls over personnel and procurement management further undermine expenditure efficiency. Payroll and procurement delays impede public service delivery, and budget execution is weak at the level of implementing agencies. In this context, a performance management framework and a medium-term public investment management system could improve the impact of public investment on development outcomes while reinforcing accountability in a public sector where external oversight has traditionally been limited.[57]

Figure 3.3: Guyana's PEFA Scores, 2013 and 2019



Source: PEFA Secretariat, 2013 and 2019.

7. Achieving meaningful progress on the PFM reform agenda will require significant investment to modernize the information-technology (IT) systems on which the PFM cycle operates. Although the government has recognized the need for updated IT systems and developed

[57] Several important reform initiatives aimed at strengthening PFM have been implemented to improve the quality of public service delivery. A PFM Strategy and Action Plan was launched in 2015 and subsequently augmented by the findings of new analytical work. Although the reform effort defined activities to address the identified deficiencies, it lacked a comprehensive strategic framework and coordinating mechanism. Recent PFM diagnostics include the Tax Administration Diagnostic Assessment Tool (TADAT) 2017 and Public Investment Management Assessment (PIMA) 2018 reviews, which assessed the performance of tax administration and public investment management systems and processes, respectively.

a Digital Government Roadmap, it lacks the implementation capacity and resources to implement its agenda. Achieving Guyana's goals for PFM and digital government will require the implementation of an integrated financial management information system (IFMIS) across the public sector. Electronic payment systems that can show tax payments and expenditure disbursements in real time could enhance the quality of public services while boosting confidence in the government's PFM capacity.

8. Modernizing Guyana's PFM framework will require upgrading the public investment management system and integrating it with the budget cycle. Public investment is crucial to long-term growth and intergenerational equity. Currently, the envelope for public investment is based on revenue and borrowing projections as well as existing current commitments, and a 2017 IMF study found that Guyana's public investment management system is 1.5 times less efficient than those of comparator countries.[58]

9. Major public investment projects have economic and social costs and benefits that go well beyond their financial rate of return. For example, while landing natural gas for electricity generation may be desirable, constructing a new deep-water port could have major implications for Guyana's spatial development. Alternatively, building a road connection to a deep-water port in Guyana from Brazil could tighten linkages between the Brazilian and Guyanese labor markets while opening inland areas to agriculture, with complex economic and environmental consequences. By contrast, the government's prioritized expansion of internet services would have more uniformly positive implications. A public debate on the country's top investment priorities, and sequencing of projects could help build a national consensus around Guyana's development priorities and environmental challenges (Box 3.2).

10. Progress towards productive public investments in the economy would be limited without investments in digital skills, and a digital government environment. The GSDS recognizes this challenge under its governance and institutions and knowledge management pillars. These pillars highlight the need to position the government as a pioneer in the application of electronic platforms. This requires that the internal administrative processes facilitate the transformation of the interactions between government, citizens, and businesses. Guyana has developed a Digital Government Roadmap designed to elaborate a strategy and vision for digital government transformation, but currently lacks the capacity and resources to enact this vision. Achieving the service delivery outcomes associated with public investments will require the articulation of a comprehensive digital government strategy, which would adopt a whole-of-government approach to modernize the public administration and doing business environment, and build the capacity of civil servants to operate in this environment.

11. A recent Debt Management Performance Assessment (DeMPA) found that while Guyana's draft debt law, annual reporting, and audit requirements are generally strong, its fragmented managerial structure, lack of a debt management strategy, and weak cash flow forecasting and management represent serious weaknesses. Overdrafts with the central bank and inaccurate estimates during budget execution pose significant liabilities, and there is no

[58] IMF, 2017. Despite its relatively high capital stock, Guyana has an estimated efficiency gap of 41 percent, well above the LAC average of 30 percent. The rating for the perceived quality of public infrastructure in Guyana was 3.6 out of 7 in 2015 according to a World Economic Forum survey, below the 4.2 average for comparator countries.

assessment of credit risk from loan guarantees, nor any calculation of credit fees. The anticipated influx of oil revenues underscores the urgency of improving operational risk management and business-continuity practices. Rising public investment levels will likely entail contracts with foreign suppliers, some of whom will offer credit as part of their proposals, and the government should assess such proposals in the context of its macroeconomic, budgetary, and debt-management strategy. Priority institutional reforms to enhance transparency and improve the coordination with fiscal and monetary policy include strengthening cooperation between the Ministry of Finance and the Bank of Guyana and modernizing the government's operating and debt-recording systems.

Box 3.2 Public Financial Management and Public Investment System

Improving the public investment management cycle will require addressing specific challenges related to macroeconomic sustainability and the socio-economic impacts of climate change. Resilience strategies should be streamlined into national development planning at the sectoral and project levels. A best-practice system for public investment management involves eight steps: (i) investment guidance and preliminary screening; (ii) formal project appraisal; (iii) independent review of appraisal; (iv) project selection and budgeting; (v) project implementation; (vi) project adjustment; (vii) facility operation; and (viii) project evaluation.

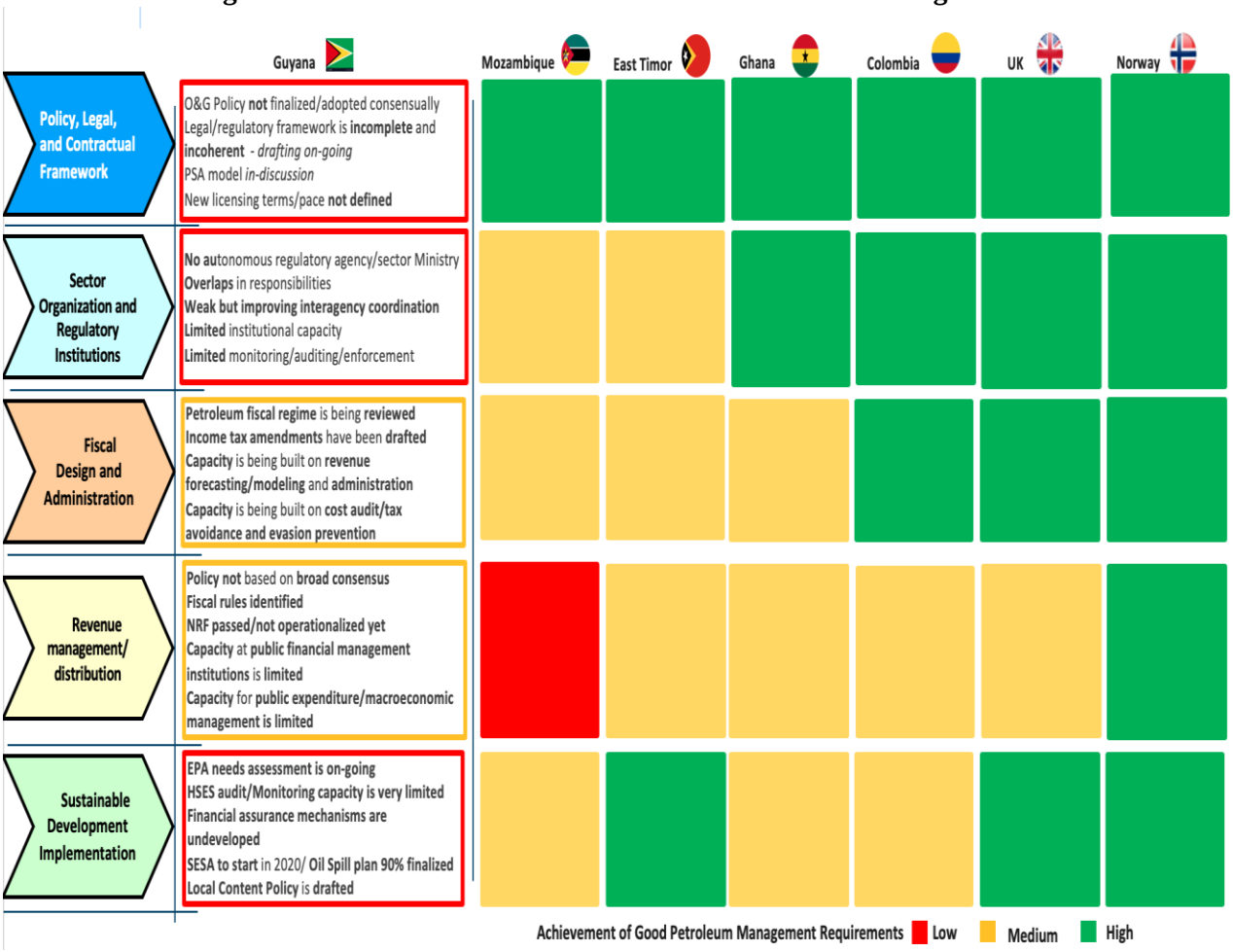
Guyana's planned expansion of public investment will be delivered in a context of limited human and institutional capacity. The government could leverage its existing administrative resources by scaling up the public investment unit in the Ministry of Finance. Alternatively, or concurrently, performance contracts can be used to deepen engagement with the private sector by delegating specific tasks to private firms while ensuring that oversight functions are performed by dedicated civil servants. In the absence of skilled staff, the government can draw on international consultants and advisors, including members of the diaspora.

Source: IMF, World Bank and Government of Guyana

3.2 Maximizing the Developmental Impact of the O&G Sector

12. The international experience reveals that successfully managing an O&G sector requires the transparent and accountable implementation of robust policy and institutional framework composed of five core elements. These include: (i) policies, laws, and contractual arrangements that maximize the benefits of oil revenues and minimize downside risks; (ii) a set of regulatory institutions capable of effective oversight; (iii) appropriate fiscal policies and sound PFM infrastructure; (iv) robust revenue management and distribution mechanisms; and (v) policies to promote sustainable long-term development. Although Guyana has made substantial progress in strengthening the management of the O&G sector, further measures will be needed to align with best practices for emerging oil producers (Figure 3.4). Key priorities include building institutional capacity to oversee the sector, strengthening the legal and regulatory framework, and efficiently allocating core policy, regulatory and monitoring functions. Going forward, a key decision will be whether to establish a dedicated petroleum ministry or leave the O&G sector under the purview of the Ministry of the Presidency.

Figure 3.4 International Benchmarks for O&G Sector Management



Source: World Bank, 2019

13. The legal and regulatory frameworks for the O&G sector need to be updated. Legislative modernization will help maximize benefits, manage technical, environmental, social, and financial risks, and build capacity to engage effectively with investors. At present, the key laws include, inter alia, the Petroleum (Production) Act of 1938, the Petroleum (Exploration and Production) Act, Cap. 65:10, of 1986 and related regulations, and the Upstream Legal Requirements for Petroleum (2004). These instruments, along with the Guyana Geology and Mines Commission Act, the Mining Act, the Environmental Protection Act, the Occupational Safety and Health Act, and other relevant legislation, are being adjusted to reflect that Guyana is no longer a frontier but instead a proven oil producer. Since 2017, the licensing of new oil blocks have been suspended pending the definition of new licensing terms and legal arrangements.

14. Government ministries, commissions, and agencies have limited administrative and technical capacity to oversee and manage the sector. Sectoral governance suffers from overlapping responsibilities, and although interagency coordination is improving, administrative jurisdictions remain poorly defined. The shortage of oil-sector experts in relevant government entities, combined with inadequate human and capital resources, limits their capacity to monitor, audit, and enforce regulations on oil companies. Meanwhile, several critical institutions, such as

the Environmental Protection Agency (EPA), are developing new regulatory requirements for the industry that will require skilled experts to implement, else it could add delays to the plans for firms.[59]

15. Guyana's fiscal regime for the O&G sector is underdeveloped and suffers from deficiencies in key areas. The Guyana Revenue Authority (GRA) and the Ministry of Finance have been working with development partners to review the design of the O&G fiscal regime and improve revenue administration. Amendments have been drafted to the Income and Corporation Tax Acts to minimize tax avoidance. The government is building its capacity for revenue forecasting, modeling, and tax administration—including cost auditing and measures to curb tax evasion—with support from external partners.

16. Cost auditing is especially crucial in Guyana, given the predominance of production-sharing agreements (PSAs) based on block-wide recovery. The advantages of block-wide recovery include increased exploratory activity, greater production potential, improved development coordination within the block, and the prospect of greater government revenues in the long run, if additional exploration leads to multiple discoveries. It also reduces risks for investors and can help speed the overall pace of sectoral development. However, block-wide recovery entails a loss of initial revenue that otherwise would have been gained through taxes and production sharing, and it also requires diligent cost audits by the government to prevent abuse.

17. Addressing the risk of environmental damage from the O&G sector requires specialized skills and capacity. The government has conducted a needs assessment and is preparing an action plan for the EPA on O&G sector management. With support from external partners, the authorities have formulated an oil-spill contingency plan. However, the government's health, safety, environmental, and social auditing and monitoring capacity remains limited, and financial-assurance mechanisms are undeveloped. The government is planning to conduct a strategic environmental and social assessment of the O&G sector in 2020.

18. The O&G industry can help manage Guyana's economic transition and harness opportunities. First, considering the magnitude of anticipated climate change risks, O&G companies should incorporate adaptation considerations in their operations. The government will also need to develop the capacity to monitor and oversee the emergency-response efforts of oil companies in the event of a large-scale oil spill or similar disaster. Second, appraising climate-smart investments may require alternative methodologies such as interest rates that are lower than for commercially viable investments. Third, revenues collected from O&G could help bridge the financing gap for urgently needed adaptation needs – that will in turn help both Guyana's natural resources, as well as building resilience to increasing climate change impacts. Finally, the O&G industry can play an important role in climate change mitigation. Though the relative share of GHG emissions of Guyana is small and this is not expected to significantly change, considering the above referred to vulnerability to global low-carbon transition, O&G will be facing increasing demands to clarify the implications of energy transitions for their operations and business models,

[59] The World Bank's ongoing Guyana Petroleum Resources Governance and Management Project (P166730) is designed to address some of these institutional capacity gaps.

including by developing and deploying technologies and products that continue to reduce GHG emissions while advancing human and economic prosperity.

3.2 Designing and Managing a SWF

19. Oil-rich countries establish a SWF to accumulate revenue from the O&G sector and invest it in foreign financial assets.[60] To function effectively, a SWF requires clearly defined rules governing deposits and asset management. SWFs were pioneered by resource-rich countries, but countries with limited natural resources have also utilized them to manage intergenerational savings and smooth economic volatility.[61] In 2008, the International Forum of Sovereign Wealth Funds (IFSWF) developed 24 best practices for managing sovereign wealth funds, which are known as the "Santiago principles."[62] These principles are designed to promote transparency, good governance, accountability, and prudent investment practices while encouraging open dialogue and fostering an accurate understanding of the fund activities among stakeholders. The objectives of the Santiago principles include: (i) helping to maintain a stable global financial system and ensure the free flow of capital; (ii) achieving compliance with all applicable regulatory and disclosure requirements in the countries in which the funds invest; (iii) ensuring that funds are invested on the basis of economic and financial risk/return considerations; and (iv) establishing sound and transparent fund governance structures with adequate operational controls, risk-management systems, and accountability mechanisms.

20. Guyana's 2019 NRF Act largely reflects the Santiago principles. The NRF was adopted in the absence of parliamentary opposition. Bipartisan ownership and support of SWFs is a key prerequisite in democracies for the sustainability and success of such arrangements. The law provides a clear legal framework with well-defined objectives and explicit links to the macroeconomic policy framework (pillar 1).[63] The NRF's institutional arrangements and governance structure are fully elaborated (pillar 2), and its investment procedures and risk-management systems are described in detail (pillar 3). The international experience highlights the importance of these principles (Table 3.1). Four issues are especially salient for Guyana:

a. Governance and reporting. The NRF legislation establishes a 22-member Public Accountability and Oversight Committee (PAOC) consisting of representatives from civil society organizations. Members of the National Assembly and ministry employees are not eligible to serve on the committee. The PAOC will organize public hearings, publish biannual reports, and submit those reports to the National Assembly. The Minister of Finance is responsible for managing the NRF under the oversight of the National Assembly. The NRF Act provides for a Macroeconomic Committee, an Investment Committee, and a Senior Investment Advisor and Analyst to advise the Minister of Finance. The law requires all withdrawals to be

[60] The Natural Resources Fund Act of 2019 was adopted but without bipartisan support.

[61] Saudi Arabia and Kuwait established two of the first modern sovereign wealth funds in 1952 and 1953, respectively, and both are primarily funded by oil revenues. However, several of the world's largest SWFs—including those of China and Singapore—are capitalized through non-commodity revenue sources.

[62] The IFSWF is an initiative by the International Monetary and Financial Committee, a committee the IMF Board of Governors comprising representatives of IMF member countries.

[63] The three pillars of the Santiago Principles are (i) Legal Framework, Objectives and Coordination with Macroeconomic Policies; (ii) Institutional Framework and Governance Structure; and (iii) Investment and Risk Management Framework.

approved as part of the national budget which is a public document,[64] and the Minister of Finance is required to publish the advisory reports of the Investment Committee.[65] The publication of such advisory reports helped Timor-Leste avoid a major attempt to defraud its SWF (Box 3.3).

b. Savings and/or stabilization. The NRF's resources are to be used as intergenerational savings, with a special provision for withdrawals in the wake of major natural disasters. The NRF does not include provisions for countering economic downturns unrelated to such disasters. Resource-based economies tend to have higher volatility than other countries and various Gulf-based oil exporters have used their SWFs for economic stabilization. This function is relatively sophisticated and requires transparent rules to prevent the misuse of resources.

c. Connection to debt policy. The legislation mandates the accumulation of assets in the NRF even if the government continues to borrow, and the NRF Act does not entail a debt ceiling or otherwise limit public borrowing.[66] Although, some degree of concessional borrowing may be manageable, the anticipation of future oil revenues could create new opportunities for non-concessional borrowing, heightening risks to debt dynamics. A similar lack of borrowing controls in the legislation governing Ghana's SWF led to the unsustainable growth of public debt, mainly through non-concessional Eurobonds.

d. Investment strategy. The legislation defines under some circumstances the fiscally sustainable withdrawal from the NRF as 3 percent of the projected balance of that fiscal year.[67] However, the rate at which NRF resources can be invested depends on market conditions. The management of financial assets is a specialized skill that requires sophisticated skilled administrative capacity and expertise, and even with adequate institutional and human resources a 3 percent return cannot be guaranteed.

Box 3.3 Transparency in Sovereign Wealth Management: Nauru versus Timor-Leste

SWFs—especially those operated by developing countries with limited administrative capacity and financial experience—have proven to be tempting targets for unscrupulous borrowers and high-risk ventures. The international experience reveals that the transparency afforded by stringent reporting requirements is the best defense against dubious investments and corrupt attempts to influence fund managers. Reporting requirements are most effective when simple, straightforward rules govern fund management, enabling stakeholders to clearly identify deviations from established laws and processes.

In Nauru, a lack of reporting requirements contributed to a climate of opacity and impunity around the management of its SWF, leading to a series of failed investments that severely depleted the country's savings. The most famous of these was a 1993 London musical about the life of Leonardo da Vinci, written by one of Nauru's financial advisors, which performed disastrously at the box office—costing the fund an estimated US$7 million. However, Nauru had lost far more a year earlier, when the fund invested US$30 million in "prime bank notes," a scam targeting unwary investors with promises of

[64] NRF Act Art 29(1) (g) "The annual budget proposal shall include...(g) the report on the Economically Sustainable Amount prepared by the Macroeconomic Committee established under section 20."
[65] NRF Act Art 41(3)(u) "The annual report referred to in subsection (1) shall include …(u) advisory reports from the Investment Committee established under section 13."
[66] The NRF Act requires that one-third of oil revenues be saved in the NRF when production is less than 200,000 barrels per day, as is forecast during the 2020-23 period.
[67] NRF Act, 2019, First Schedule, paragraph 7 (page 37).

high returns in an exclusive subsector of the international financial market. By the time the Nauruan public learned of the "investment," the funds had already disappeared via untraceable offshore-banking networks.

By contrast, Timor-Leste embraced relatively strict reporting requirements for proposed investments, which were instrumental in helping the country avoid a similar fate. Under the legal framework governing the country's SWF, the Minister of Finance is obliged to inform the monetary authorities of any new investment proposal. In September 2009, a firm known as "Asian Champ Investment Ltd" requested that the ministry deposit US$1.2 billion into an account at HSBC, promising a 7.5 percent upfront return and repayment of the principal within a year. Asian Champ gave the ministry just 15 days to respond. The Minister of Finance promptly contacted the Banking and Payments Authority (BPA, since replaced by the Central Bank of Timor-Leste) and relayed the terms of the proposal. The BPA advised against the investment, which would have deviated substantially from the fund's established procedures, and the Minister of Finance turned down Asian Champ's offer. Records of the proposal and the BPA's advice were published one year later. Subsequent investigations by the civil society group La'o Hamutuk failed to determine whether Asian Champ had any significant business activities, and the group concluded that the "investment proposal" was an attempt to defraud the SWF of a quarter of its total assets. Without the internal reporting and external publication of fund-related information, Timor-Leste may have fallen victim to the same unscrupulous practices that devastated the national savings of Nauru.

Note: Estimates in US dollars are adjusted for inflation.
Source: *The Guardian*, 2018; Australian Broadcasting Corporation, 2016; La'o Hamutuk 2012; *The New York Times*, 2000.

Table 3.1: The NRF Act: Preliminary Assessment of Conformity with the Santiago Principles

Santiago principles	Country examples	Preliminary assessment the NRF Act
Savings and/or stabilization	Positive examples: Saudi Arabia and Chile Cautionary examples: Panama	The budget is insulated from volatile oil revenues. Stabilization is not an objective.
Governance	Positive examples: Norway and Timor-Leste Cautionary examples: Chad	The PAOC independently assesses the NRF management and the utilization of withdrawals. The committee's 22 members include representatives from civil society, the bar association, the Extractive Industries Transparency Initiative, the press, and the Private Sector Commission.
Reporting	Positive examples: Azerbaijan and Timor-Leste Cautionary examples: Brunei and Kazakhstan	The PAOC will report twice a year on its website and to the National Assembly. The Macroeconomic Committee and the Investment Committee will provide reports to Ministry of Finance, and the publication of these reports is legally required as part of the annual report that the minister is required to table before the legislature.
Investment strategy	Positive examples: Trinidad & Tobago and Timor-Leste Cautionary examples: Nauru (Box 2.3)	The principles of the investment strategy will be defined by the Investment Committee, which reports to the Ministry of Finance. The Bank of Guyana will execute the strategy using custodian investors.

Source: World Bank staff assessment.

21. The balance in the NRF equals the previous year's resource balance plus additional revenues and minus withdrawals.[68] The previous year's balance attracts a rate of return of *r*, which is assumed to be 3 percent, once the value of the fund reaches US$1.5 billion.

$$R_t^{Fund} = R_t^{Royal、} + R_t^{ProfitShare} + R_t^{Other}$$
$$ResourceBalance_t = (ResourceBalance_{t-1}) * (1 + r) + R_t^{Fund} - Withdraw_t$$

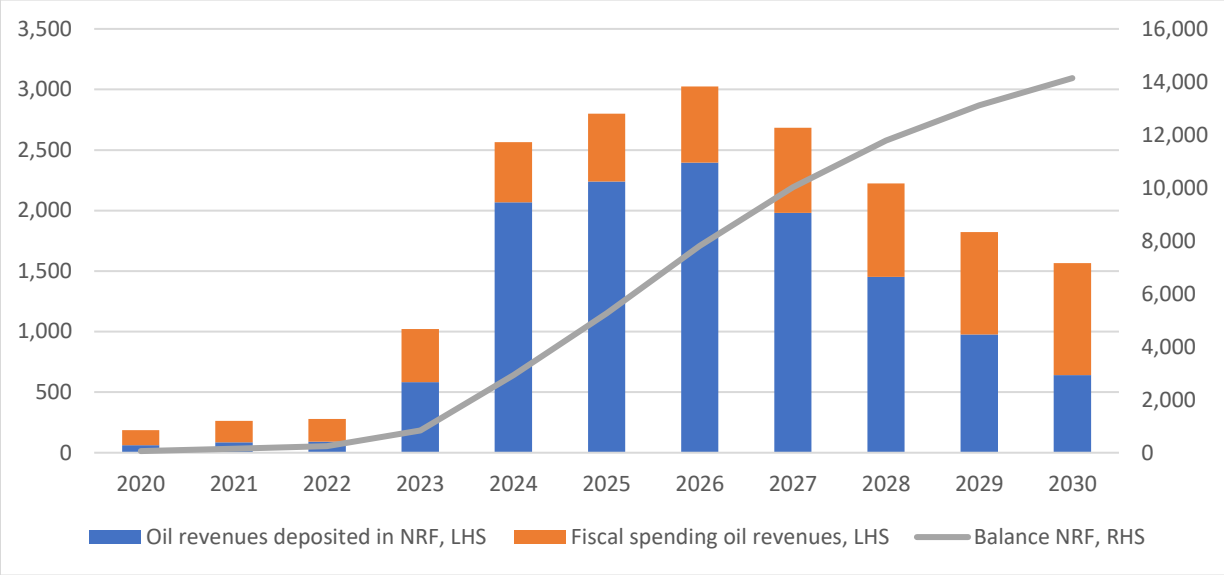
Withdrawals from the NRF are determined by the Minister of Finance based on their implications for macroeconomic management and fiscal sustainability. Withdrawals are subject to three caps, the calculations for which are specified in Schedule 2 of the NRF Act:

- The **production earnings cap** limits government withdrawals to a specific share of fiscal oil revenues: 67 percent if daily oil production is less than 200,000 barrels per day (bpd), 50 percent if production is between 200,000 and 400,000 bpd, and 33 percent if production exceeds 400,000 bpd;
- The **nonoil revenue cap** limits government withdrawals to 25 percent of nonoil revenues until 3 percent of the projected balance of the NRF exceeds this limit for that fiscal year; and
- The **fiscally sustainable withdrawal cap** is set at 3 percent of the projected NRF balance for the fiscal year.

22. Based on projected oil prices and production volumes, the application of the established rules would result in the rapid accumulation of NRF assets. Assuming the development of two oilfields and a moderate nonoil GDP growth rate (Section 2.3), NRF assets would amount to US$14.1 billion by 2030 (Figure 3.5). If five oilfields are developed, with similar nonoil GDP growth projections, NRF assets would total US$37.6 billion by 2030. By comparison, annual nonoil GDP is expected to reach just US$10.4 billion. These projections are for *gross* assets and do not reflect changes in the debt level. The current design of the NRF, however, does not constrain borrowing or limit debt levels.

[68] The design of the NRF allows for a gradual increase in spending of oil revenues up to 3 percent of assets invested in therein. This approach limits the risk of fiscal oil revenues being consumed too soon and requires having good governance and investments of the NRF assets.

Figure 3.5. NRF assets are projected to increased dramatically over 2020-2030.
(US$ millions)



Source: World Bank staff estimates and projection assuming WB GEP oil price projections as of March 13, 2020

23. The following chapters will analyze strategies to maximize the positive developmental impact of public investment and consumption while investing the balance of oil revenues in foreign assets managed by a SWF. Budgetary transparency will be essential to foster public trust in the integrity of the government and promote confidence in the fairness of the distribution of oil resources. Recent initiatives to introduce mobile-payment systems could form the basis for greater transparency in public financial management, but they must be adapted to the unique needs of Guyana. In addition to domestic spending, transparency and accountability in the management of foreign assets will be vital to ensure that the SWF fulfills its role in safeguarding macroeconomic stability and promoting intergenerational equity.

3.4 Conclusion

24. This chapter underscores the importance of prioritizing governance and institutional reforms, strengthening the civil services, ensuring the sound oversight of the O&G sector, properly designing and managing the SWF, and enhancing the efficiency of PFM systems. A robust policy and institutional framework will enable Guyana to manage the risks that the O&G sector generates while maximizing its benefits. Prudent management of fiscal oil revenues and foreign assets will require specialized technical skills, which are typically provided by international experts, even in high-capacity public sectors such as those of the Gulf states. The international experience emphasizes the crucial importance of appropriate and transparent oversight by the national authorities, as international expertise is no substitute for effective domestic governance. Finally, Guyana's public sector must progressively build its institutional capacity by modernizing PFM systems and establishing public agencies that can deliver an expanding range of services in a timely and transparent manner.

4. Chapter 4: Economic Transformation and Job Creation

…Alenna and her family hope that her parents will find better employment opportunities. Currently, her parents earn US$13, with which they must feed and care for a family of four, a situation similar to that of half of families living in the hinterlands. Additional income could enable Alenna to return to school, which she recently left as it had become too expensive. She always wanted to go to college, and a higher wage for her parents will provide extra resources that could bring her closer to realizing her dream. Ultimately, the country's oil resources may offer a job that would allow her to use her college education. The oil sector will be transformative for Guyana, but will it create jobs for Alenna's parents and, one day, for her?

Alenna's aunt, who operates a sewing business, is anxious. She makes sportswear. She worries that an influx of oil money might prompt more affluent Guyanese to buy imported brands like Nike and Adidas, and she is concerned that local food prices will rise. Her cousin, a 25-year-old roustabout with an easy smile and flashing dark eyes, is working on a crane crew lifting casing pipe for new wells, making twice what he earned working on a tugboat. He now has enough money to visit his parents and younger brother in New York and plans to build a house…

1. The discovery of oil has placed Guyana on a path to economic transformation, but the international experience provides a cautionary tale that symptoms of the Dutch disease tend to diverge the country away from an employment-rich transformation path. Notwithstanding the COVID-19 pandemic, oil and gas production is projected to dominate Guyana's economy over the medium term, eclipsing traditional economic mainstays such as agriculture and gold and bauxite mining. Meanwhile, rising foreign-exchange inflows and increased public spending will alter the relative prices in domestic markets, especially between tradable and non-tradable goods, which will spur the reallocation of resources and may lead to declining productivity, job losses, and the downsizing or disappearance of essential livelihoods. Like other resource-rich countries, Guyana is vulnerable to macroeconomic distortions that adversely affect employment dynamics and weaken productivity both within and across sectors. Overdependence on oil will limit the country's capacity to generate jobs. Generous transfers, which are entrenched in many oil-producing countries, can also generate disincentives to work.

2. Guyana's experience with its domestic mining sector offers a cautionary tale for the responsible management of oil and gas production. The 2006-2017 mining boom created a modest number of high-paying jobs, but its overall impact on employment was negligible. Instead of sustained job creation, Guyana experienced a shift in employment across sectors. Public-sector employment expanded, but service delivery remained poor.[69] The agricultural sector continued to absorb new labor, albeit at low wages (Figure 4-1), while industrial employment contracted as real exchange-rate appreciation diminished the competitiveness of processed sugar and rice exports on international markets. Along the coast, new mining jobs drew poor workers away from local industries, while in the interior service-sector employment among poor workers expanded at the expense of agriculture (Figure 4-2).

[69] http://www1.worldbank.org/publicsector/civilservice/countries/guyana/guyana1101.pdf

Figure 4-1: Job Creation and Median Earnings by Sector, 2006-2017

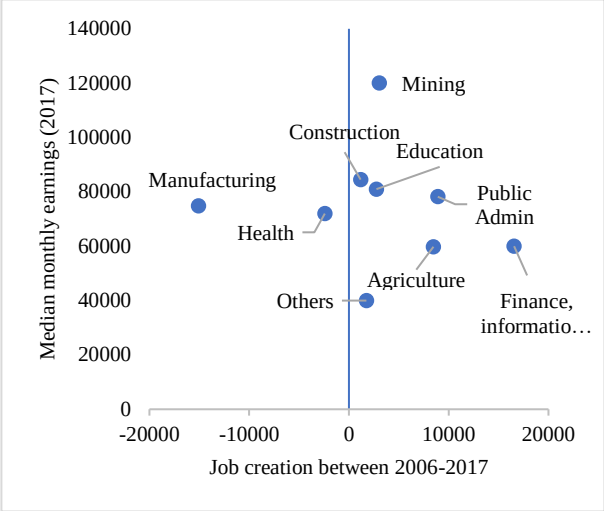
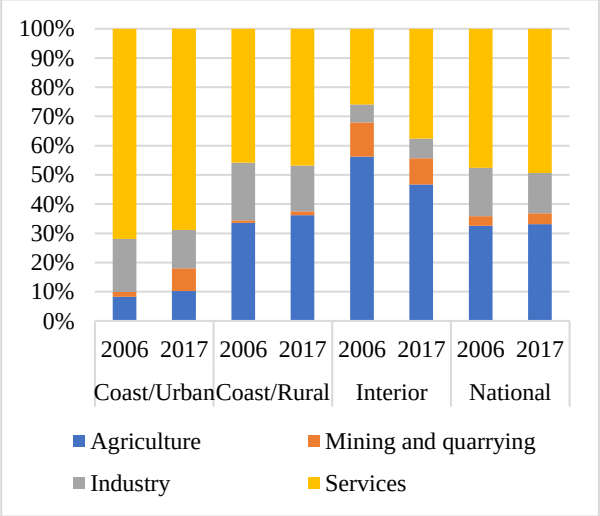


Figure 4-2: Composition of Employment among the Employed Poor by Geographic Area



Source: World Bank staff estimates from the Household Budget Survey 2006 and Labour Force Survey 2017. [70,71]

Table 4-1: Contribution to the Overall Growth of Value Added per Capita, Guyana, 2012-17

	Within sector changes in output per worker (%)	Changes in employment (%)	Inter-sectoral shifts (%)	Total (%)
Sectoral contributions				
Agriculture	-24.79	8.24	0.62	-15.93
Industry	111.72	-78.87	-3.62	29.24
Mining and Quarrying	120.60	-31.18	-72.11	17.31
Services	-2.03	38.83	-17.63	19.17
Subtotals	*205.50*	*-62.98*	*-92.73*	*49.79*
Demographic component				50.21
Total				100.00
Total % change in value added per capita 2012-2017				**14.85**

Source: Elaborated by the authors based on information from World Development Indicators (Survey of National Accounts) and Guyana Bureau of Statistics (BoS).

3. A Shapley decomposition reveals that limited employment creation between 2012 and 2017 contributed to the low poverty elasticity of growth during a period of sustained economic expansion. Half of the increase in per capita GDP over the period was explained by the increasing size of the working-age population, while a modest rise in labor productivity was partially offset by a decline in the employment rate (Table 4-1). The service sector drove job creation, consistent with the typical pattern for resource exporters, but the marginal productivity of service-sector workers remained low. Meanwhile, the marginal productivity of industrial workers significantly increased, but employment in the industrial sector fell sharply. The drop in industrial employment became especially pronounced when mining exports slid during 2012-15 before recovering during 2015-17, which weakened demand for labor in both the mining and construction subsectors.

[70] Agriculture includes hunting, forestry, and fishing. Industry includes the manufacturing sector, utilities and construction.

[71] Social assistance benefits reported in the Labour Force Survey 2017 include public assistance (including welfare grants, disability grants, invalidity grants), old-age pensions and survivor benefits.

4. Public investment will be critical to ensure inclusive and sustainable development by supporting an employment-intensive, productivity-enhancing economic transformation. The adverse impact of Dutch disease is expected to be especially pronounced in Guyana, given the size of its O&G resources relative to the nonoil economy, which could contribute to jobless growth. Numerous resource-rich countries have had their growth prospects derailed by Dutch disease and other symptoms of the so-called "resource curse." Excessive fiscal and economic reliance on natural resources, especially when accompanied by a decline in manufacturing and agriculture and an increase in import dependence, can increase a country's vulnerability to external shocks. Meanwhile, limited job creation can put pressure on the government to replace income-generating activities with transfers and subsidies. However, transfers and subsidies funded by resource revenues are subject to sustainability risks, as O&G reserves will eventually be depleted. To effectively mitigate the adverse macroeconomic impacts of resource exports, public investment must promote sustainable employment growth and enhance the competitiveness of the non-resource sectors. Across the world, countries that have managed to avoid the resource curse, such as Norway, Chile, and Malaysia, have pursued the fundamentals of economic policy to promote productivity and employment, facilitate structural diversification and build strong institutions.

4.1 The Oil Sector's Impact on Employment

5. The oil sector has fewer links to Guyana's nonoil economy than does the mining sector, and the capital-intensive nature of oil production sharply limits its employment potential. The international experience shows that oil production in developing countries typically requires massive amounts of investment, but it creates few direct jobs and does little to alleviate poverty. Even resource-rich countries that have registered double-digit growth rates have experienced only modest employment gains, and in most cases domestic job creation has been largely restricted to the construction phase, while the operational phase tends to involve very little local labor (Table 4-2). Large-scale oil and gas projects are both capital- and skill-intensive: many of their upstream inputs are sophisticated capital goods, and they tend to employ a small cadre of workers with highly specialized skillsets (

6. Table **4-3**). In Guyana, even the construction phase is expected to generate few jobs, as all the country's current commercial oilfields are located offshore and will be developed primarily by expatriate specialists. The oil sector is, however, generating significant indirect employment in Guyana's transportation, logistics, food and hospitality, and financial and accounting services sectors, and many of these jobs will persist through the exploration, construction, and production phases.

7. Guyana's oil and gas sector is projected to create about 3,850 direct jobs and 23,100 indirect jobs by 2025, employing 0.7 and 3.9 percent of the workforce, respectively.[72] Guyana has adopted a prudent approach to the development of local content, which is informed by the international experience, the novelty of the country's oil sector, the limitations of the domestic labor market, and the country's undeveloped industrial base. In 2019, an estimated 1,750 Guyanese (0.5 percent of workforce) were supporting project activities by ExxonMobil, Tullow, and Repsol,

[72] Guyana's working-age population (ages 15 and above) is projected to reach 595,000 in 2025 (UN Population). These estimates are for five floating production, storage, and offloading facilities and one non-Stabroek project. The multiplier effect for indirect job creation is six, which is based on data from Mozambique (https://www.theigc.org/blog/multiplier-effect-mozambiques-natural-gas-discovery-fdi-bonanza/)

the three companies currently drilling in Guyana, and petroleum-related service companies have created another 250 jobs. However, the international experience highlights the limited employment potential of offshore oil production in comparable countries. For example, Trinidad & Tobago's well-established oil and gas sector accounts for 32 percent of GDP but only 3.4 percent of employment.

Table 4-2: The Global Experience with Job Creation in Extractive Industries

Country	Project	Resource	Investment, % of GDP (2010)	Population, millions (2010)	Direct employment	
					Construction	Afterward
Papua New Guinea	LNG Project	Natural gas	237	7.3	9300	1000
Mongolia	Oyu Tolgoi	Copper,Gold	74.2	2.7	14800	3-4000
Botswana	Jwaneng Cut 8	Diamond	20.2	1.9		1000
Papua New Guinea	Ramu	Nickel	19.0	7.3	5000	2000
Namibia	Husab	Uranium	11.9	2.1	5200	1200
Zambia	Lumawana	Copper	9.3	13.6	4700	
Pakistan	Reko Diq	Copper,Gold	4.0	179	2500	200
Peru	Conga	Gold	2.6	29.1	6000	1700

Source: World Bank Development Report 2013

Table 4-3: The Global Experience with Job Creation in the Oil and Gas Sector

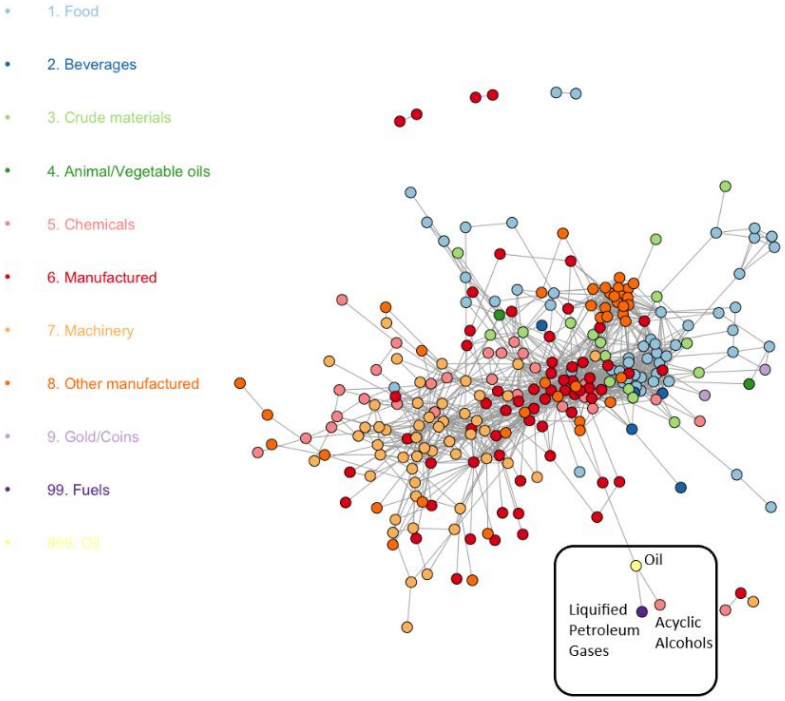
Country	Population (million)	Contribution of the oil and gas sector (%)		Year
		GDP	Employment	
Equatorial Guinea	0.99	78.0	4.0	2011
Iraq	34.4	65.0	1.0	2014
Timor-Leste	1.2	48.0	2.0	2016
Trinidad & Tobago	1.4	32.1	3.4	2016
Norway	5.2	15.0	5.0	2018
Ghana	27.2	6.0	0.02	2014

Source: EITI, IFC, ILO, AfD

8. Guyana's undiversified and largely agricultural economic base constrains its potential to integrate domestic production with the oil sector via either upstream or downstream value chains. Primary commodities dominate Guyana's production and exports, and the country lacks the sophisticated manufacturing capacity necessary to produce most oil-sector inputs or to process petrochemicals. A product-space analysis reveals that Guyana currently exports few products that are linked to crude oil, and most of these are only distantly related.[73] Existing Guyanese exports that are linked to crude oil include liquified petroleum gas, acyclic alcohols, and aluminum, but oil is by far the most isolated sector of the product space (Figure 4-3).

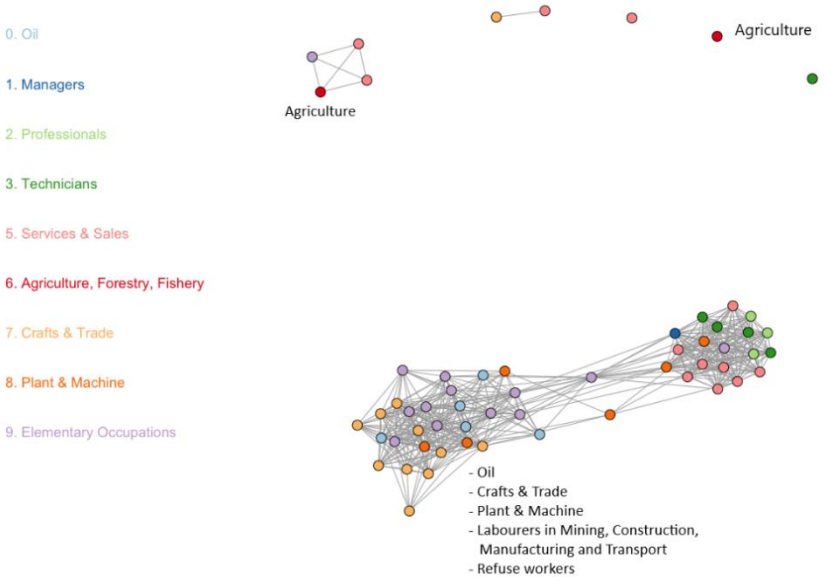
[73] Product-space analysis is an application of network theory (Felipe and Rhee, 2013), which depicts a network of products whose proximity is determined by how likely they are to be exported together. Some products are closely linked because they require the same or similar capabilities to produce, while others are closely linked because they are complementary.

Figure 4-3: 2015 Guyana Product Space plus Crude Oil



Source: Thanh (2020, forthcoming)
Note: Proximity measures how likely two products are jointly exported. In this figure, the proximity threshold is capped at 0.43.

Figure 4-4: 2015 Guyana Occupation Space plus Crude Oil



Source: Thanh (2020, forthcoming)
Note: Proximity measures how likely two occupations require the same set of skills. In this figure, the proximity threshold is capped at 0.5.

9. Guyana's workforce skills profile and labor-market structure are also poorly aligned with the needs of the oil sector. An occupation-space analysis shows that workforce skills in Guyana are organized into three groups: (i) a cluster of professionals, technicians, service workers, and sales workers; (ii) a cluster that includes craft and related trade workers, as well as plant and machine operators and assemblers; and (iii) an isolated cluster mostly composed of agricultural workers.[74] Although agriculture is a major employer in Guyana, agricultural skills are the least transferable to other occupations, and all oil-related occupations are linked to the second cluster (

10. Figure **4-4**). The gap between the two main job clusters and their lack of connectivity with outliers—especially agriculture—underscores the major challenges facing Guyana as it strives to reposition its labor force to take jobs linked to the oil sector.

11. Given Guyana's limited pool of skilled labor, even relatively weak linkages between the oil and nonoil sectors may shift a significant amount of skilled labor away from activities on which the livelihoods of poor households indirectly depend. Workers with technical skills that can be employed in the oil sector are currently engaged in construction, transportation, and agro-processing, which are closely linked to agriculture. A rapidly rising wage premium for technical skills will attract workers to the oil sector and related industries, which may negatively impact the competitiveness of the agricultural sector. The mining sector is also at risk of losing competitiveness as the oil sector and the urban services sector attract a larger share of skilled workers.

12. Oil exports can negatively impact labor markets and employment dynamics via the appreciation of the real exchange rate. Rising export revenues and surging capital inflows can lower the real price of imports and increase the real price of exports, weakening the competitiveness of non-resource exporters and domestic producers who compete with imports.[75] Because the appreciation of the real exchange rate negatively impacts the competitiveness of tradable sectors, manufacturing and agriculture are likely to experience job losses as employment shifts toward non-tradable services. In addition, many resource-rich countries have adopted generous transfer policies and expanded public employment, which can put upward pressure on reservation wages, further distorting employment dynamics in the private sector.

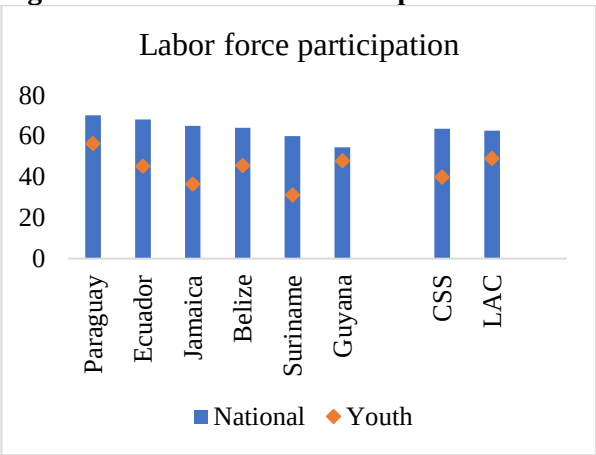
13. In Guyana, the adverse effects of oil exports on the competitiveness of tradable sectors will intensify pressure on an already weak labor market, characterized by low rates of labor-force participation and high rates of unemployment. Labor-force participation and employment rates are especially low among disadvantaged groups, including women, young people, individuals with low levels of educational attainment, and those from low-income households (Figure 4-5). The labor-force participation rate in Guyana was estimated at 54.5 percent in 2017, lower than that of neighboring Suriname and below the LAC average. The labor-force participation rate is particularly low among women in rural coastal areas at 35 percent, though it reaches just 50 percent in urban areas and the interior. Cultural attitudes and traditions appear to play an important role in

[74] Thanh (2020, forthcoming). An occupation-space analysis using the full O*NET dataset (not limited to Guyanese occupations) also shows two major clusters connected to one another in a ring shape.

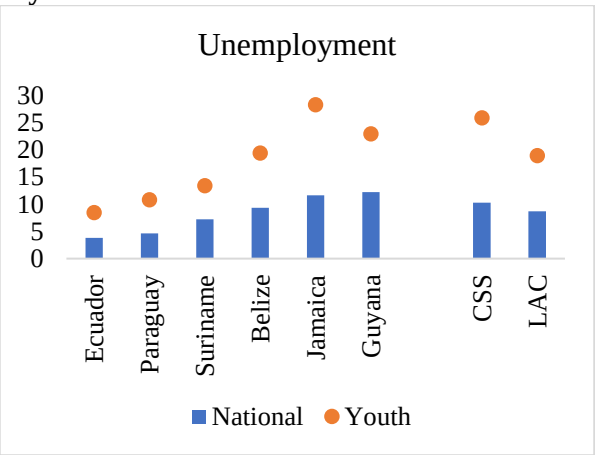
[75] Brahmbhatt et al. (2010) found that the tradable sector in resource-rich countries is lower than the norm by approximately 15 percent of GDP. Import account for a very large share of GDP in many oil-rich countries, including Timor-Leste (60%), the United Arab Emirates (70%) Trinidad & Tobago (39%), Qatar (37%), Norway (33%), and Guyana (61%).

this dynamic, as the labor-force participation rate among Indo-Guyanese (29.1 percent) was far lower than those of Afro-Guyanese women (58.4 percent) or Amerindian women (44.7 percent). Traditional gender roles and gender wage gaps contribute to the lack of employment opportunities for women, who often cite family responsibilities and housework as reasons for not participating in the labor force (Figure 4-6). Employed Guyanese women earn 15.7 percent less than their male counterparts after controlling for all other characteristics.

Figure 4-5: Labor Force Participation and Unemployment



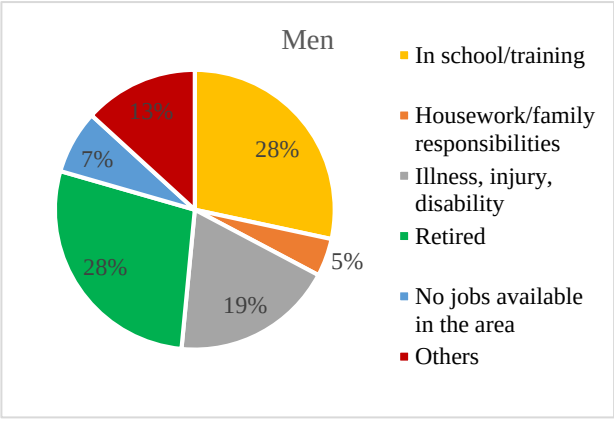
Source: World Development Indicators (2015-2017) and Guyana Bureau of Statistics (Q4, 2017)

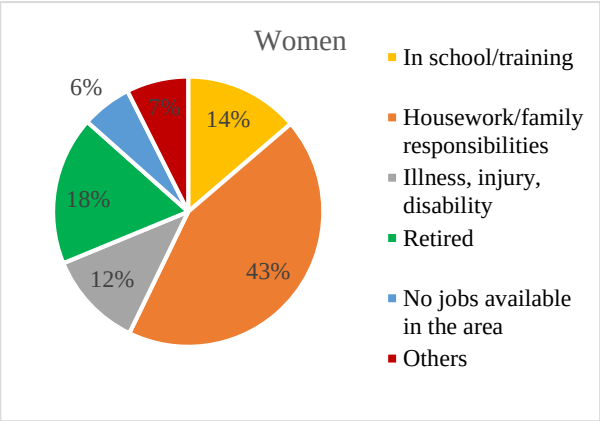


Source: World Development Indicators (2015-2017) and Guyana Bureau of Statistics (Q4, 2017)

14. At 12.2 percent, Guyana's unemployment rate is higher than the averages for LAC (8.7 percent) and the Caribbean (10.3 percent). Labor markets are dominated by workers from higher-income households, while opportunities for workers at the bottom end of the distribution are limited. Over 70 percent of adults from households in the top quintile participated in the labor market in 2017, compared to just 40 percent of adults from the bottom 40 percent. The unemployment rate among households in the bottom 40 percent is more than double that of the top 60 percent. Unemployment is mostly structural, and over 40 percent of unemployed workers report being without work for more than a year. Among the longer-term unemployed, two-thirds lack a complete secondary education and face limited job opportunities for their skills.

Figure 4-6: Reasons for Not Participating in the Labor Force





Source: Guyana Bureau of Statistics (Q4, 2017)

15. The revenues produced by the oil sector can also distort the labor market by encouraging the unchecked expansion of public-sector employment.[76] Oil revenues create strong incentives to boost public-sector employment. The public sector accounts for 60 percent of total employment among nationals of the Gulf Cooperation Council (GCC) countries and 70 percent of formal employment in Timor-Leste, far above the developing-country average of 9 percent. While expanding public sector employment helps boost the number of jobs, it leads to crowding out of private sector employment as the public sector competes for workers in the labor market with the private sector. Moreover, while public-sector wage rates must be sufficient to attract and retain skilled workers, highly paid public-sector jobs can increase reservation wages and reduce overall productivity by shifting the allocation of scarce human capital from the private to the public sector, or from high-productivity to low-productivity sectors. These risks are especially acute in Guyana, where the private sector is underdeveloped and where emigration has depleted the supply of skilled workers.

4.2 The Role of Public Investment in Facilitating Economic Transformation

16. In the absence of a concerted policy response, the gravitational pull of the oil industry, services, and the public sector on the Guyanese labor force will likely weaken the competitiveness of key nonoil sectors such as manufacturing and agriculture. These sectors play a major role in the livelihoods of poor and vulnerable households, and their long-term growth will be critical to the sustainability of Guyana's economic development as the oil sector inevitably declines. In this context, the following section explores public investment options to support Guyana's transition to a modern economy that provides high quality jobs for its citizens.

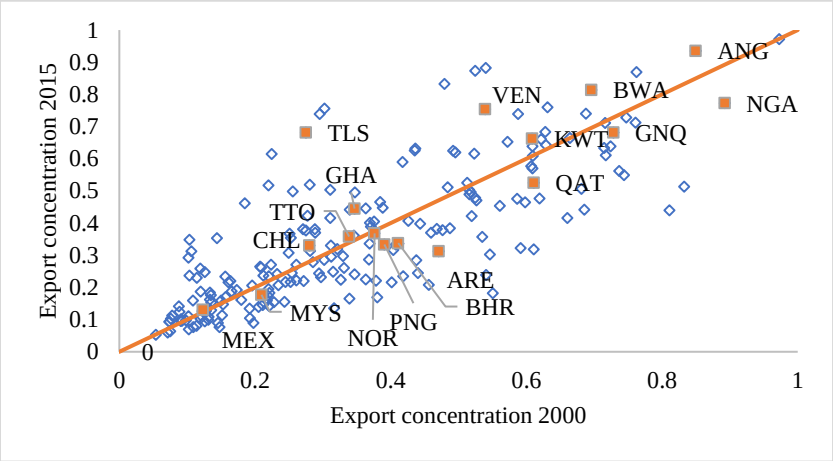
4.2.1 Economic Diversification

17. Diversification in the nonoil sectors will be crucial to create productive employment and maintain incentives to work. Many resource-rich countries have attempted to reduce their dependence on natural resources by pursuing economic diversification strategies focused on creating local linkages and productive employment.[77] These countries are diverse in terms of size, geography, demography, economic structure and skills endowments, and both their initial circumstances and the outcomes of their policies vary substantially (Figure 4-7). For example, Malaysia has a large workforce that enabled it to successfully diversify into labor-intensive industries. In Qatar and UAE with smaller population, and with the public sector hiring nationals at premium wages, the same strategy led to an influx of low skilled migrants. By contrast, several GCC countries diversified into capital-intensive sectors such as finance and telecommunications, as well as oil-related downstream value chains such as petrochemicals and energy-intensive heavy industry. In countries with more limited levels of human capital and a small industrial base, such as Trinidad & Tobago, diversifying into the downstream sectors has generated insufficient jobs even for small populations. To formulate a well-designed and appropriately sequenced diversification strategy, Guyana must draw on the global experience of resource-rich developing countries (Table 4-4).

[76] Ali and Elbadawi (2012)

[77] In addition to increasing resilience to commodity price volatility and promoting sustainability as natural resources are depletable.

Figure 4-7: Export Concentration among Resource-Rich Countries



Source: UNCTAD

Note: Product concentration index shows to which degree exports of individual economies are concentrated on a few products rather than being distributed in a more homogeneous manner among several products.

Table 4-4: The Global Experience with Diversification Strategies in Resource-Rich Countries

Diversification strategy	Example	Products	Effect on labor markets	Skill gaps for Guyana[1]
High value-added downstream	Trinidad & Tobago	Refining, fuels, LPGs, petrochemicals	Limited job creation (absorbed by public employment)	□□□
High value-added commodities	Chile	Agricultural products	Job creation, firm creation	□□
High value-added manufacturing	Malaysia (1990s)	Automotive, medical devices, telecommunication equipment	Job creation, firm creation	□□□
High value-added services	Bahrain, Norway	Finance, deep-sea drilling	Limited job creation, firm creation	□□□
Labor-intensive/ low value-added industries	Indonesia, Malaysia (1970-80s) Mexico	Agro-industries, Textiles, Electronics	Labor absorbing for labor-abundant countries	□
	UAE, Qatar	Tourism, construction	Immigration of low-skilled labor Lack of employment creation for nationals (absorbed by public employment)	□
	Bahrain, UAE, Qatar	Aluminum, fertilizer, polymer, steel, cement	Immigration of low-skilled labor Lack of employment creation for nationals (absorbed by public employment)	□

Note: [1] The gap between skills required by the strategy and skills possessed by the current Guyana's workforce ranging from large (□□□) to small (□).

18. A diversification strategy must account for the limited institutional capacity of the public sector, or the 'bandwidth constraint' which narrows the range of policies that can be

implemented simultaneously. Maloney and Nayyar (2017) argue that government interventions should focus on correcting market failures that can be identified and quantified. They suggest that industrial policies have been more successful in correcting horizonal market failures, which affect a range of industries, than vertical market failures, which affect specific industries or value chains. Because policies that attempt to address vertical market failures often involve supporting selected industries, they may be more conducive to rent-seeking behavior. Successfully implementing an industrial policy agenda in Guyana will require improving the quality of data collection, enhancing interagency coordination, and strengthening resilience against regulatory capture**.**

19. Guyana could leverage its vast nonoil natural resources to support diversification. Guyana is endowed with considerable untapped natural resources, including minerals, agricultural lands, forests, water, etc., which oil revenues could help develop. Enabling the growth of high-value-added sectors in which Guyana has a comparative advantage based on its natural resources could facilitate the country's gradual economic transformation. The development of the nonoil resource sectors could also build the country's stock of complementary or transferrable skills, easing the potential skills shortage that may arise during the country's economic transition. While oil revenues can allow for the sustainable utilization of other natural resources, weak management and oversight, an inadequate institutional framework, or limited administrative capacity can have deeply negative impacts on environmental and natural resources, therefore, on the sustainability of economic transformation. The oil sector entails environmental risks at all stages of its development, and the growth of the nonoil resource sectors can also result in environmental destruction, including acid raid, water contamination, and the degradation of key ecosystems, if environmental risks are not properly managed. Sustainable management of oil and other natural resources will be essential to inclusive and sustainable growth, economic diversification away from extractive industries, and to reduce the risk of overreliance on one commodity for which global demand may weaken over time.

20. Diversifying and modernizing agriculture would increase the impact of oil revenue on poverty reduction by creating employment and increasing income levels for workers at the bottom of the income distribution. Around 90 percent of households whose livelihoods rely on agriculture, forestry, and fishing live in rural areas, and the rural poverty rate exceeds 50 percent, while the urban rate is just over 30 percent. For the rural poor, high-value-added, climate-resilient agriculture could be an important source of employment opportunities and gains in household income. Increased domestic food production would also help mitigate price volatility and help address food and nutrition insecurity.

21. Strengthening the agricultural sector will require a combination of investments in physical infrastructure and human capital, supported by the diffusion of new technologies. A robust agricultural sector requires high-quality transportation infrastructure capable of moving goods quickly and reliably in large volumes and at low cost. In addition, many small farming communities have limited knowledge of value-adding techniques and lack access to agro-processing facilities. Many households in the interior rely on mining, logging, and subsistence agriculture. Rural producers have limited access to markets and public services, face high transportation costs, lack information on relative prices, and have difficulty acquiring sophisticated business skills.[78] The agricultural land in the interior is highly fertile, with ideal conditions for

[78] CEPAL (2011).

producing staple crops for domestic consumption, which could bolster national food and nutrition security while maintaining low deforestation rates.[79] Agribusiness and agro-logistics present an opportunity to modernize and add value, and providing services such as input supply, machinery servicing, cold-storage facilities, packaging, and transportation could provide attractive job opportunities for rural youth. While maintaining strong sugar and rice subsectors is important, diversifying into new markets and export opportunities could reduce vulnerability to international price fluctuations and provide a more nutritionally robust local food basket. The establishment of input and service providers, small-scale processing facilities, and transportation and logistics services in rural areas will be critical to stimulate production, strengthen links to urban and regional markets, and accelerate employment growth in rural communities.

4.2.2 The Business Climate

22. A healthy business climate will be essential to facilitate economic diversification. The creation of high-quality jobs requires a well-functioning competitive private sector. Over the last decade, job creation has been driven by the expanding public sector. The private sector remains underdeveloped, hindered by an unfavorable business environment, interventionist economic policies, the large role of state-owned enterprises,[80] limited competition, and rent-seeking behavior.[81] A poor overall business climate constrains competition, and Guyana ranked 134th out of 190 countries on the most recent Doing Business Index (Figure 4-9). Small markets, high electricity costs, and an unfavorable regulatory climate further inhibit private-sector development (Figure 4-8).

23. The financial sector plays a critical role in supporting competition, and its importance to the nonoil economy will increase as the oil sector attracts an expanding share of the country's scarce financial capital. Guyana's financial sector is underdeveloped but growing. The capital markets are shallow, and the national stock market lists just 15 companies with a total market capitalization of US$1.27 billion. Trading is limited, and revenues are insufficient to cover operating costs. Bonds are primarily issued through private placements. A concentrated and inefficient financial sector dominated by banks constrains access to finance for the private sector. While the banking system is very liquid, interest rates remain high, and longer-term financing is scarce.[82] Lending practices are highly conservative and risk averse, and lenders tend to focus on well-established customers and sectors.[83] A lack of specialized financial institutions leaves many small and medium enterprises reliant on informal money lenders. According to the 2010 World Bank Enterprise Surveys, Guyanese firms relied on informal sources of funding more than those

[79] While the deforestation rate remains low at 0.05 percent (2017) but could be accelerated by the oil boom. Currently, forest cover loss is concentrated in the northeast, close to Georgetown and to the coastal areas.

[80] There are more than 10 commercial state-owned enterprises in Guyana, including CJI airport, Guyana Power and Light Inc. (GPL), Guyana Post Office Corporation (GPOC), Guyana Rice Development Board (GRDB), Transportation and Harbor Department (THD), Guyana Oil Company Limited (GUYOIL), Guyana National Newspaper (GNN), Guyana National Printers Limited (GNPL), Guyana National Shipping Company (GNS), and Guyana Sugar Corporation (GUYSUCO). In 2017, GUYSUCO alone accounted for 6 percent of total employment.

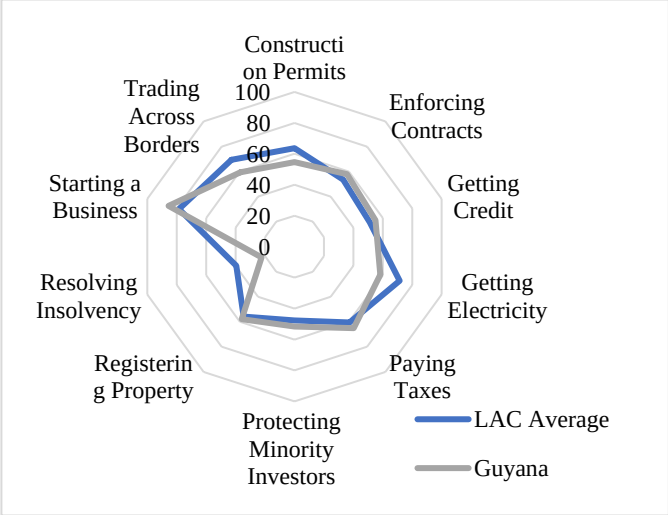
[81] Currently, most of Guyana's exports are low-value-added primary commodities (sugar, gold, bauxite, timber, rice, and shrimp), which are sensitive to international prices.

[82] Guyana has a concentrated banking system (6 banks, of which 3 own over 50% of total assets). The average capital adequacy ratio is 29.5, return on assets is 2.25 and non-performing loans are 10.8 percent of the total.

[83] Many firms catering to the O&G sector are not able to expand due to owners' lack of collateral. There is also a lack of financial products catering to firms such as purchase order (PO) financing and invoice factoring.

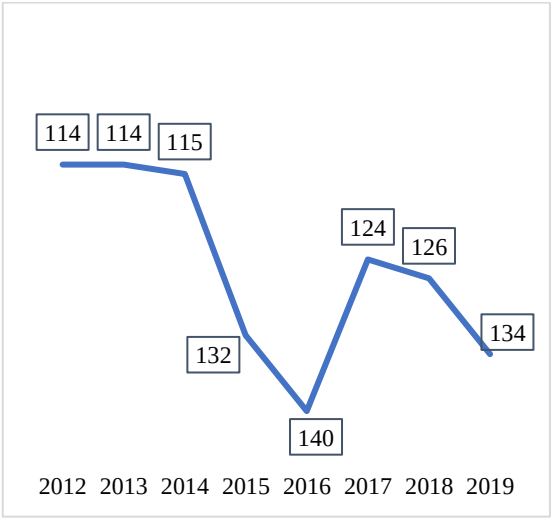
of any other Caribbean country. Electronic payment systems are underdeveloped, and the prevalence of cash transactions slows productivity growth and reduces financial transparency.[84]

Figure 4-8: Doing Business Indicator Scores, Guyana, 2018



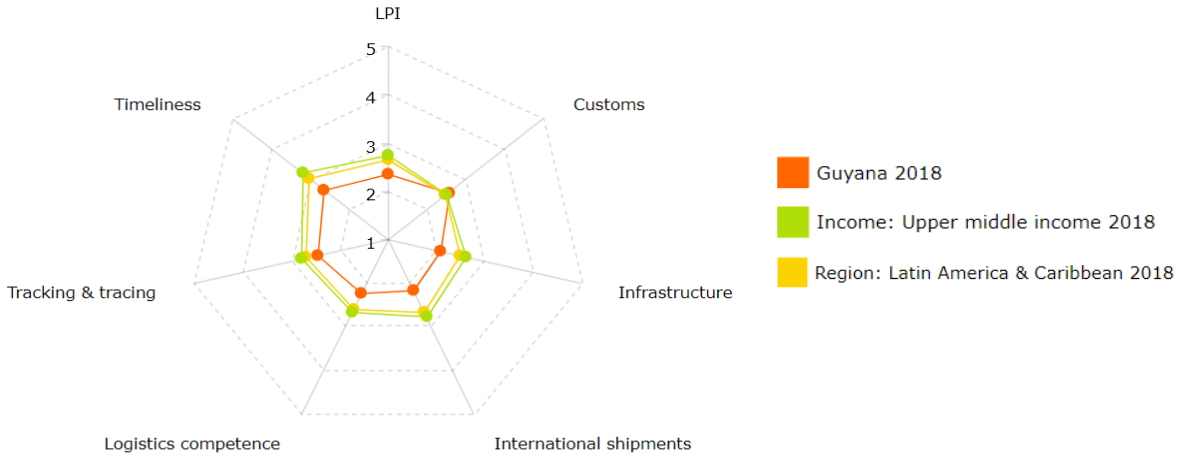
Source: World Bank, 2018; Note: Indicators are scored on a scale from 0 (worst practice) to 100 (best practice)

Figure 4-9: Doing Business Rankings, Guyana, 2012-18



Source: World Bank Doing Business; Note: Rank is from 1 (best practice) to 190 (worst practice)

Figure 4-10: Logistics Performance Index, Guyana and Comparators, 2018



Source: World Bank LPI database.
Note: Indicators are scored on a scale from 0 (worst practice) to 5 (best practice)

24. Guyana's logistics sector is underdeveloped, and major improvements will be necessary to enhance its overall economic competitiveness. An effective logistics sector is one of the core enablers of economic diversification, as all industries depend on logistics services. Guyana ranked 132nd out of 150 countries on the most recent Logistics Performance Index, with

[84] Guyana's payment system lags far behind the needs of the economy. Nearly 99 percent of payments are paper-based which costs nearly USD$74 million (2.5% of GDP) per year in direct and indirect costs.

an overall score of 2.36, below the averages for LAC (2.66) and upper-middle-income countries (2.76), with particularly acute deficiencies in the areas of infrastructure and international shipments (Figure 4-10). High logistics costs undermine the competitiveness of Guyanese exporters.

4.2.3 Closing the Infrastructure and Technology Gap

25. Investing oil revenues in technology and infrastructure could improve the competitiveness of targeted nonoil sectors. Public investment is critical to improve productivity and offset adverse impact of real exchange-rate appreciation on the nonoil sectors. For example, Malaysia and Indonesia successfully promoted the development of agro-industrial subsectors by using a combination of subsidies and infrastructure investment to counter the effects of Dutch disease. By contrast, the rise of Nigeria's oil sector destroyed the country's once-thriving cocoa industry.

26. Guyanese firms already possess significant advantages over firms in other Caribbean countries in terms of research and development activities and innovation. According to the 2010 World Bank Enterprise Surveys, a full 21 percent of Guyana's firms were defined as "innovative," almost twice the Caribbean average of 11 percent.[85] Guyanese firms surpassed their Caribbean counterparts in process innovation and spending on research and development. Among the country's innovative firms, 80 percent were domestically owned, and most were medium to large. The data show that innovative firms tend to have higher levels of labor productivity than non-innovative firms, though these productivity gains are smaller after accounting for differences in observable characteristics like firm size and exporter status. Nevertheless, the relationship is strong enough to warrant increased financial support for firm-level innovation. The demonstrated capacity of Guyanese firms to innovate could provide the basis for implementing a technology-driven development strategy.

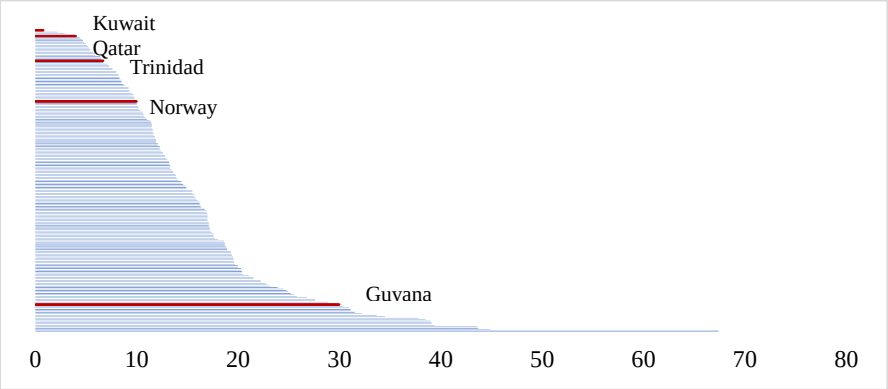
27. High electricity prices are an especially acute constraint on growth and diversification. Average electricity prices in Guyana are currently among the highest in the world, due largely to the country's dependence on oil-based power generation, which accounted for 87 percent of total installed capacity in 2016, as well as the relatively high technical and commercial losses (Figure 4-11). Guyana's oil reserves could provide cheaper and cleaner electricity by enabling it to use natural gas to supplant its current reliance on carbon- and pollution-intensive heavy fuel oil. While the merits of this plan are a matter of broad consensus, the location of a site where gas could be brought onshore has not yet been determined. Building a new gas-fired plant and the necessary transmission lines will require significant investment. Meanwhile, the investments in solar and hydropower, which entail higher generation costs but lower transmission costs, are expected to be implemented in parallel as Guyana strives to reduce its carbon emissions.

28. Inadequate domestic and international connectivity is a major obstacle to inclusive growth in Guyana. Guyana's transportation infrastructure consists of 98 km of railroads and 3,995 km of roads, both of which are concentrated in coastal areas. The country's road density, (0.024) is far below the LAC average (0.462), and the limited road network constrains the

[85] An innovative firm is defined as any firm that has taken action to increase its knowledge (i.e. new concepts, ideas, processes, and methods).

movement of goods and people. Transportation infrastructure is weakest in the interior, which contributes to deep regional disparities in access to public services and economic opportunities. The lack of a deep-water port reduces Guyana's export capacity and inhibits the development of the oil sector.

Figure 4-11: Electricity Prices, Guyana and Comparators, 2018
(US¢ per kW)



Source: World Bank Doing Business

29. Guyana can leverage information and communications technology (ICT) to promote a more diverse and equitable growth pattern. Internet access is associated with faster economic growth, enhanced productivity, and increased employment. Guyana´s telecommunications markets, including both mobile and fixed broadband, are among the least developed in LAC. Competition is limited, and the telecommunications sector lacks an effective governing authority, resulting in high prices and underinvestment in infrastructure. ICT penetration is low in Guyana: the fixed broadband penetration rate is 34 percent, and mobile internet is even lower at 15 percent, with wide urban/rural and coastal/interior differences in internet use. According to the 2014 Multiple Indicator Cluster Survey (MICS), only 41 percent of young people in the interior used the internet at least once a week, compared to 74 percent in the urban coastal and 54 percent in rural coastal areas. Internet connectivity consists of several interrelated components. The first mile refers to international links, the middle mile to national infrastructure such as fiberoptic backbones and data centers, and the last mile to end-user access networks such as fixed and mobile broadband. Promoting telecommunications tower sharing can expand the last-mile network coverage in rural or remote areas.

4.3 Conclusion

30. This chapter highlights the importance of economic diversification to promote inclusive and sustainable economic transformation in Guyana. With Guyana set to undergo an important structural transformation, cross-country experiences provide a cautionary tale. While Guyana's oil sector is expected to create few direct jobs, a massive influx of oil revenue is expected to change the dynamics of local labor markets. In the absence of sterilization instruments, rising export volumes and foreign-exchange inflows will put upward pressure on the real effective exchange rate, eroding the competitiveness of the tradable sector and increasing the country's dependence on oil exports. Increasing the size of the civil service, expanding the use of subsidies, or establishing a system of fiscal transfers could allow the benefits of oil-driven growth to reach a

larger share of the population. To achieve inclusive and sustainable development, and to avoid the worst manifestations of the resource curse, including undermining incentives to work, the government should implement policies that promote diversification and a strong, competitive private sector. Private sector development is particularly pertinent in Guyana with important migration patterns both internally and internationally. Three priority areas for policy action include:

- **Improving the business environment through regulatory reform and infrastructure investment.** To offset the anticipated decline in international competitiveness due to Dutch Disease, the cost of doing business must be significantly reduced. Investments in electricity and transportation infrastructure can lower production and logistics costs, which are the chief obstacles to the ability of Guyanese firms to compete in global markets. Complementary investments in ICT infrastructure would expand market access, enhance productivity, and stimulate innovation. The regulatory and legal frameworks for clearing customs, obtaining permits, and resolving insolvency all require major improvements.
- **Containing the growth of public-sector employment.** While the size of the public sector should expand to improve service delivery, and wage rates should be competitive with the private sector, public employment and wage policies should not excessively distort labor-market incentives. While public-sector employment can be used to distribute oil wealth, highly paid public employment crowds out job growth and investment in the private sector by setting high reservation wages and competing for scarce human resources. Distortions in relative wages can also lower overall economic productivity by encouraging the reallocation of physical and human capital from the private to the public sector. These dynamics can undermine private-sector competitiveness and inhibit economic diversification.
- **Leveraging untapped human and natural capital.** Developing high-value-added sectors in which Guyana has a comparative advantage based on its natural resources could facilitate an inclusive economic transformation while limiting the disruptive effects of skills shortages. Labor policies should be updated and strengthened to facilitate the reallocation of labor across industries and from rural to urban areas, including those enshrined in the Caribbean Single Market and Economy. The government should review its employment-protection legislation, active labor-market policies, and policies to promote gender equality in the labor market, among others. Comprehensive immigration reforms are urgently needed to manage rising immigration levels and access the human capital of the large Guyanese diaspora, thereby reducing the risk of a mismatch between labor supply and demand during Guyana's economic transformation. Likewise, it is also important for Guyana to invest in other forms of capital as they deplete their nonrenewable natural resources to ensure sustainable development into the future.

5. Chapter 5: Human Capital Development and Sustainable Poverty Reduction

…When Alenna was 5, one in five of her Amerindian friends were stunted. At the age of 6, she enrolled in a primary school. Thanks to free education provided by the government, her parents did not have to pay for her tuition. Like half of families living in the hinterlands, her parents earn less than US$12 a day to feed a family of four. However, going to school was hard; she had to canoe for several miles and with lack of school supplies and nutritive meals, which contributed to her lack of focus in class when she reached school. So, when she finished grade 6, her parents decided that it was best for the family that she dropped out of school and helped her mother on household work. She always wanted to go to secondary school and eventually university. However, the nearest secondary school was even farther away, and attending university was almost impossible. There was only one tertiary institution in the hinterlands and studying in Georgetown would be too costly and too difficult to compete with students from the coastland. Her chance was very small. Only 3 out of 100 students from the hinterlands continued to enroll in tertiary education. The newfound wealth will be transformative for Guyana, but will it be so for Alenna?

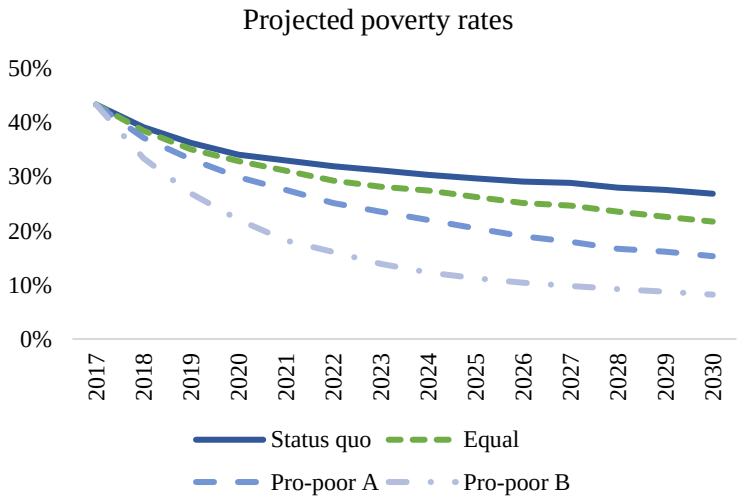
1. Given the oil sector's modest projected impact on job creation and nonoil economic activity, government spending and distributive policies will be the country's main tools to ensure an equitable distribution of oil wealth that benefits poor and vulnerable households. Unlike other economic activities, in which most added value is distributed to workers and owners as wages and profits, oil rents accrue to the government, which redistributes them through public spending. How the government utilizes the resources generated by the oil sector will largely determine Guyana's development trajectory and the wellbeing of its citizens.

2. Guyana was already a resource-rich country prior to the discovery of oil, but it had long struggled to transform its resource wealth into inclusive growth. Guyana's poverty rate has declined since 1991, but it remains among the highest in the LAC region at 43.4 percent, as decades of relatively jobless growth failed to yield significant poverty reduction. The advent of oil revenues could break this cycle, accelerating Guyana's development and permanently reducing monetary and nonmonetary poverty (Figure 5-1). However, oil revenues could also exacerbate Guyana's existing challenges and cause the country's development pattern to deteriorate further. The successes and failures of other resource-rich countries yield important lessons for Guyana as it strives to convert its oil wealth into equitable and sustainable improvements in living standards.

3. Two dimensions of public spending will determine how effectively the government translates its oil-revenue windfall into sustainable and inclusive growth. The first is human capital development, as the effectiveness and level of public spending on health and education will directly impact the productivity of the current and future workforce. This will influence the ability of Guyanese workers to participate in the oil sector and related activities, as well as the economy's capacity to sustain robust growth rates as oil revenues diminish. The second dimension is social protection and cash transfers, as these policies will be critical to ensure that the benefits of the country's oil wealth reach the poorest and most vulnerable households. The two types of spending are common in most countries. However, they exhibit distinctive features within the context of an oil economy. Resource-rich countries are prone to the crowding-out effect of natural resources on

human capital. Transfers of many forms are more generous and entrenched in oil-producing countries, magnifying their regressive (or progressive) distributional impact and often creating disincentive to work. The discussions will draw upon resource-rich country experiences and Guyana's local context.

Figure 5-1: Poverty Reduction Paths for Different Re-distributive Policies



Note: Simulation based on the baseline growth projection and household income elasticity to GDP of the bottom 40 percent and the top 60 percent of the income distribution. For each scenario, the overall elasticity is fixed at 1.06 – the estimate from 2006-2017. The household income elasticity to GDP of the bottom 40 percent is 0.59 for the status quo (2006-2017 estimate), 1.06 for equal, 2 for pro-poor A and 5 for pro-poor B.

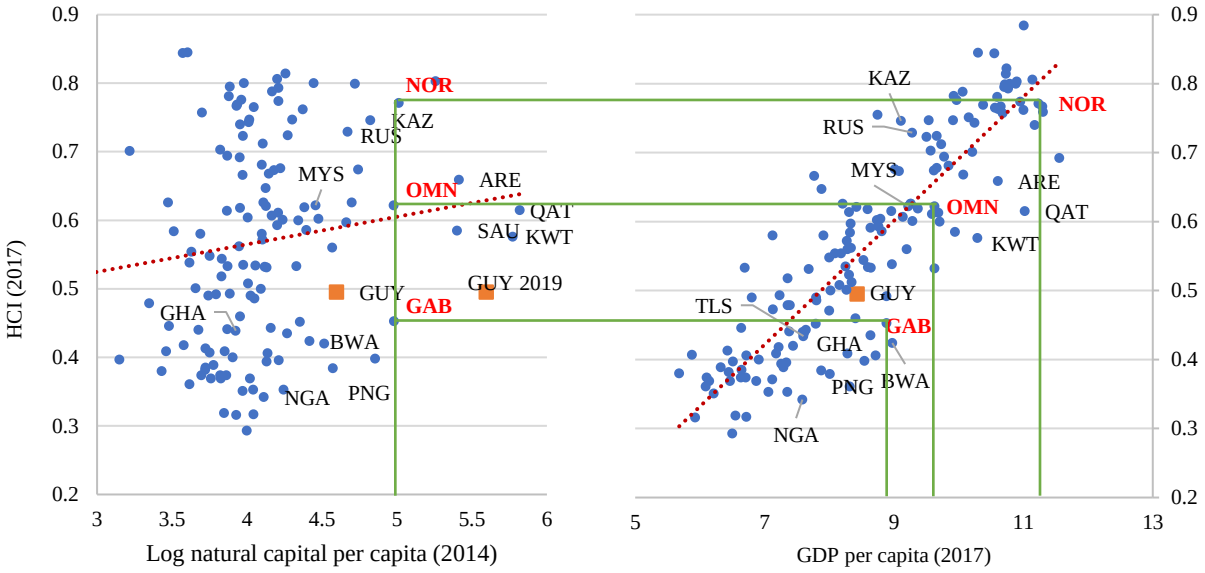
5.1 Human Capital Development

4. The equity and sustainability of an oil-driven economy hinges on the government's ability to transform depletable natural capital into broad-based gains in human capital. The development of human capital is vital to both economy-wide productivity and individual social mobility. Public spending on education and health services is a key channel through which oil wealth is redistributed and transformed into labor-force skills and capabilities. While human capital accumulation is strongly and consistently associated with rising living standards, a large stock of natural capital does not always imply better living standards—and in some cases the opposite pattern prevails (Figure 5-2). Successful resource-rich countries effectively transformed their natural capital into human capital, while a persistent failure to build human capital largely explains the ongoing challenges experienced by many resource-rich developing countries. For example, Norway, Gabon and Oman all have similar levels of natural capital per capita, yet Norway's per capita GDP is ten times larger than Gabon's and five times larger than Oman's. Increasing the amount of public spending on health and education alone will not necessarily lead to improvements in human capital: *public spending must be efficiently and equitably targeted on the key constraints to improving service quality and access*.

5. Guyana's low levels of human capital limits the oil sector's positive spillovers on the broader economy. Despite gains in public education and healthcare, Guyana's human capital indicators are below the averages for LAC and upper-middle-income countries worldwide (Figure 5-2). Guyana's score on the World Bank's Human Capital Index suggests that a child born in

Guyana today will reach just 49 percent of her productive potential had she enjoyed complete education and full health. While 97 percent of children in Guyana survive to age five, the growing burden of noncommunicable disease contributes to only 79 percent of 15-year-olds survive to age 60 (with only three-quarters of 15-year old boys reaching age 60). Premature sickness and mortality from chronic disease – much of which could be prevented through a strong primary health care program – impacts both household poverty and economic productivity.

Figure 5-2: Natural Capital, Human Capital and GDP per Capita



Source: World Development Indicators, World Bank

6. Gaps in human capital development start early. Malnutrition has lifelong implication for cognitive development and productivity: 12 percent of children under 5 suffer from chronic malnutrition (stunting), with rates twice as high in the interior. Early child development programs are essential for socio-emotional development and school readiness, particularly for low-income children, but significant gaps remain in both the coverage and quality of these programs (including supporting families to encourage early stimulation of young children, and preschool education for children aged 3-5). The latest 2014 MIC survey shows that while 61 percent of Guyanese children aged 3-5 attended early childhood education, the attendance rate was 49 percent in the interior.

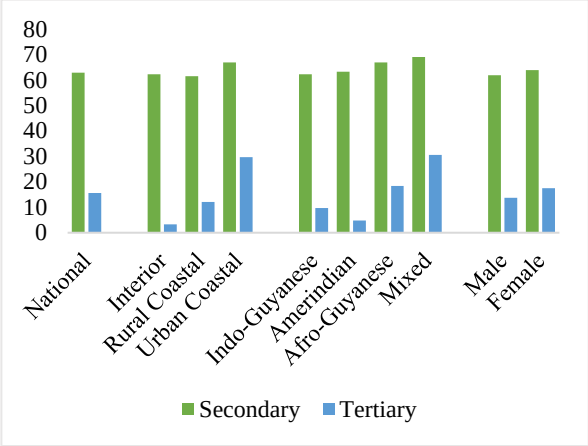
7. Low education quality contributes to poor learning outcomes. Many of Guyana's teachers lack relevant qualifications, skills, and training, especially in rural areas. In 2017, more than one-fourth of all Guyanese teachers were untrained, a figure that is nearly unchanged since 2013. A 2018 survey of classroom practices found that only 7 percent of sampled teachers met the government's standards for instructional practices.[86] Given the low quality of teaching, Guyana's education system performs poorly when judged by its own learning standards. In the 2018 National Grade 2 Assessment, only 6 percent of students achieved the national learning standards in English, and 9 percent in Mathematics. Consequently, while a child born in Guyana can expect to

[86] The practice was observed by Teach, the World Bank's open-source classroom observation instrument.

receive 12 years of schooling – comparable to the level of other upper-middle-income countries – what they learn is equivalent to only 6.7 years of schooling in top-performing education systems.

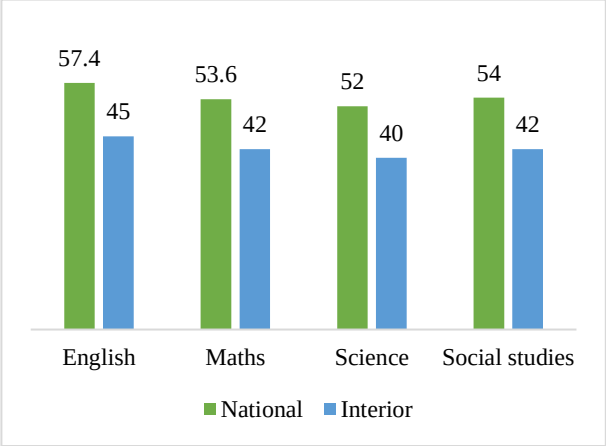
8. Higher education attainment is low, and is not well aligned with labor market needs, presenting a large skills gap between the oil industry and the Guyanese workforce. While Guyana performs well relative to the LAC region for years of education and secondary education attainment, attainment of tertiary education is very low relative to other countries. Part of the reason is low rate of return to education (6.2 percent compared to 9.1 percent, the global average, and LAC average of 9.4 percent). Moreover, mechanisms are not yet in place to ensure that the provision of tertiary education and training and vocation education (TVET) are aligned with the needs of private employers. Another reason is brain drain - Guyana has one of the highest emigration rates in the world, with a large portion of those with tertiary education choosing to migrate (Box 1-2). One in two tertiary-educated Guyanese migrated to the US.

Figure 5-3: School Enrollment by Socio-economic Group (2017)



Source: World Bank staff estimates from LFS 2017.

Figure 5-4: Percentage of Schools with Students Gaining Passes in Knowledge



Source: 2016-18 NGSE Results, MOE, Guyana

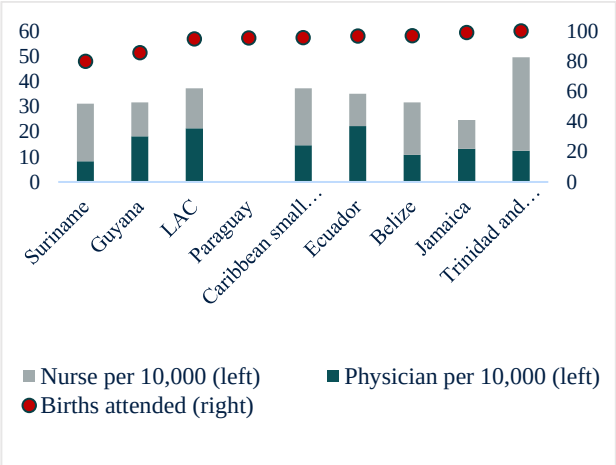
9. Disparities in access to and quality of public education across socio-economic groups will be the main challenge in promoting equitable wealth sharing. While secondary enrollment rates in the interior and coastal regions have converged (60%), they are lower for children from agricultural households, which also comprise larger proportion of Indo-Guyanese and Amerindian populations from rural areas. Children dropping out of school to perform farm or household work lack skills and are trapped in rural employment and traditional agriculture techniques. High transportation cost is the main barrier to school enrollment for children in remote and riverine areas.[87] Shortcomings in the quality of education undermine learning outcomes, especially in the rural areas (Figure 5-4). Most students pursuing higher education are Afro-Guyanese. The tertiary education enrollment is much lower among rural youth particularly those in the interior (Figure 5-3).

10. Inadequate access to quality healthcare, high out-of-pocket expenditure and low supply of qualified healthcare professionals together hold back Guyana's health outcomes.

[87] Guyana education at state schools is free and compulsory from age 5 years 7 months, through to age 16. Enrollment rate is at 95 percent at both primary and lower secondary education through to grade 9 (UNICEF, 2017)

Inadequate access to high-quality medical care has resulted in dismal health outcomes, particularly in the interior due to lack of road connectivity. Maternal mortality in Guyana is now 229 per 100,000 live births, one of the highest maternal mortality rates in the region and significantly higher than the LAC average of 67. Although 87 percent of women receive four or more antenatal care visits, maternal mortality rates have increased since 1995. Quality of healthcare suffers in part due to shortcomings of healthcare professionals, with only 31 physicians and nurses per 10,000 population (LAC average is 37, Figure 5-5), as well as inadequate systems for monitoring and improving healthcare quality. High out-of-pocket expenditures also create barriers to healthcare access. Out-of-pocket expenditures in Guyana stand above both the LAC average and its Caribbean peers at 40 percent of total health expenditure. The heavy dependence on out-of-pocket expenditure to fund health systems is concerning, as this particularly impacts the elderly and those with chronic illness and can push low-income households into poverty. The COVID-19 pandemic will expose a low level of pandemic preparedness and inadequate health care services in Guyana, reinforcing the urgency of strengthening the country's health care system. Guyana also faces a challenge with high rates of suicide (30.2 suicides per 100,000 population compared to the LAC average of 9.25), with Indo-Guyanese males accounting for most of the country's suicides which are concentrated in the rural coastal areas.[88]

Figure 5-5: Healthcare Human Resources



Source: World Development Indicator

Figure 5-6: Disparities in Health Outcomes by Region and Ethnicities

Source: MICS 2014

11. Poor access to and quality of health care, particularly in the interior, have an adverse impact on child health. Only 69 percent of children received full immunization coverage by age three (MICS 2014).[89] Vaccination coverage also varied by region, wealth and ethnicity. While 85 percent of children were fully vaccinated by age three in coastal regions, only 56 percent were in the interior. This under-vaccination contributes to the high rates of child mortality and stunting experienced by interior households. Stunting rates were higher in the interior (20 percent of children under age 5 were stunted in 2014 compared to the national rate of 12 percent) and the Amerindian population (25 percent). Child stunting is a consequence of multiple factors, including

[88] The National Suicide Prevention Plan 2015-2020.

[89] This follows a declining trend in full immunization coverage. According to the HEFPI data, full immunization among those 15-23 months old was 88 percent in 2000, 74 percent in 2006 and 64 percent in 2009.

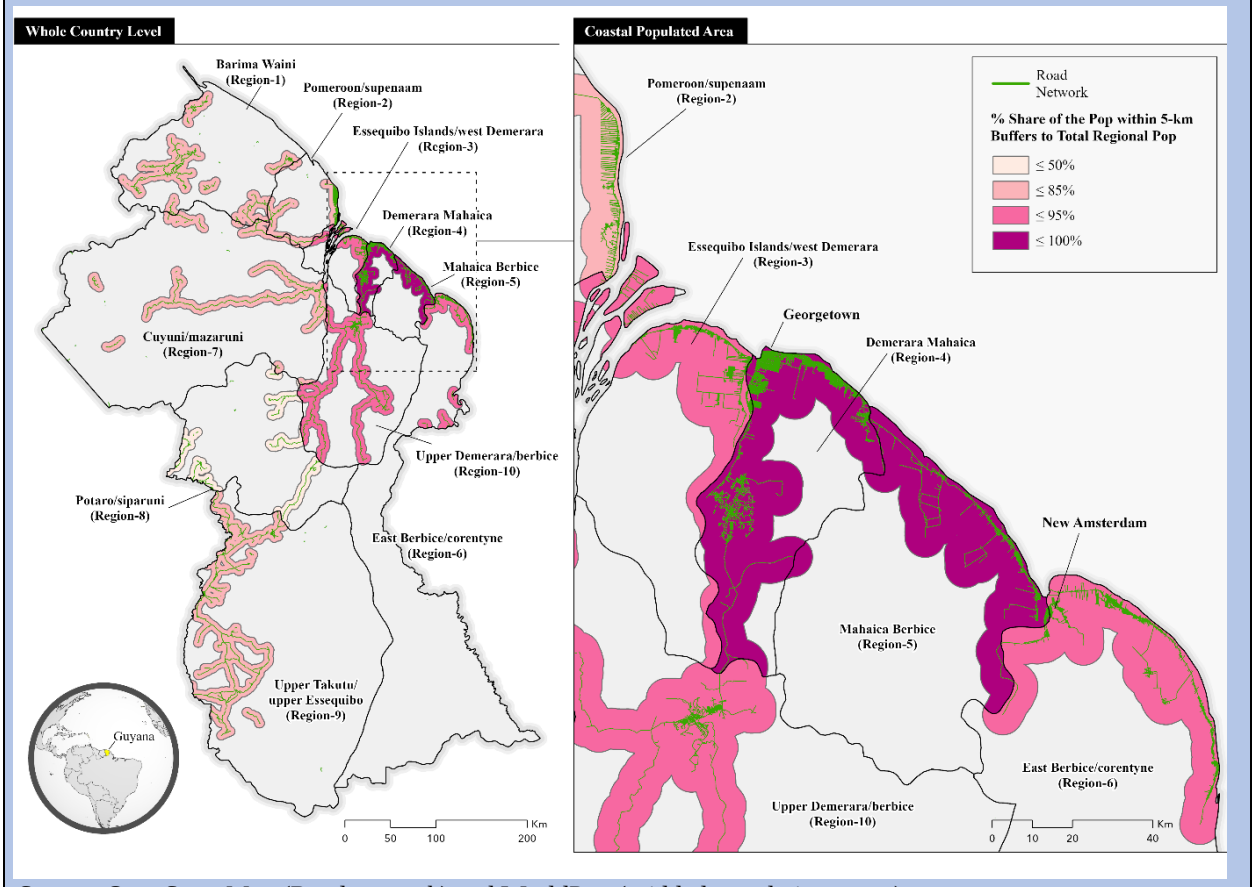
maternal health and nutrition; extent of exclusive breastfeeding; child feeding and weaning practices; household food security; and child illness and diarrhea, which in turn are influenced by access to water and sanitation. Rural population, especially in the interior, have limited access to these basic services. While access to improved drinking water is almost universal in the coastal regions (98 percent), only 71 percent of households in the interior have access to improved drinking water sources and 55 percent have access to both improved drinking water sources and improved sanitation.

12. With incoming oil revenue, Guyana will be able to scale up and improve its public service delivery for human capital development particularly at the bottom end of income distribution. Several oil-producing countries have opted for universal education and health coverage although the approach and the roll-out of the program vary across countries. While universal access to basic education is typical to oil-rich countries, several countries such as Norway, Trinidad and Tobago and some GCC countries provide free education up to the tertiary level. Universal healthcare coverage generally takes more time to roll out – beginning with expanding access to quality primary care, expanding risk protection, and gradually expanding the benefit package for tertiary care. Norway is the first country to achieve universal health coverage which was in 1912. Most high-income oil producing countries (Norway, Canada, Kuwait, Brunei, Bahrain, UAE and Qatar) provide universal healthcare coverage through a single-payer system in which the government is responsible for covering costs, while Australia adopted a two-tier system in which the government provides basic health care with secondary coverage available for those who can afford a higher standard of care.

Box 5.1: Connectivity and Delivery of Basic Services

Inadequate connectivity in Guyana is an impediment to inclusive delivery of public services. Connectivity is at the heart of public services. The transport infrastructure of Guyana consists of 98 km of railroads and 3,995 km of roads concentrated along the coastal areas. The country's road density, measured in terms of area (0.024), is far lower than the LAC average (0.462). Mobility of goods and people and delivery of public services are constrained by poor transport infrastructure. Access to market is limited by lack of infrastructure linking Guyana´s hinterland with its main existing port or the potential deep-water port in New Amsterdam. Building and maintaining this infrastructure has proven difficult and costly due to the sparse population and Guyana's exposure to natural hazards. The interior, poorly serviced by transport infrastructure, represents more than 90% of the country's landmass and is characterized by dense forests and mountains. While approximately 88 percent of the Guyanese population lives within 5 km from the main road, most rural populations, especially in the interior are disconnected especially in Region 8 (74 percent), Region 1,7 and 9 (around 40 percent). This contributes to marked disparities between the coastal and interior regions for public services delivery, market access and, consequently, poverty.

Figure 5-7: Percentage of the Population Residing within 5 km from the Main Road.



Source: OpenStreetMap (Road network) and WorldPop (gridded population count)

13. In order to achieve UHC, Guyana should focus on i) closing existing healthcare provision gaps between rural and urban areas and ii) strengthening public financial management, before the country can move towards the strategic purchasing of healthcare services. In particular, Guyana should stick to its integrated public health sector financing and delivery approach under which the Ministry of Health pays for and provides healthcare services, while strengthening the quality and coverage of those services. Establishing a separate purchasing agency outside the Ministry of Health to contract with public providers would require implementing complex contracting procedures. Given the low institutional capacity and the current financing of healthcare providers through line-item budgets, other intermediate measures should be taken first. Risk or equity-based adjustments to resource-allocations for health across different regions could be introduced. To overcome the remaining large disparities in the provision of healthcare between rural and urban areas, investments in the service delivery network in rural areas will be needed. Additional funds spent on UHC should not be added to the existing line-item budgets that fund payrolls and other inputs of providers but be linked to outputs (e.g. the services received by the population). This will also allow a transition toward purchasing of services from private as well as public providers, combined with strengthened oversight and regulation of the private sector by the Ministry of Health. To prepare public providers to respond to a new system of provider payments in the future -- and to move toward a "level playing field" with the private sector -- they should be gradually granted some more financial autonomy in using these funds, together with increased accountability for performance. The UHC programs implemented under

the Family Health Program (*Programa Saúde da Família*) from Brazil and the Costa Rican Social Security Fund (*Caja Costarricence de Seguridad Social*) provide successful examples from the region that did not rely on a purchaser-provider split.[90]

14. For Guyana, education reforms include closing the remaining gaps in access while committing to quality education for all and developing new labor market relevant TVET and higher education offerings (Table 5-1). In an era of increased budgetary resources, Guyana can achieve universal access to early childhood, primary, and secondary education. This would require a combination of investments in new and upgraded infrastructure, incentives to households, and delivery of high-quality specialized instruction to remote areas through ICT. While, access to schooling is necessary, it must be accompanied by an equal commitment to quality and learning, beginning with efforts to strengthen the quality of the teaching force at all levels. Guyana's new fiscal reality offers an unprecedented opportunity to rewrite the social contract with Guyana's teachers by transforming teaching into a more selective, remunerative and prestigious profession, with a stronger framework of performance-based career incentives. These investments in teachers need to be complemented with quality learning materials, including carefully chosen ICT interventions. Finally, the education system can prepare more Guyanese children for the jobs of the future through an expansion of TVET and tertiary education programs. This will require attention to considerations of fiscal cost, labor market demand for different types of skills (including improved coordination mechanisms with private employers), providing opportunity for historically underrepresented groups, and the preparation levels of the pipeline of students coming from the basic education system.

Table 5-1: Barriers and Options for Delivering Quality Healthcare and Education Services

	Barriers	Options
Education		
Coverage	Transportation costs[1] Housework and gender role[2] Mismatch with demand for skills[3]	Universal coverage of early-childhood, primary and secondary education through • School infrastructure • Distance delivery through ICT • Conditional cash transfers to provide incentive and overcome transportation cost Expanded access to tertiary education through • Tertiary education infrastructure • Curriculum aligned with labor market demand including from the oil and gas sector
Quality	Unqualified teachers[4]	• New social contract with teachers, with enhanced recruitment criteria and strengthened training • Strong system for monitoring and improving learning outcomes • Strong accreditation and quality systems for tertiary education and TVET • Introduction of performance-based financing
Healthcare		

[90] A purchaser–provider split (PPS) in the delivery of health care services refers to a service delivery model in which the functions of paying for and delivering health care services are separated.

Coverage	Low supply of healthcare professionals[5] Inadequate connectivity and healthcare centers in remoted areas[1] High out of pocket expenditures[6]	• Investment in healthcare facilities and human resources • Telemedicine intervention through ICT
Quality	Low salary and emigration of healthcare professionals[7] Inadequate monitoring and accountability for quality	• Strong systems for quality monitoring, improvement, and accreditation • Introduction of performance-based financing • Investment in academic medical centers

Note: 1. UNICEF (2017). 2. 43% of women outside the labor force cited housework/family responsibilities as the reason for not being in school nor the labor force (LFS 2017). 3. Guyana has low rate of return to education -- 6.2 % compared to the global average of 9.1 and the LAC average of 9.4 (WB staff estimates using LFS 2017). 4. More than one-fourth of all Guyanese teachers were untrained in academic year 2013-14. As a result, compared to peers the quality of learning is below par. 5. In 2014, there were 1.3 physicians per 1,000 population compared to the LAC average of 2.2. 6. Between 2010-2016, out-of-pocket expenditures in Guyana stood at 40% of total health expenditure, above the LAC average (37%) and the Caribbean (35%). 7. Bleeker and Deonandan (2016).

5.2 Social Protection and Cash Transfers

15. For resource-rich countries, a strong social protection system is needed to (i) facilitate an implementation of re-distributive policies and (ii) respond to the adverse effects of resource wealth. What stands between oil wealth and equitable benefit sharing is an asymmetry in the distribution of oil revenues and their economic impact. Massive oil revenues usually go directly from the oil company to the government without passing through the citizen. The priority for the government of oil-rich countries is then to distribute oil rent to its citizen. While the government can indirectly allocate rent through public investment or public spending on service delivery, the common and more direct channel used for allocating oil rent include different types of cash transfers, subsidies, low taxes and public sector employment (Segal, 2012). At the same time, oil revenues fuel domestic demand, benefiting citizens engaged in the non-tradable sector while hurting those engaged in the traditional tradable sector. Oil-producing countries, hence, also have distinctive needs for social protection to cover losses for the affected groups.

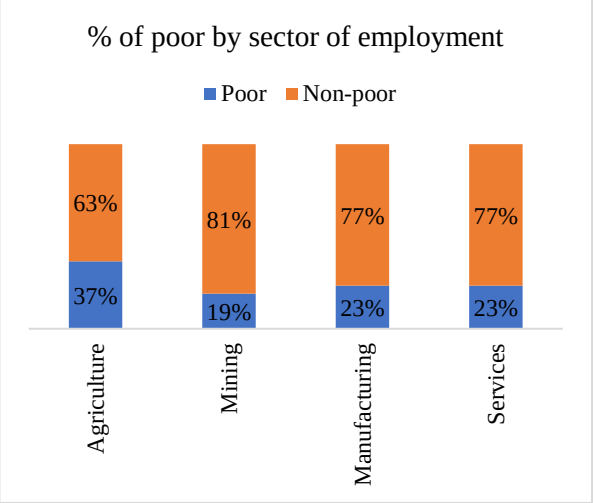
16. The distributional impact of Dutch disease would be unfavorable given Guyana's current labor-market composition. Much of the economic activity associated with the O&G sector, is in non-tradable services and the public sector, which is also concentrated in urban areas. Larger gains are expected for those employed in these growing sectors. Plus, the declining industry like agriculture employs a number of vulnerable population (poor, old and less educated, Figure 5-8), most of them residing in rural areas. As agricultural and manufacturing industries decline, the vulnerable group are likely to lose their employment opportunities. With their inability to cope with labor market shocks especially from a structural change, the adverse impact from Dutch disease on this group is expected to be large.

17. Several social protection and transfer mechanisms have been adopted by oil-producing countries. Each serves its particular purpose and requires different institutional arrangements. Although some are considered best practice, every mechanism entails risk of failure without good enough governance. This section identifies five most common mechanisms of social protections and cash transfers that are usually discussed in the oil economy context: **(**i) universal direct cash transfers; (ii) targeted transfers to poor and vulnerable groups; (iii) targeted transfers

to mitigate the adverse impact of oil boom; (iv) subsidies and taxes; and (v) public sector employment.

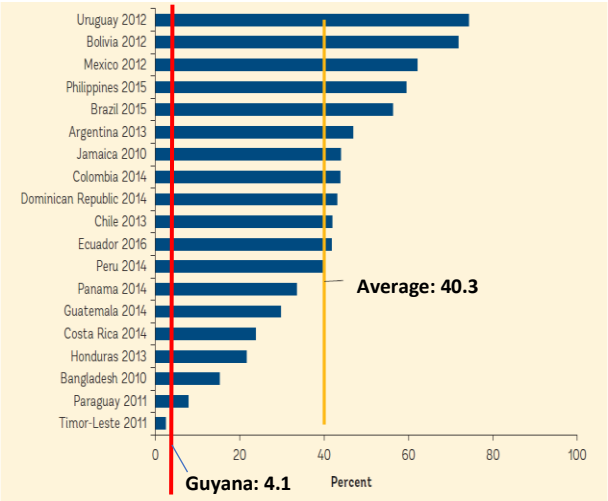
18. First, a universal direct cash transfer is intended to eliminate perverse incentives that can undermine public expenditure efficiency in oil-rich countries. Recent research on resource rents has proposed the rent distribution mechanism through direct cash transfers to all citizens. The mechanism is closely linked to the idea of a universal basic income or an unconditional cash transfer given to every citizen, regardless of their socioeconomic status. Proponents of this mechanism argue that oil revenue should be transferred directly to citizens and then taxed to finance public expenditures.[91] This approach is intended to reduce discretion in the use of revenues and mitigate a tendency of corruption and rent seeking. By compelling the government to obtain fiscal revenue from taxpaying citizens—rather than directly from oil companies—the system encourages public engagement in fiscal policy decisions.

Figure 5-8: Characteristics of Employed Persons



Source: World Bank staff estimates from the Labour Force Survey 2017.

Figure 5-9: Share of the Poorest Quintile that Receives Conditional Cash Transfer



Sources: World Bank State of Social Safety Nets, 2018; Guyana Labour Force Survey 2017

19. Central to a success of this model is a strong institutional framework and a relatively small size of the cash transfer. There is variation in the size of universal direct cash transfers. The extreme option is for the government to distribute the total flow of oil revenue to the citizens and then tax to finance public expenditures. This option has not been adopted by any oil-producing countries although it was proposed for Nigeria. The only instance of this mechanism is the Alaskan model where a small portion of oil revenue is distributed to Alaskan citizen. The Alaska Permanent Fund distributes income earned from an investment of oil revenue, which between 1982-2009 was equal to 3-6 percent of per capita income.[92] Contributing to a success of this model is strong institutional arrangement for asset management, spending decision and oversight. The dividend distribution is included in Alaska's budget process. The small amount of transfers also circumvents

[91] Sala-i-Martin and Subramanian (2013), Gillies (2010), Devarajan, Ehrhart, Le and Raballan (2011), and Rodriguez, Morales, and Monaldi (2012)

[92] Gupta, Segura-Ubiergo and Flores (2014).

the main caveats of this approach as a large sum of cash transfers can undermine incentive to work, hinder the provision of public services and cause a sharp rise in money supply and inflation.[93]

20. Second, targeted cash transfers to poor and vulnerable groups – conditional (CCT) or unconditional (UCT) - have been used as a tool to reduce poverty and inequality. Cash transfer programs have been widely implemented across developing countries, and many have proved to effectively reduce poverty. Among the most successful case is Bolsa Familia in Brazil which applies broad-based and tightly controlled transfer mechanisms. It is a conditional cash transfer program focusing on health and education. Therefore, the impact goes beyond poverty reduction and cover human capital development. Conditional transfers can have a higher impact on utilization of key services compared to non-conditional transfers – provided that the supply of these services is adequate – but are also more administratively complex. "Soft conditionality" combined with outreach programs can also lead to increased uptake of health, education, or employment services by poor households.

21. Nevertheless, poor targeting and lack of appropriate institutional arrangement can lead to program failure and increase social pressures. Venezuela's Misiónes, social programs that include subsidized food and free health care and education, offer a cautionary tale. The programs were generally poorly designed, with little focus on targeting, quality and outcomes. Unlike Bolsa Familia, Misiónes are financed directly by oil revenues outside the budget process. Therefore, they lack oversight and have been implemented with political discretion. The programs eventually became politicized, leading to a failure of redistributive economic policies.

22. Third, improvement and redesign of social programs are required to mitigate the adverse impact of oil boom. Plagued with the Dutch disease, job reallocation from the declining tradable sector to the expanding non-tradable sector will be unavoidable. The skill gap can be narrow (e.g. a reallocation from cultivating rice to growing fruits) or wide (e.g. a reallocation from cultivating rice to providing services). Targeted social protection programs such as unemployment insurance and skill training can potentially speed the reallocation, and buffer household consumption from income shocks. This is to avoid long-term consequence of job loss and reduce social pressure for a fair distribution of oil wealth. Particularly for Guyana, where the declining industries including agriculture employ a large share of vulnerable population (poor, old and less educated), social assistance programs such as old-age pensions and cash transfers will be the tool for cushioning this group from a negative impact of Dutch disease.

23. Fourth, subsidies (in most cases energy) and lower taxes are a common tool employed by oil-producing countries to distribute natural resource endowment directly to the citizens. Although there is a widespread use of energy subsidies both in developed and developing countries to help reduce household living expenses, the subsidies tend to be more generous and entrenched in oil-producing countries. Politically, in oil-producing countries low energy prices are an element of a social contract that the government extracts and distributes natural resource endowment directly to citizens. According to International Energy Agency (IEA), the GCC countries are among the largest subsidizers of energy in the world, led by Kuwait, Saudi Arabia, and Qatar. Each of these three countries charges their populations less than a third of international prices for fuel and electricity. Substituting oil revenue for taxation is another way to distribute rent. Empirical

[93] Jones and Marinescu (2018).

study found that on average countries reduce the collection of non-resource revenues by 0.2 percentage points of GDP for every 1 percentage point of GDP they receive in resource revenues (Bornhorst, Gupta & Thornton, 2008). Among oil-producing countries, Bahrain, Brunei, Kuwait, Qatar and UAE impose no income tax.

24. Despite serving their purpose in alleviating the inflationary pressure from massive oil revenue, untargeted energy subsidies are generally regressive, create price distortion and overuse of natural resources. A recent IMF study of fossil fuel subsidies globally shows that the wealthiest 20 percent of the population gets a disproportionate 43 percent of the benefit from fossil fuel subsidies, while the poorest 20 percent gets only 7 percent.[94] In Venezuela, the richest 25 percent received US$3,318 in gasoline subsidies while the poorest 25 percent only received US$479 in 2010.[95] Recently, following the period of persistently low oil prices, many oil-producing GCC countries have undergone energy subsidy reform. The reforms aim at phasing out universal energy subsidies, and in some countries replacing them with other forms of rent distribution such as cash transfers (Iran and Saudi Arabia).[96] Eliminating taxes can either be progressive or regressive. Tax elimination would feature a more regressive distribution, if the existing tax system is more progressive. The more progressive the existing tax system is, the more regressive the benefits of tax cuts.

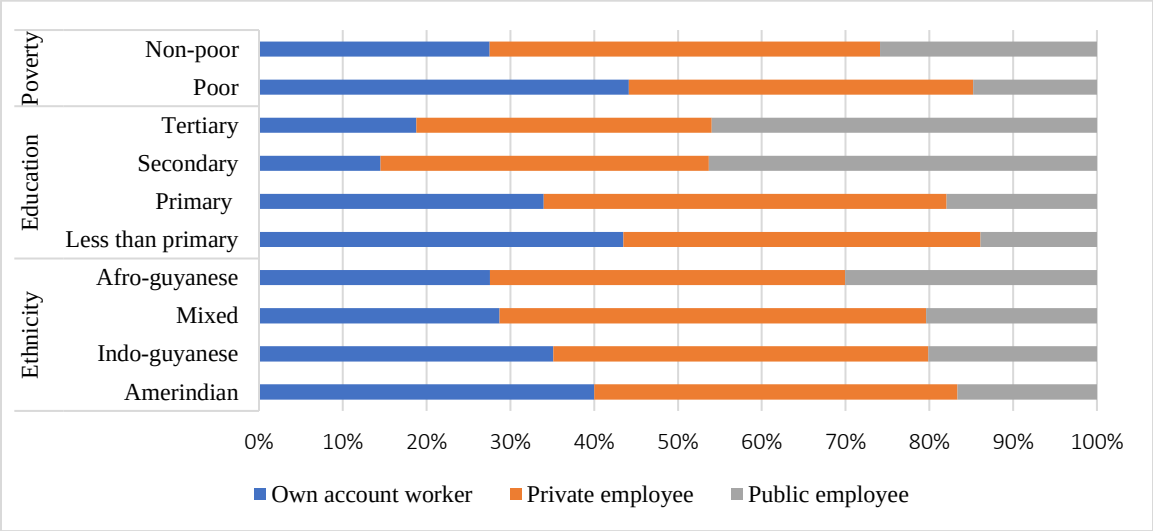
25. Lastly, public sector employment is another wealth distribution channel adopted by some oil-producing countries, and this instrument is in general regressive. In a country with high natural resource per capita, the government has higher tendency to expand public sector employment.[97] There is potential for this being the case for Guyana. Public sector employment accounts for 60 percent of the total employment of nationals in the GCC and 70 percent of total employment in Timor-Leste, compared to the developing country average of 9 percent. Currently, public sector employment constitutes 9 percent of total employment in Guyana. This number is likely to expand once the government starts receiving oil revenue. While this instrument helps boosting the number of jobs as well as expanding the public sector capacity to manage oil wealth and improve service delivery, it disproportionately benefits public employees at the expense of the private sector. The regressivity is expected to be large in Guyana where public sector employment is concentrated in urban areas within certain socioeconomic and ethnic groups (Figure 5-10).

26. In order to achieve fair distribution of oil wealth and realize its poverty reduction potential, there are two key factors that the country should consider when making spending decisions: i) progressivity of spending and ii) institutional capacity. Figure 5-1 shows that if the government maintains the current progressivity level of its redistributive policies, the impact of oil revenue on poverty reduction will be limited. Under that scenario, the poverty rate is projected to be slightly below 30 percent in 2030. If, however, the government pursues more progressive or pro-poor redistributive policies, Guyana can achieve the single digit poverty rate by 2030. A policy is progressive or pro-poor if it reduces income gaps between the top and bottom of the distribution. On the one hand, energy subsidies, elimination of income tax and expansion of

[94] Coady and Granado (2010).
[95] Grisanti (2011).
[96] The Iranian program started in 2011 as a relatively large cash transfer (29 percent of median family income) to soften the impact of reducing costly energy subsidies, but subsequent inflation quickly eroded its real effect (Salehi-Isfahani, 2016).
[97] Ali and Elbadawi (2012)

public sector employment are expected to be regressive. On the other hand, universal education and healthcare and cash transfers will disproportionately benefit the bottom of the income distribution, exhibiting progressivity. Nevertheless, lack of institutional capacity can turn a well-designed progressive policy into an even more regressive system when subject to rent seeking and efficiency loss. For Guyana, inadequate institutional capacity implies that some first best spending options, drawn from cross-country experiences, might not be viable initially. Under this condition, decision-making by policymakers involves choosing the most progressive (or the least regressive) policies among the second-best options when considering the risks of rent seeking and inefficiency.

Figure 5-10: Occupation by Socioeconomic Characteristics of Employed Person



Source: World Bank staff estimates from the Labour Force Survey 2017.

27. Guyana will need to develop an inclusive and sustainable social protection system that is above politicization. Guyana's current systems are inadequate and poorly targeted mainly due to a rudimentary social safety net system and lack of supporting data system. The main social assistance programs in Guyana are public assistance and universal old-age pensions.[98] The safety net is largely focused on the universal social pension to the elderly which has broader coverage compared to public assistance, despite higher child poverty and higher share of children and working age among the poor. While the benefits have increased in the past few years, the impact on poverty is limited since the number of beneficiaries was low (around 7,500 to 10,000 between 2013-17). Moreover, the selection of beneficiaries has not been effectively targeted with over 20 percent of public assistance recipients being from the top quintile of the income distribution (Figure 5-9). As one of the main tools for redistributive policies, the social protection system needs to be improved in several areas including coverage, payment and targeting accuracy aligning the safety net more appropriately to demographic poverty risks. Financing of social programs must be included in the budget process and fiscal design to ensure sustainability and avoid politicization.

[98] Subsidies on water and electricity as well as education were removed in 2015 (Social Security Programs Throughout the World: The Americas 2017).

5.3 Conclusion

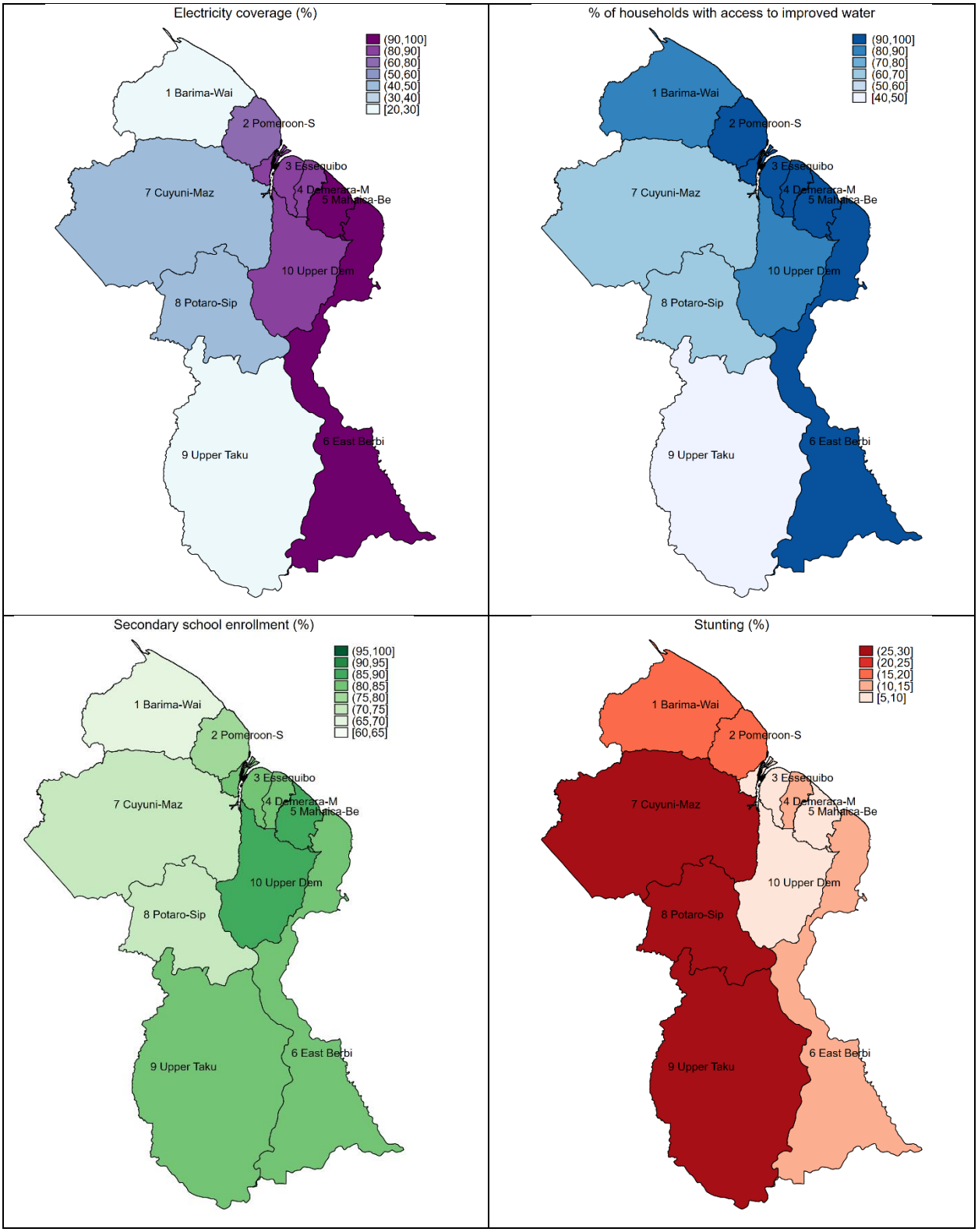
28. This chapter argues that successfully converting depletable natural capital into broad-based gains in human capital will be critical to achieve inclusive and sustainable growth in Guyana. It highlights three policy priorities:

a) **A spatial package for achieving full coverage of basic services and infrastructure.** The first and foremost intervention is to bridge basic service and infrastructure gaps across regions in Guyana. Spatial disparities are entrenched in Guyana partly due to a sparse population distribution in the interior, resulting in the low rate of return to infrastructure investment and difficulties in delivering basic service delivery. Oil revenue would help relax these constraints. Basic services and infrastructure that are deemed important include improved water sources, improved sanitation, road, electricity, basic education (primary and secondary), basic health care services, ICT and banking. Spending should be prioritized to areas that need major improvement (e.g. electricity in Region 1 and 9 and access to improved drinking water in Region 9, Figure 5-11). Innovative uses of information technologies can also help improve service access in remote areas.

b) **A comprehensive social protection system.** The social protection system needs major reforms by broadening the programs, increasing the coverage of children, youth and working age, establishing the payment and targeting system and improving social registry. CCT can be used to improve maternal and child health and to overcome gender roles and high transportation costs which are the barrier to education attainment. The government needs to ensure that basic services and infrastructure are available to the targeted population when employing CCT. Financing of social programs must be included in the budget process and fiscal design to ensure sustainability and avoid politicization.

c) **Progress toward universal health coverage and market-responsive education system.** While urgency lies in achieving the full coverage of basic services and infrastructure, the vision of a high-income country with inclusive and cohesive society requires a step further. In the medium term, Guyana should aim to achieve universal health coverage (UHC) that provides quality medical services to all Guyanese citizens; also critical in context of the current pandemic. Strong accreditation and quality systems for tertiary education and TVET are required to support productivity-led economic transformation while creating labor markets that are inclusive.

Figure 5-11 Spatial Disparities in Basic Infrastructure, Education and Health, by Administrative Region



Source: MICS 2014

6. Chapter 6: A Path to Sustainable and Inclusive Development

…Alenna and her family will be affected by how the government spends its oil revenues, and even more so by other government decisions. Her village is close to the border, and migrants passing through noted that oil revenues can cause more problems than solutions. They said that oil revenues could lead to violence and civil strife. Alenna is apprehensive and fearful after hearing these stories. She values peace more than material riches, but she also wants to go to school, learn, grow and maybe become a doctor. Will the policy makers in Georgetown be able to manage the challenges and make it happen?

1. Guyana's newfound oil wealth creates opportunities but also poses significant challenges. Its own history reflects the loss of opportunities generated by commodities and natural resources (sugar, rice, bauxite, gold). The rise of the oil sector will affect multiple layers of the economy, with complex implications for present and future generations, the environment, and communities across the country. While the anticipated influx of oil revenues has the potential to boost sustainable economic growth, accelerate poverty reduction, and support shared prosperity, a failure to properly manage the oil sector could have deeply negative social and economic consequences. In addition to the considerable fiscal and macroeconomic challenges generated by the oil sector, environmental and social risks will require close monitoring, strong oversight mechanisms, and substantial investment in damage prevention and response capacity. All these challenges get further reinforced by the current COVID-19 crisis and the anticipated global economic downturn. Despite, the containment measures including travel restrictions and social distancing the number of confirmed cases in Guyana has been rising and the adverse impact of the pandemic is being felt by several socio-economic groups.

2. In addition to numerous cautionary examples, the international experience showcases many encouraging success stories, as a range of both developing and industrialized countries have effectively leveraged their resource wealth to achieve sustainable, broad-based growth. Based on experiences in resource-rich countries such as Australia, Botswana, Canada, Chile, several Gulf countries, Norway, and the United States, positive impacts on overall poverty levels are achievable while mitigating risks, with sound macro-fiscal policies, good governance and institutions, public investments including in skills and technological capacities, as well as efficient and transparent revenue collection and management. These countries triggered growth as resource-based economies, but ultimately achieved growth, economic diversification and poverty reduction through targeted interventions.

3. The oil sector presents Guyana with an unprecedented opportunity to advance its development objectives and reach the 2030 vision as a high-income country on an inclusive and sustainable development trajectory. The oil revenues are projected to boost Guyana's nonoil GDP to over US$10 billion by 2030, with the oil sector contributing another US$3.6 billion to total GDP. Assuming, that the population growth rate remains on its current trajectory, per capita income would reach US$16,900 by 2030, close to the high-income threshold. [99] However, high-income status is not meaningful unless it reflects widespread improvements in income levels,

[99] GDP projections are in nominal terms, and the criteria for high-income status may change if real terms are used.

healthcare and living standards, or if it is based on an unsustainable economic and environmental model.

4. By drawing on lessons from the experience of other resource-rich countries, as well as Guyana's own history with extractive industries, policymakers can identify and address key risks to equitable and sustainable growth. The analysis presented in this SCD reveals four priority areas for policy action. These include:

- **Macroeconomic-related constraints:** An influx of oil revenue can cause macroeconomic distortions by changing relative prices, putting upward pressure on the exchange rate, and driving a surge in demand for imports and non-tradable goods and services. Meanwhile, rising revenues will pose risks to fiscal policy and macroeconomic management, as policymakers may face pressure to increase public spending to unsustainable levels or to boost public investment to levels beyond the implementation capacity of the public sector or the absorptive capacity of the economy. Urbanization will exacerbate Guyana's social and environmental challenges, and the rise of the oil sector will likely disrupt traditional livelihoods, while increased economic activity will intensify pressure on forests, rivers, and oceanic ecosystems. To mitigate long-term macroeconomic risks, the government must devise and implement strategies to ensure that the exploitation of Guyana's oil reserves delivers sustainable growth underpinned by adequate environmental protections, with returns shared equitably across regions, communities, and generations.
- **Governance-related constraints:** Good governance, a well-managed civil service, and strong public institutions are critical to achieve positive development outcomes, especially in resource-rich countries. However, resource revenues often have a corrosive influence on institutional quality, and the rise of Guyana's oil sector poses a serious risk to good governance. Guyana's public institutions are weak and justice system has inefficiencies. This creates opportunities for crime and corruption, and a lack of trust in the public administration lowers expectations for service quality and weakens demands for transparency and accountability. A weak regulatory climate marked by state intervention in the economy further limits private-sector development and undermines competition. Oil revenues will increase the pressure on government to be transparent, accountable and deliver results. The authorities must engage the citizens in a process of policy dialogue, participatory oversight, and ongoing consensus-building.
- **Employment-related constraints:** Guyana's economic base is undiversified, with the underdeveloped private sector, poor infrastructure, and low levels of competition, which have hindered the country's structural transformation. The oil sector will create a small number of direct jobs and only a modest number of indirect jobs, most of which will require specialized skills and specific competencies. International experience shows that rising oil exports could undermine job creation by weakening the competitiveness of existing tradable sectors. While oil revenues could finance expanded public employment, widening wage gaps could distort incentives and reduce productive efficiency. Subsidies and transfers could expand the distribution of benefits from the oil sector, but such policies are vulnerable to misuse and may diminish incentives to work. To mitigate the adverse effect of oil exports on domestic employment, the government must invest in transportation, communications, and logistics infrastructure, which will offset competitiveness losses by lowering production costs while also supporting diversification in the nonoil economy. Immigration policies and efforts to encourage the return of Guyanese diaspora members

must be carefully calibrated to meet the private sector's demand for labor without exacerbating the disruption of the labor market.

- **Human capital-related constraints:** Guyana already suffers the resource curse effect of the crowding-out effect of natural resources on human capital. Human capital indicators are low by the standards of comparable countries, especially in basic health indicators such as child mortality and maternal mortality. Disparities in human capital development is entrenched, preventing the ability of the poor and those with a low human capital endowment to benefit from growth. The small private sector is unable to absorb highly educated workers resulting in emigration and brain drain.

5. Recognizing complex tradeoffs facing Guyanese policymakers, the SCD identifies principles to address these and help prioritize interventions needed to achieve equitable and sustainable growth. On the one hand, given the significant oil revenues it is important to develop the vision for Guyana as a well-managed oil economy, with a well-designed SWF in compliance with international principles. On the other hand, given the high poverty rates and gaps in provision of basic needs, the SCD formulates a basic needs spatial package, to ensure that the oil resources are inclusive, transformative with 'no one left behind' (Table 6-1) including through use of innovative disruptive technologies (Box 6-1). This is even more relevant with the outbreak of COVID-19. Even though Guyana has followed containment measures, infections have been rising (with 4,524 infections and 135 fatalities as at mid-November 2020). Areas for government intervention and key policy areas are summarized below (Figure 6-1) and detailed in the following sections.

Box 6-1 Fast Forward with Technology

Guyana's vision is to be a high-income country by 2030, with strong human capital indicators, modest poverty levels, and sustainable macroeconomic balances. Given the significant revenues from oil, Guyana's nonoil GDP is projected to reach US$10.4 billion and at that time oil GDP is projected to be US$3.6 billion. If the population grows at current trajectory, per capita GDP could be some US$16,900 with corresponding declines in poverty. It is envisaged that the development vision is for an inclusive and prosperous country that provides good quality of life for citizens with economic opportunities, sound education, justice and social protection, along with a low-carbon resilient development. This vision requires an open economy in which specialized private companies compete on international markets and create high quality jobs.

Development of efficient specialized firms requires a modern business environment, allowing existing firms the opportunity to adjust. Entry of new firms - both nationally and foreign owned – may provide access to new technologies and innovation. The oil wealth has boosted investor appetite. In addition, the authorities are engaging the skills, expertise and resources of the diaspora that can contribute to the country's development.[100] The aim to channel into sectors and activities that provide Guyana comparative and competitive advantage.

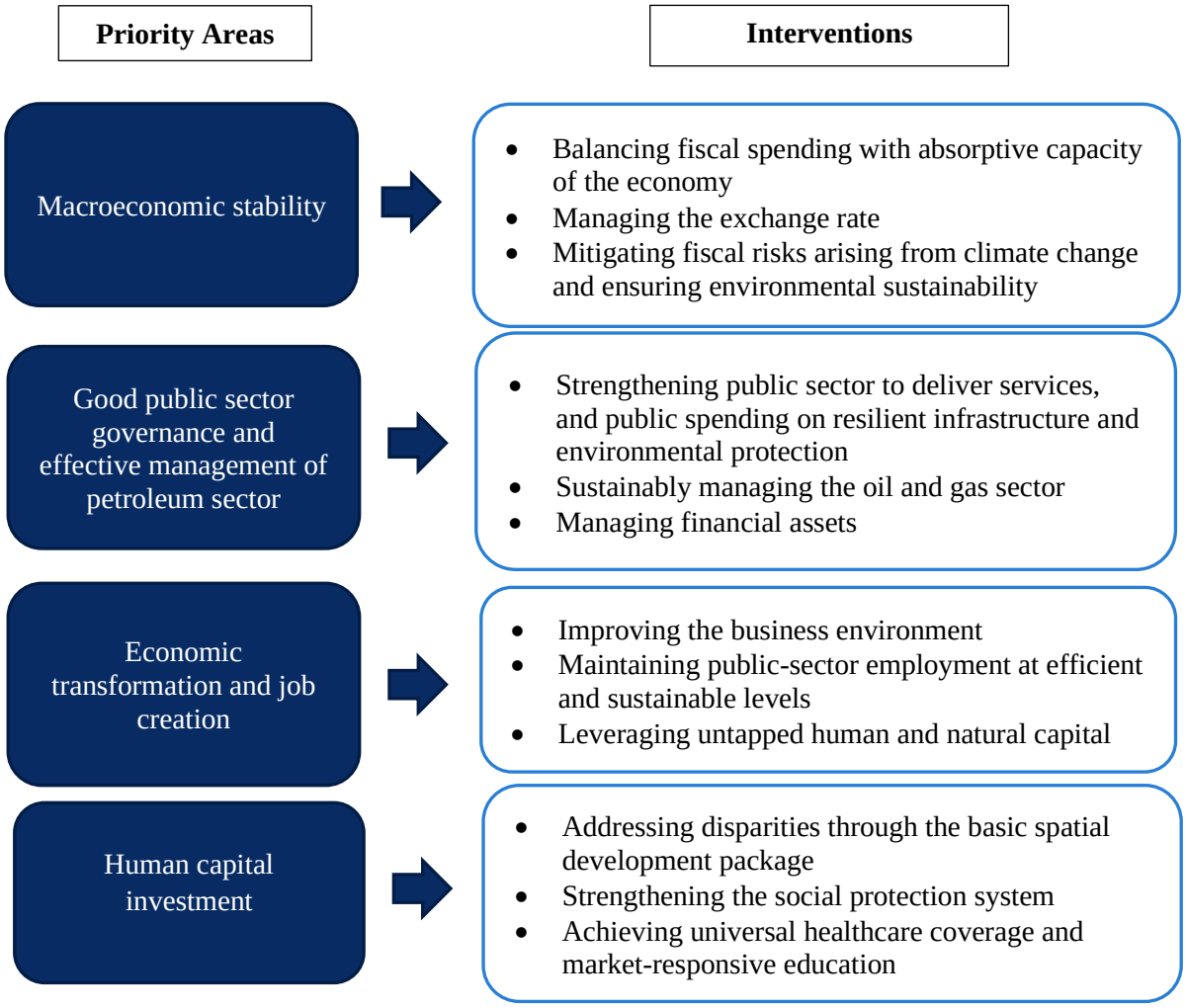
The planned digital transformation supported by the financial sector can facilitate private sector diversification and sustainable growth. Access to cross cutting and disruptive technology and international markets allow the private sector to skip traditional modes and business models that other countries used as stepping-stones. For example:

- Banking - using mobile phones rather than traditional 'brick and mortar' bank branches.
- Health and education- using technology to overcome challenges of connectivity and access to interiors.
- Agriculture- use of biotechnology together with space satellites, drones and farm robotics to improve productivity and mitigate weather-related impacts; access to markets (link with agricultural markets and cooperatives)

[100] Guyana Ministry of Foreign Affairs, Diaspora unit "https://www.minfor.gov.gy/diaspora-unit/"

- Electricity -harness renewable sources (from solar, wind and hydrogen to minimize carbon footprint)

Figure 6-1: Priority Areas and Policy Interventions



Priority Area I

6. The international experience with newly oil-rich countries highlights the importance of fiscal restraint and respect for the limits of both the expenditure capacity of the public sector and the absorptive capacity of the economy. Overcoming economic policy constraints requires pursuit of three macroeconomic principles:

- *Fiscal expenditures should remain consistent with the absorptive capacity of the economy, as estimated by potential GDP, and with the government's institutional capacity to manage public spending.* The analysis presented in this SCD estimates that the Guyanese economy can absorb a nominal fiscal expansion of about 9-10 percent each year starting in 2021, but a larger expansion can be absorbed if it does not contribute to domestic demand (such estimates need to be revisited periodically with updated data). Such an expansion would increase public spending from 33 percent of nonoil GDP in 2019 to 37 percent in 2030. Because the absorptive capacity of the economy evolves over time and is influenced by the composition of public spending, it should be reassessed regularly as part of the budget process. Boosting output

beyond potential GDP will contribute to inflation and reduce the competitiveness of nonoil exports. In addition, there should be a limit on public debt and debt-equivalent liabilities, specified at around 60 percent of nonoil GDP. Oil is an exhaustible resource and hence liabilities should be considered as a share of nonoil GDP. Liabilities in excess of 60 percent of nonoil GDP raise the risk of debt distress if oil is exhausted and/or with decline in international oil price (as experienced by Ghana);

- *Maintain a competitive real effective exchange rate.* As private capital inflows are projected to become more volatile Guyana needs to develop instruments to insulate the competitiveness of nonoil exports through the sterilization of capital inflows. This requires developing a well-functioning capital market and debt instruments for sterilization of capital inflows. Further, a shift from direct to indirect taxes while cushioning the impact on poor and low-income households could boost the competitiveness of nonoil exports. Such a shift may be desirable but only after a system to implement transfers that reach the poor is operational;
- *Guyana should establish institutions and processes to sustainably manage its natural resources and mitigate the risks posed by environmental disasters.* Public investment should prioritize resilient infrastructure, including dikes and seawalls, and urban-planning policies should follow international best practices. Robust environmental institutions will be necessary to protect the country's natural capital and ensure sustainable management and use of natural resources. Disaster-response mechanisms must be capable of coping with potential oil spills and flooding, as well as other endemic risks. Addressing environmental challenges will require innovative approaches to civil-service management, the contracting of private firms, and the formulation of a national master plan for public investment.

Priority Area II

7. Good governance and strong public institutions will play a pivotal role in ensuring the equitable and sustainable management of oil revenues. Without adequate safeguards, the misuse of oil revenues could exacerbate Guyana's development challenges and expose it to the host of adverse socioeconomic effects collectively known as the "resource curse." Risks to social cohesion are especially salient in Guyana, underscoring the importance of good governance and institutional quality.

8. Strengthening public sector to ensure the full potential of public service delivery. Strengthening the public sector involves modernizing the civil service and public financial management systems. In addition, oversight of private services contracting can complement these measures by helping to prevent inefficiency and curb opportunities for corruption and rent-seeking across the public sector. This will also include the appraisal, selection, execution and maintenance functions of the public investment system**.**

9. Participatory processes can be used to rebuild trust in public institutions. Broad-based outreach efforts could encourage greater public engagement in the budget process, strengthen public ownership over expenditure decisions, and reinforce confidence in the government's management of oil revenues. However, Guyana's worsening public security situation and high levels of perceived corruption threaten the legitimacy of the public sector. It is also important to take proactive steps to control crime and eliminate corruption.

10. Modernizing the oil sector's legal and institutional framework will help prioritize transparency and accountability. A well-managed petroleum sector will allow Guyana to balance the risks and opportunities, and benefit from the positive externalities. Efforts to modernize the oil sector's legal and institutional framework should promote transparency and accountability, encourage greater public engagement, and foster more effective interagency collaboration

11. The SWF should be implemented effectively through a social compact with bipartisan support and broad stakeholder agreement. A strong national consensus on the goals and operations of the SWF will be vital to ensure transparent and professional management of foreign assets. Prudent management of fiscal oil revenues and foreign assets accumulated in the SWF will require specialized skills provided by international experts. However, the international experience shows that appropriate and transparent oversight by the national authorities is also crucial.

Priority Area III

12. Economic diversification will be vital to enable an inclusive and sustainable economic transformation in Guyana. Without sufficient efforts to promote economic transformation, the gravitational pull of the oil wealth will put Guyana at risk of becoming a rentier state that is overly dependent on oil, posing risks to inclusion and sustainability. Policies to promote diversification and strengthen the private sector must address three key areas:

- **Improving the business environment through regulatory reform and infrastructure investment.** To offset the anticipated decline in international competitiveness due to Dutch Disease, the cost of doing business must be significantly reduced. Investments in electricity and transportation infrastructure can lower production and logistics costs, which are the chief obstacles to the ability of Guyanese firms to compete in global markets. Complementary investments in ICT infrastructure would expand market access, enhance productivity, and stimulate innovation. The regulatory and legal frameworks for clearing customs, obtaining permits, and resolving insolvency all require major improvements.
- **Containing the growth of public-sector employment.** While the size of the public sector should expand to improve service delivery, and wage rates should be competitive with the private sector, public employment and wage policies should not excessively distort labor-market incentives. While public-sector employment can be used to distribute oil wealth, as seen in other resource-rich countries, highly paid public employment crowds out job growth and investment in the private sector by setting high reservation wages and competing for scarce human resources. Distortions in relative wages can also lower overall economic productivity by encouraging the reallocation of physical and human capital from the private to the public sector. These dynamics can undermine private-sector competitiveness and inhibit economic diversification.
- **Leveraging untapped human and natural capital.** Developing high-value-added sectors in which Guyana has a comparative advantage based on its natural resources could facilitate an inclusive economic transformation while limiting the disruptive effects of skills shortages. Labor policies should be updated and strengthened to facilitate the reallocation of labor across industries and from rural to urban areas. The government should review its employment-protection legislation, active labor-market policies, and policies to promote gender equality in

the labor market, among others. Strong accreditation and quality-control systems for tertiary education and technical training will help support a productivity-driven economic transformation and foster inclusive labor markets. Comprehensive immigration reforms are urgently needed to manage rising immigration levels and access the human capital of the large Guyanese diaspora, thereby reducing the risk of a mismatch between labor supply and demand during Guyana's economic transformation. Most importantly, intergenerational equity requires sustainable management of these natural resources so that future generations can benefit from them.

Table 6-1: Spatial Disparities and Instrumental Objectives for Achieving 2030 Development Goals

		Distance to the 2030 development goals*			
	Vision 2030	**National**	**Administrative region**		**Priority**
1. Improved water sources	100%	6%	Interior:	29%	Invest in infrastructure to improve household access to proper sanitation, availability of clean water in interior
			Region 7,8:	35%	
			Region 9:	58%	
2. Improved sanitation	100%	5%	Interior:	14%	Invest in infrastructure to improve household access to proper sanitation
			Region 7,8:	40%	
3. Healthcare	Stunting: 0%	12%	Interior:	20%	Invest in healthcare infrastructure and human resources as well as telemedicine in rural areas.
			Region 7,8,9:	27%	
	Vaccination of children 100%	22%	Interior:	44%	
			Region 1,9:	55-59%	
4. Primary school	Attendance 100%	3%	Region 1,2:	4.5%	Provide conditional cash transfers to incentivize education, cover transportation costs, and keep children in school especially in Regions 1,2
	Dropout 0%	4%	Region 1,2:	13-18%	
5. Secondary school	Attendance 100%	15%	Interior:	22%	Provide secondary education in Regions 1,7,8
			Region 2,7,8:	23-25%	
			Region 1:	35%	
6. Road	100% of populations	12%[1]	Region 9	38%	Invest in road infrastructure connecting to the interior
			Region 7	45%	
			Region 1	47%	
			Region 8	74%	
7. Electricity	100% of the population	13 %	Interior:	44%	Invest in infrastructure to improve access to electricity in the interior
			Region 1,9:	75%	
8. ICT	Penetration and coverage 100%	Fixed broadband 66%[2] Mobile Internet 85%[3]			Develop information and communications technology infrastructure in the interior
9. Banking[4]	20 commercial bank branches and 68 ATM per 100,000 persons	12 commercial bank branches and 51 ATM per 100,000 persons[4]	Region 8:	2 bank branches (current total 0)	Expand banking services in remote areas. Develop infrastructure to support mobile banking in the interior
			Region 1:	4 bank branches (current total 1)	
			Region 9:	3 bank branches (current total 2)	

Source: MICS 2014 for Guyana unless otherwise indicated.

* These numbers show the extent to which current indicators differ from the 2030 development goals. For example, the distance to full coverage of improved sanitation is 5 percent for Guyana and 14 percent for the interior, meaning that 95 and 86 percent of the Guyanese population and the interior population has access to improved sanitation, respectively.

1. An overlay of the road network map and the population density map; 2. Telegeography, 2018; 3. GSMA Total mobile internet subscribers at the end of the period, expressed as a percentage share of the total market population; 4. WDI and List of Commercial Banks and Branches 2015, Bank of Guyana

Priority Area IV

13. Achieving sustainable long-term growth will require successfully converting depletable natural capital into broad-based gains in human capital. The government must

expand access to essential services and infrastructure, including safe water sources, improved sanitation, roads, electricity, primary and secondary education, basic healthcare, ICT infrastructure, and banking services. Initial conditions and development indicators vary greatly across geographic areas, and priorities must reflect the prevailing circumstances in each region. Reaching the service-delivery targets defined in the 2030 development goals will require addressing specific gaps in each region through a comprehensive spatial development package (Table 6-1) backed by an expenditure allocation that prioritizes areas in need of major improvement (Annex 6). The necessary improvements in social services will be expensive—for example, the total cost of comprehensive education reform (for ages 5-19 years) alone could be as high as US$2.4 billion (US$9,800 per student, per year),[101] which is around half Guyana's current nonoil GDP—and the speed at which social services can be upgraded will depend upon the absorptive capacity of the economy. Formulating a comprehensive plan for infrastructure investment and the expansion of social services will help prioritize projects according to their costs and benefits.

14. Guyana's social protection system requires major reforms to expand coverage and enhance its impact. To implement conditional cash transfers, the authorities must develop a cash transfer mechanism and targeting system and improve the social registry. Moreover, the authorities must recognize that cash transfers are a supplemental mechanism and cannot substitute for the provision of essential social services.

15. Once full coverage of basic services and infrastructure has been established, policymakers should focus on achieving universal health coverage and creating a market-responsive education system. Over the medium term, the goal should be to achieve UHC that provides quality medical services and risk protection to all Guyanese citizens. Strong accreditation and quality systems for tertiary education and TVET are required to support productivity-led economic transformation while creating labor markets that are inclusive.

Box 6-2 Data and Knowledge Gaps

To successfully manage the newfound wealth, Guyana needs a robust framework of data and analytics. There are several areas where Guyana needs to advance data and knowledge base to inform policy decision making given that the country is expecting a sharp increase in fiscal revenue and unprecedented economic transformation.

Priority Area I: Macroeconomic stability

Fiscal and monetary policy will need to be guided by a quantitative assessment of oil revenues and the absorptive capacity of the nonoil economy. Projections of oil revenue require geological data as well as information on the cost structures of the private sector as well as the impact of alternative tax and contract structures. Similarly, the impact of the magnitude and composition of fiscal spending requires detailed information on household and firm behavior. Assessing the impact of climate change and ensuring environmental sustainability requires information on physical conditions of infrastructure and impact of climate change on environmental conditions.

[101] Organization for Economic Cooperation and Development (OECD), Online Education Database, https://stats.oecd.org/Index.aspx.

Priority Area II: Public Sector Governance
Managing the public sector requires information on how to manage the civil service, contract and supervise the private sector and use technology for public finance management systems. This involves a deep understanding of the challenges to upgrade and incentivize civil service contracts, manage the private sector to deliver public services and use technology appropriately.

Priority Area III: Economic transformation and job creation
Understanding the dynamics of firm, productivity and labor market is critical for developing a strategic plan for economic diversification and transformation that support sustainable growth. Understanding barriers to entry into markets for firms and workers will help design public policy interventions that ensure inclusive growth. These require regular collection of firm, trade and labor market data.

Priority Area IV: Human capital investment
Household data are significantly outdated, prohibiting a thorough analysis of the distributional impact of the oil sector and public spending. Without such data readily available, Guyana is in a weak position to design public policy interventions that would address poverty and promote intragenerational equity. This is crucial for creating and maintaining social cohesion.

Conclusion

16. Guyana has the power to transform its newfound oil wealth into an engine of inclusive and sustainable growth. The fiscal revenues from the oil sector will be sufficient to close the country's infrastructure gap and support the development of a skilled workforce capable of competing in a dynamic global economy. The international experience presents several encouraging examples of developing countries that have leveraged natural resource endowments to accelerate macroeconomic convergence by investing fiscal windfalls in physical, financial, and human capital.

17. However, Guyana must not assume that success will come easily or without risk. The international experience also includes many cautionary examples of countries that failed to manage their resource wealth prudently. Some took inadequate precautions to prevent the erosion of external competitiveness and saw their nonoil sectors wither over time, while others squandered their fiscal resources on ill-conceived investments and unsustainable expenditures. In the most extreme cases, formerly resource-rich countries fell deeper into poverty, inefficiency, and dysfunction as their resource wealth dwindled, demonstrating that resources can be a curse as well as a blessing.

18. The quality of Guyana's governance and the prudence of its policymakers will ultimately determine whether Guyana's oil reserves lead to a brighter future. Across countries, institutional strength has proven to be a critical factor that affects all aspects of resource management. Public administrations that have resisted the corrosive influence of resource revenues have successfully transformed their natural wealth into a basis for sustainable and inclusive growth, while countries with weak or deteriorating institutions have fallen victim to the worst manifestations of the resource curse.

19. Guyana has taken a positive first step by establishing an overarching strategic vision that defines the oil sector's role in the country's long-term development but operationalizing

this vision will pose a critical challenge. Oil revenues are inherently unpredictable; they increase macroeconomic volatility and tend to damage the competitiveness of the nonoil sectors. Mitigating the risks generated by oil production while maximizing its positive spillovers will require a far-reaching policy program implemented by a highly competent public sector. Successful adoption of modern management would have to take into account that the economy of Guyana and the livelihoods of its people largely depend on the utilization of its rich natural resource base, which has been increasingly under pressure from human activities and climate change. Obtaining the necessary skills and experience to manage the oil sector will be vital to the success of the government's agenda, and collaboration with experts and international partners will provide crucial support and external oversight as the authorities expand the capabilities of Guyana's public institutions.

20. To achieve Guyana's vision, policymakers must maintain a consistent focus on inclusion and sustainability. Guyana's oil sector is weakly connected to its nonoil economy, with limited potential for direct upstream or downstream linkages. In this context, fiscal revenue will be the primary mechanism through which the benefits of the oil sector are transferred to the economy and society. Investing in physical infrastructure and building human capital will be essential to offset the adverse impact of oil exports on external competitiveness and enable sustainable economic growth and diversification. Finally, targeting social spending to the poorest regions and most vulnerable populations will help ensure an equitable distribution of benefits that is not constrained by the oil sector's limited connectivity to the livelihoods of poor households.

A. Annex 1 Guyana's Development patterns 2006-17

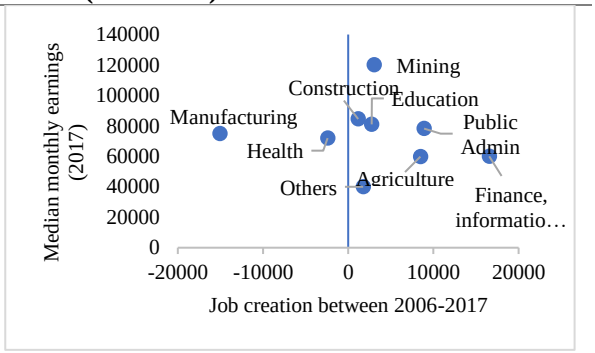
1. A preliminary analysis identifies three key characteristics of Guyana's development path that contributed to this failure: (i) repressed private sector with lingering impact of socialist planned economy; (ii) high government consumption leading to unsustainable debt burden; and (iii) rising mineral prices and foreign direct investment (FDI), that contributed to Dutch disease. The impact of Dutch disease was much more severe because of the repressed private sector and government consumption growth. Constraints to private sector development go back to the post-independence socialist policies, which continued through subsidies and transfers for state owned enterprises (SOEs). Government consumption grew faster than GDP growth during 1991-2017, as the country failed to invest in human and physical development. All these factors limited job creation and exacerbated spatial inequalities that contributed to high levels of poverty and massive emigration.

2. The economic growth was driven by the mining sector since the early 1990s, which triggered symptoms of Dutch disease since around 2006.[102] From 2006 to 2017, rising global mineral prices spurred renewed investment in the mining sector and its share in GDP almost doubled from 11 to 21 percent. Average per capita income grew by 3.8 percent during these years. However, as in typical Dutch disease fashion, the real effective exchange rate appreciated by 43 percent during 2006-17 making non-mining exports, notably rice and sugar, uncompetitive. Employment in manufacturing declined (Figure A-1). Continued public policy interference via SOEs in agriculture further delayed adjustment in this sector. Meanwhile, services grew rapidly as increasing revenue from mining exports boosted spending on non-tradable sectors disproportionately.

Table A-1 Economic Growth and Poverty, 2006-17

Rate of growth (percent)	
Gross Domestic Product (GDP)[a)]	4
Per capita GDP [a)]	3.8
Government consumption [a)]	5.3
Private Consumption [a)]	2.3
Investment [a)]	4.9
Exports [a)]	3.1
Imports [a)]	2.1
Poverty (percent) [b)]	
$3.2 a day in 2011 PPP	33.7 → 26.7
$5.5 a day in 2011 PPP	58.6 → 43.4

Figure A-1 Job Creation and Median Earnings by Sector (2006-2017)[b)]



a) Author's calculations from WDI and Macro-Fiscal Model data, in constant 2010 prices.
b) Author's calculations from Household Budget Survey 2006 and Labour Force Survey 2017.[103]

3. Guyana's development path did not facilitate strong private sector development, with uneven competition and low productivity. Budget transfers and guarantees allowed SOEs to remain important, managing significant resources and competing with the private sector on an uneven playing field. For example, Guyana Sugar Corporation (GUYSUCO) is a monopoly on sugar processing and exports. It directly employs almost 2 percent of the population, but an estimated 20 percent of the population (160,000 people) depends on GUYSUCO for income. The overall business climate continued to be poor, constraining competition. Guyana's doing business is ranked 134th, out of 190 countries. Energy prices in Guyana are

[102] See Corden and Neary (1982) for Dutch disease symptoms.
[103] Income poverty rates are non-official estimates. Poverty analysis is a challenge in Guyana due to infrequent data collection. The latest official poverty and extreme poverty estimates are from 2006. The latest nationally representative survey in Guyana is the Labor Force Survey (LFS) 2017, which collected individual and household income information. As Guyana is at a transformative point, up-to-date poverty analysis is invaluable to inform policy. This report, therefore, uses information from the LFS to capture the latest poverty incidence in Guyana. Income measures are constructed following the guideline used for other LAC countries.

among the highest in the world at US$0.3 per kWh. The result was economic growth confined in the capital-intensive mining sector, with low impact on the demand for labor.

4. Following reforms in the early 1990s poverty has declined, closely mirroring trends in economic growth. The official poverty rate declined by 7 percentage points during a period of high economic growth in the early 1990s when both agriculture and mining expanded by an annual average of over 10 percent. The official poverty rate remained unchanged in 1998-2005 when growth stagnated and resumed again its downward path after 2005 when growth accelerated again. In 2017, the income poverty rate estimated based on the 2017 Labour Force Survey and the USD 5.5 a day in 2011 PPP poverty line stood at 43.4 percent, down from 58.6 percent in 2006.

5. The resource-based development pattern contributed to lack of inclusive growth as it created limited jobs. Although poverty declined, the impact of growth on poverty reduction was low. The poverty-growth elasticity, measured at both GDP and household income, was less than 0.5 compared to 1.9 in Paraguay and 2.9 in Ecuador. Due to its resource-based growth, Guyana lacks industries to absorb labor and create high-quality jobs. Between 2006 and 2017, the growth of the capital-intensive mining sector yielded only limited jobs, mostly in informal artisanal mining. Plagued by the Dutch disease, agriculture absorbed some additional labor at declining wages and manufacturing shed jobs. The non-tradable service sector expanded but produced few high-paying jobs. The growth of the mining sector bolstered fiscal revenues, which supported the growth of public services, including health, education, and social protection. However, expenditure efficiency declined as growth of service delivery failed to keep pace with the increase in spending. Public transfers had a small number of beneficiaries and insufficient targeting, limiting their impact on poverty reduction. The income of the bottom 40 percent grew slower than average income of Guyanese households. Income inequality, as measured by the Gini coefficient, increased from 0.46 to 0.48.

6. Furthermore, Guyana's resource-focused growth exacerbated spatial disparities in economic development.[104] Much of the economic activity associated with the resource sector, including its impact on non-tradeable services and the public sector, is concentrated in urban areas. As agricultural exports lost competitiveness, employment opportunities in rural areas declined. In 2017, the poverty rate was 57 percent in the rural interior and 44 percent in rural coastal areas, compared to 34.4 percent in urban coastal areas. Unequal access to opportunities and public services also contributed to spatial disparities in human development. Labor force participation is particularly low for women in rural areas. Healthcare facilities are concentrated in urban areas and urban-rural disparities in health outcomes remain large. The result was large disparities observed between geographical areas. The widening rural-urban economic divide spurred internal migration, with a large share of younger people moving to the cities.

7. Different ethnic groups are associated with specific economic activities in Guyana. For example, rural coastal areas are home to Indo-Guyanese who dominate the agricultural sector (Table A-2). Half the urban population is Afro-Guyanese that comprise the largest share of the service and public sector.

Table A-2: Ethnic Composition of Urban/Rural Areas and Economic Activities

	Urban/Rural			**Economic activities**			
	Urban coastal	Rural coastal	Interior	Agriculture	Mining	Industry	Services
Afro-Guyanese	49.0%	21.7%	3.5%	14.0%	18.0%	30.5%	38.0%
Indo-Guyanese	16.9%	53.9%	0.6%	57.8%	9.2%	43.2%	34.3%
Amerindian	1.4%	3.8%	67.2%	14.0%	27.4%	5.2%	5.9%
Mixed/Others	32.8%	20.5%	28.7%	14.1%	45.4%	21.1%	21.8%

Source: WB staff estimates based on the LFS 2017.

Annex 2: Income poverty methodology: Guyana 2006 HBS and 2017 LFS

Income poverty rates are non-official estimates. Poverty analysis is a challenge in Guyana due to infrequent data collection. The latest official poverty and extreme poverty estimates are from 2006. The latest nationally representative survey in Guyana is the Labor Force Survey (LFS) 2017, which collected individual and household income information. As Guyana is at a transformative point, up-to-date poverty analysis is invaluable to inform policy. This SCD, therefore, uses information from the LFS to capture the latest poverty incidence in Guyana. Income measures are constructed following the guideline used for other LAC countries.

This Annex explains how the income aggregate is constructed for Guyana using the World Bank Group's methodology (SEDLAC) to generate poverty indicators that are comparable across countries. In the case of Guyana, the income harmonization process was done for the two latest available surveys: the 2006 Household Budget Survey and the 2017 Labor Force Survey.

Welfare Aggregates

Poverty analysis is based on welfare aggregates. The most widely used are consumption and income. The Guyana 2006 HBS provides information on both income and consumption. Previous welfare analysis of the 2006 HBS used consumption data to estimate aggregates and welfare indicators. However, the latest 2017 LFS includes only income data. To analyze recent trends in welfare changes, an income welfare aggregate was derived using the SEDLAC harmonization methodology. This also permits comparison of Guyana's performance with other countries in Latin America and the Caribbean, and measure poverty using international poverty lines.

This annex explains how the income aggregate is constructed following the SEDLAC harmonization process, as well as the treatment of cases where there were limitations in the available data. Although the harmonization process follows the guidelines for the SEDLAC harmonization effort, there are factors that may limit the comparability between the two datasets. Main aspects include the framing of the questions relating to income, the reference periods considered in the two surveys and the treatment of income derived from self-employed activities, which will be discussed in detail in this section.

SEDLAC Income Harmonization Methodology

SEDLAC constructs the total household income by aggregating all individual and household income sources. These are divided two types of categories: labor and non-labor income, monetary and non-monetary. All income is in monthly values.

The SEDLAC harmonization process does not consider income that is not habitually received on a regular basis. Since the main objective of the harmonization is to create an income welfare aggregate that reflects a household's income throughout the period considered, it seeks to best capture a family's permanent income. Therefore, income derived from lotteries, inheritance, sale of property or durables, loans or loan payments, or withdraws from savings are not considered.

Labor income

These variables denote the income from the income source defined by the type of employment in the main occupation: employers, salaried workers, self-employed and non-salaried workers. The variables are also divided into monetary and non-monetary income. These include:

1. Labor income as salaried worker
2. Self-employed income
3. Business owner income
4. Other labor income

Non-labor income
These include income from three main types of sources:

1. Income from retirement and pensions
2. Capital income, interests, rents, revenue, dividends
3. Transfers:
    - Income from remittances from abroad
    - Public transfers income
    - Income from private transfers from within the country
    - Other non-labor income

Following SEDLAC guidelines, implicit rent is not considered when the questionnaires do not provide information on housing ownership, which is the case for the 2017 LFS.

Regional price differences
Rural areas tend to have lower incomes, but also tend to face lower prices than urban settings. This is due to many factors. For example, subsistence farming or easier access to food could imply a lower price index for rural areas than for urban ones.

This translates into different areas having the same nominal income but facing different prices for the same set of goods and services, and therefore will have different purchasing powers and living standards. To address this situation, the SEDLAC project adjusts rural incomes up by a factor of 15 percent to capture rural-urban price differences. With this, the regional price differences are addressed, and a consistent methodology is applied to all countries. Even though this procedure does not consider specific price differences within each country, nor the evolution of this difference over time, it is the best methodology that has been proposed thus far.

SEDLAC Harmonization for Guyana 2006 HBS and 2017 LFS

The harmonization process for both the 2006 HBS and 2017 LFS followed the SEDLAC methodology using similar construction of variables for both surveys (except for certain issues specific to the 2006 HBS). These include the treatment of self-employed and business income, some adjustments for the variables corresponding to household heads, the definition of those who are employed and interpretation of individual labor income from household level data. These differences will be explained in greater detail below. However, in terms of the construction of other income sources, the harmonization process followed a similar logic.

Following the SEDLAC guidelines, variables from other income sources are categorized into labor and non-labor income variables. From Guyana's questionnaires, labor income was constructed as the sum of basic wages, salary and allowances, value of benefits or wages in kind as well as benefits received in cash or in kind. Non-labor income is divided into social welfare benefits, pensions, rent, capital income, remittances from abroad and remittances received from within Guyana. These variables are then checked for consistency.

Income variables are then adjusted by regional differences, where rural household incomes are inflated by 15% so their real purchasing power is comparable to urban household income. The income is transformed from GYD to USD PPP 2011 values, and the poverty rate is calculated as the weighted headcount of the population below the international poverty lines: $1.90 USD PPP 2011 and $3.2 UDS PPP 2011.

Treatment of 2006 HBS Data Limitations for Income Harmonization

Treatment of self-employed (and business owner) income:[105]

Although usually self-employed and business owner income is asked at an individual level, the 2006 individual questionnaire does not ask individuals about their self-employed income. Not taking this factor into account may overestimate poverty rates, since there may be a large portion of self-employed informal workers. Therefore, due to the limited data of self-employed income at the individual-level data, household-level data was used to obtain household-level aggregates of self-employed income as well as income from other sources. Individual-level data was used in cases where household-level data was unavailable.

Following the SEDLAC harmonization, self-employed labor income includes all income from self-employed activities net from the costs incurred in the production of the goods (if information is available). An important case for Guyana is that of income derived from agricultural activities. Income must be verified and transformed into monthly values as well as consider the production costs associated with the production of these goods. Another important item is self-consumption. If the survey reports self-consumption, this should be treated as self-employed non-monetary labor income.

In the case of the Guyana HBS, information is available for the output and input in the goods and services produced by self-employed labor. Self-employed production is constructed by adding all goods reported in the production of self-employment activities, both agricultural and non-agricultural. Non-agricultural self-employed activities include livestock production, fishing and fish breeding, hunting and forestry, mining and quarrying, manufacture and repairs, construction, guesthouse and restaurants, trade, transport as well as other services.

The household total self-employed revenue consists of the sum of the total amount in GYD of goods consumed by the household and as those that were effectively sold in monthly values. Goods that were transferred to other use were not considered, since these could be donated as gifts, or other uses that may not contribute to the household's welfare. The production costs were taken from the input from self-employed activities, which include material input, water, electricity and fuel lubricants, repair and maintenance, rent, interest fees, brokerage commissions and hired labor. Net self-employed income is then calculated subtracting the total revenue by the total costs associated. In order to guarantee consistency, negative profits were set to zero, as well as the profit for those households who did not report inputs or reported a value of zero for inputs.

For other income sources reported at a household level, SEDLAC recommendations were taken into account. These establish that if the survey reports income for a period of more than one month, only the last month's income should be considered. The exception to this rule is for variables that might have a seasonal aspect (such as remittances in some countries). For these types of income, it is better to consider the average of the past months instead of the only the income from the past month.

Therefore, for seasonal variables such as remittances, the yearly reference period was used. Also, other sources of incomes were created considering the reference periods used in the 2017 LFS, in order to insure comparability of income and poverty estimates between the two surveys. Therefore, wages, salary, allowances, value of benefits and or in kind, bonuses both in cash and in kind, social welfare benefits, and pensions were estimated using monthly data. However, those sources of income that in the LFS were asked in a reference period of a trimester, semester or annually were computed using the HBS yearly estimates. These include remittances both domestic and from abroad, royalties, annuities, interest payments as well as other receipts and insurance.

[105] In this section, self-employed refers to both self-employed persons and business owners.

Income Aggregate and Self-employed Income Consistency Conditions

The total household income is then constructed as the sum of all self-employed, other labor and non-labor income sources. In cases where the household income constructed as the sum of income sources was missing or zero, individual-level data was used. The individual-level total household income is constructed as the sum of the income from all individuals in the household from the individual questionnaire. Self-employed income is then added to the income aggregate.

To insure consistency, this aggregate was compared to the value the household reported for their total household income. The household questionnaire asks the respondent to report the total monthly household income in GYD. This is used as a benchmark to compare against the income aggregate derived from the sum of the provided income sources, including the estimation of the household's self-employed income derived from the computation of reported profits and costs from self-employed activities. The aggregation of income sources should not exceed the reported household's total income, so this variable was used as an upper bound threshold of the aggregation.

The variables used for the consistency checks are the following:
h1o: Total reported household income
sum_inc: Sum of labor and non-labor income sources excluding self-employed income.
profit_se: Self-employed income calculated from the outputs and inputs of self-employed acitivites captured in household-level data;
inc_wse: Sum of income sources including self-employed income: sum_inc + profit_se

Case A: If the total reported household income (h1o) is greater than aggregation of income sources including self-employed income (inc_wes), the results are consistent and therefore total household income is:
Total household income = sum_inc + profit_se
Self-employed income = profit_se

Case B: In cases where the aggregation of the income sources including self-employed income (inc_wes) was greater than the total income reported by the household (h1o), reported total monthly household income was used, and the self-employed income was calculated as the residual between this amount and the sum of household income sources:
Total household income = h1o
Self-employed income = h1o – sum_inc

Case C: In cases where the sum of income sources excluding self-employed income (sum_inc) is greater than total reported household income (h1o), total household income is taken as the sum of income sources excluding self-employed income, and self-employed income is set to zero.
Total household income = sum_inc
Self-employed income = 0

In cases where households did not report any income sources at the household questionnaire, self-employed income is also not considered. The sum of income sources is prioritized as the most consistent welfare measure, since individuals have a greater recall of amounts from distinct income sources. Also, recall may have imperfections for inputs and outputs from self-employed activities, especially in more complex production processes. Through the treatment of self-employed income using these consistency checks, we decrease the likelihood of errors of measurement of self-employed income. Then, for both the 2006 HBS and 2017 LFS, the observations where the per capita income exceeded the 99th percentile income threshold were replaced with the value of the 99th percentile of the same source.

Household Heads and Employment Status

SEDLAC guidelines indicate that there should be only one household head. However, some households in the 2006 HBS had two or zero household heads defined. In these cases, the following criteria was used:

- In cases where the age of individuals is available, the household head was defined as the eldest individual within the working age range (15 to 64).
- In cases where there were only individuals older than 64 years of age, the head of household was assigned to the eldest person in the household.
- In cases where there was no individual data available and therefore no ages determined (only household data was available) the head of household was randomly assigned.

In other cases, there were households that reported positive labor income, but reported zero employed individuals in the household. In these cases, the head of household was defined as employed and the total household labor income was assigned to this person.

Robustness Checks: Per Capita Income Growth and Welfare Measures in Poverty Measurement

The construction of per capita household income follows a similar growth trend as the GDP per capita growth rate between the years 2006 and 2017. This suggests the growth rate derived by the constructed income including household and individual level data, as well as self-employed income conveys an accurate measure of income changes within the period analyzed.

Income in USD PPP 2011	HBS 2006	LFS 2017	Annualized Growth
Mean per capita income	177.20	263.05	3.66%
GDP per capita	412.39	619.59	3.77%

Source: 2006 Guyana Household Budget Survey, 2017 Labor Force Survey, World Development indicators.

The 2017 poverty headcount is estimated at 26.9 percent. Income measures are obtained by aggregating all individual income sources collected by the LFS. Due to the limited data of self-employed and business income at the individual-level data in the HBS 2006, income measures are obtained by aggregating all household income sources.

The table below shows how poverty trends change for different treatments of self-employed and business income.

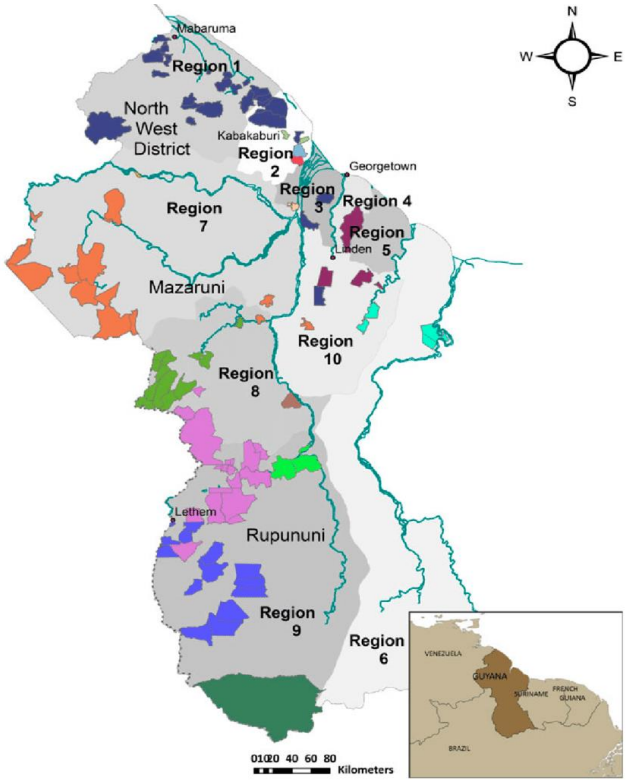
2006 Poverty Headcount $3.20 USD PPP 2011	
Per capita household income based on individual-level income by sources†	41.7%
Per capita household income based on household-level income by sources	33.7%
Per capita consumption expenditure	22.4%

Source: Calculations from the 2006 Guyana Household Budget Survey.
†This methodology is most comparable to that applied to the LFS 2017. However, almost all self-employed and business owners have zero labor income in this case as the individual questionnaire only asks for basic wages/salary and allowances.

B. Annex 3: The Indigenous Population of Guyana

Guyana is a diverse country with several ethnicities. These comprise approximately 39 percent East Indian, 29 percent African, 20 percent mixed-Guyanese, 11 percent Amerindian, and about 0.5 percent belonging to other groups.[106] The population is concentrated along the coastal plain with the interior sparsely populated and covered by savannah and rain forest; Georgetown, the capital, has about 200,000 people. The 2012 Census records the "Amerindian" or Indigenous population as 10.5 percent of the country's total population. Amerindians live in villages in the interior that covers 90 percent of the country's landmass. They tend to have higher poverty rates, lower access to basic services, and limited connectivity compared to other ethnic groups. Access to opportunities and services is also limited due to lack of infrastructure in the interior.

Although, Amerindians live in Guyana's gold-rich interior, they usually face challenges due to lack of capital and insufficient knowledge of the licensing process. And thus, most are involved in gold mining as unskilled workers. To address social and economic issues among the Amerindian, the Amerindian Act 2006, was enacted and a Ministry of Amerindian Affairs established.



Source: Bulkan. (2013). Map prepared by Anthony Cummings. Colored areas show indigenous areas.

[106] Census, 2012.

C. Annex 4 Offshore Petroleum Discoveries

1. Guyana remained largely unexplored, with no significant petroleum discoveries until 2015, but it is now among the 21 largest oil reserve-holders in the world. Oil was first found in Guyana onshore in the 1960s prompting exploration that was however unsuccessful for decades: between 1978 and 2015 alone a total of 40 wells were drilled, all of which were dry. Advances in technology and improved understanding of the geology finally resulted in Guyana's first major oil find in 2015. Exploration results since then – with an unprecedented success rate of 89 percent – have confirmed estimated gross recoverable resources of over eight billion barrels of oil equivalent (comparable to Angola which has a much larger population), amounting to 15 percent of total conventional oil discovered globally during 2015-19.

2. Guyana hosts a wide array of international oil companies. These include ExxonMobil, Total, CNOOC, Repsol, Tullow, Hess, Qatar Petroleum, CGX Energy, Frontera Energy, Eco Atlantic, Ratio Oil and JHI Associates. Most of the acreage available for exploration offshore Guyana has been allocated. ExxonMobil – operator of the Stabroek, Canje and Kaieteur offshore blocks - has been most successful of all O&G explorers in Guyana. Less than five years since the first discovery, ExxonMobil and its partners, started production offshore Guyana.

Table C-1: ExxonMobil/Hess/CNOOC Guyana Projects' Overview

Fields	Volume Developed	Production			Breakeven price	Development Costs
		Start	*Volume*	*Duration*		
Liza-1	~500 million barrels (bbl)	Late 2019	120,000 bpd*	20 years	US$35/bbl	~US$6/boe
Liza-2	~600 million bbl	2022	220,000 bpd	20 years	US$25/bbl	~US$7/boe
Payara	~600 million bbl	2023-2024	220,000 bpd	20 years	N/A	N/A
Projects 4-5	N/A	2025-26	~190,000 bpd	N/A	N/A	N/A

*These volumes are averages. It can take up to three months from start production to full capacity. boe=barrels of oil equivalent
Source: WB using multiple reports from ExxonMobil and Hess, 2019.

D. Annex 5: A Model for the Guyana oil economy

A modified version of the World Bank's Macroeconomic and Fiscal Model (MFMOD) was used for the projections presented in this report. A stand-alone version of this model was made available to the Guyana authorities and technical assistance is scheduled to support them in using this model.

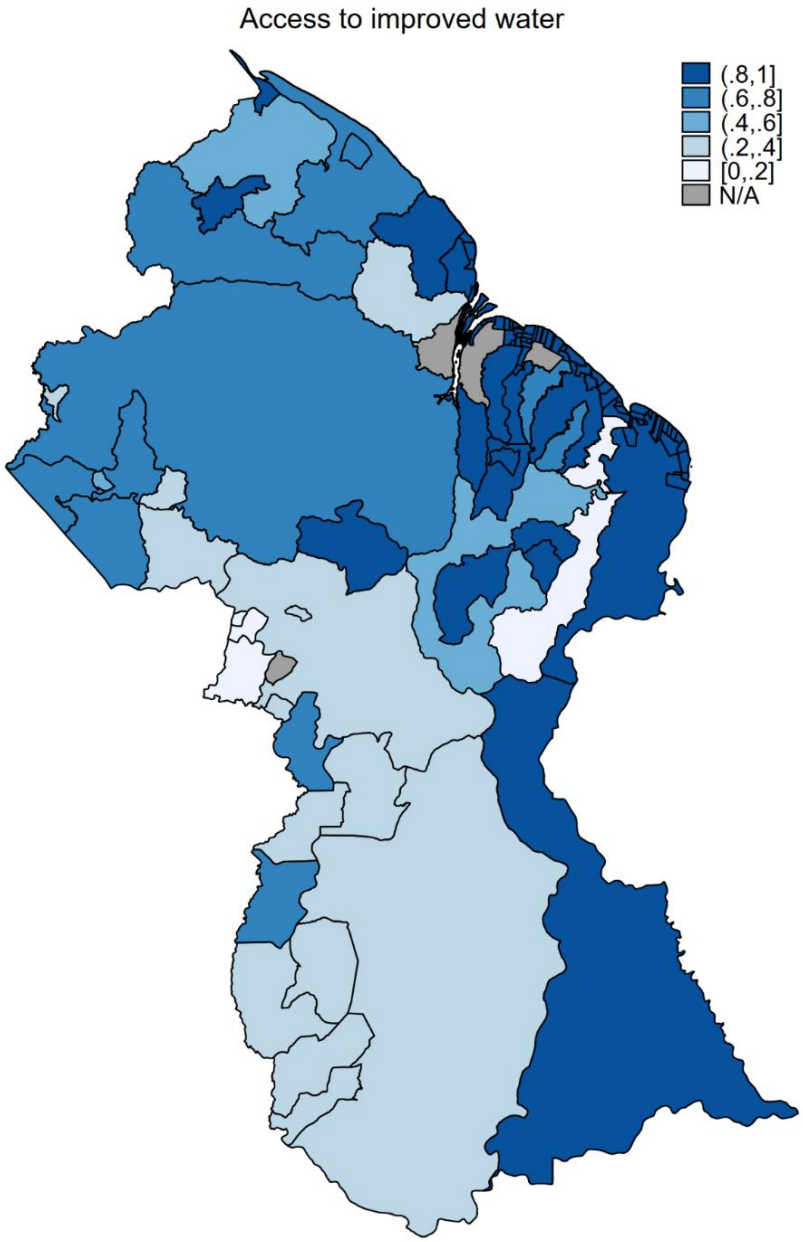
MFMOD is a structural econometric model, similar in basic formulation to the classic Klein- or Cowles Commission-type (Fair, 1992) models. Like Financial Programming models (cf. Mikkelsen, 1998), structural models reproduce the flow of funds across the whole economy by mapping out the main identities of the national accounts, balance of payments, labor markets and financial sectors. In contrast to financial programming models, macrostructural models make a concerted effort to estimate the economic and behavioral determinants of economic variables. In models like MFMOD, these structural relationships are developed to be both consistent with economic theory and the observed dynamics of the economy.

MFMOD is similar in structure and design to global models such as OECD's Interlink model (Daalsgard, André, Richardson, 2001), the IMF's MULTIMOD model, the UN's Project Link model, the Federal Reserve's MPS model (Brayton, Laubach and Reifschnedier, 2014), and the ECB's multi-country model ECB-MC, as well as those used by the Congressional Budget Office in analyzing policy in the United States (CBO, 2013). A wide-range of private-sector forecasters also use similar models (IHS Global Insight, DRI, Oxford Economics and a number of investment banks).

GUYMFMOD consists of approximately 147 equations (behavioral equations and identities). Most parameters in the model are estimated using the one-step error correction approach of Wickens and Breusch (1988). In most of these equations equilibrium or steady state conditions are derived consistent with economic theory. In contrast, short-run dynamics (adjustment to the long run) are in most cases[107] data-driven, with estimated parameters reflecting the actual behavior of the economy. As a result, the sensitivity of speed of adjustment of each country-specific model to its economically determined long-term equilibrium and the steady-state qualities of each of these equilibria depends mainly on the actual historical behavior of the economy. In contrast, in DSGE models steady state is typically derived from an economic maximization problem grounded in calibrated parameters. In both DSGE and macro-structural models the overall time-variant equilibrium growth path of the economy is determined by potential output, which is calculated using the production-function methodology as a function of TFP, the level of capital and labor.

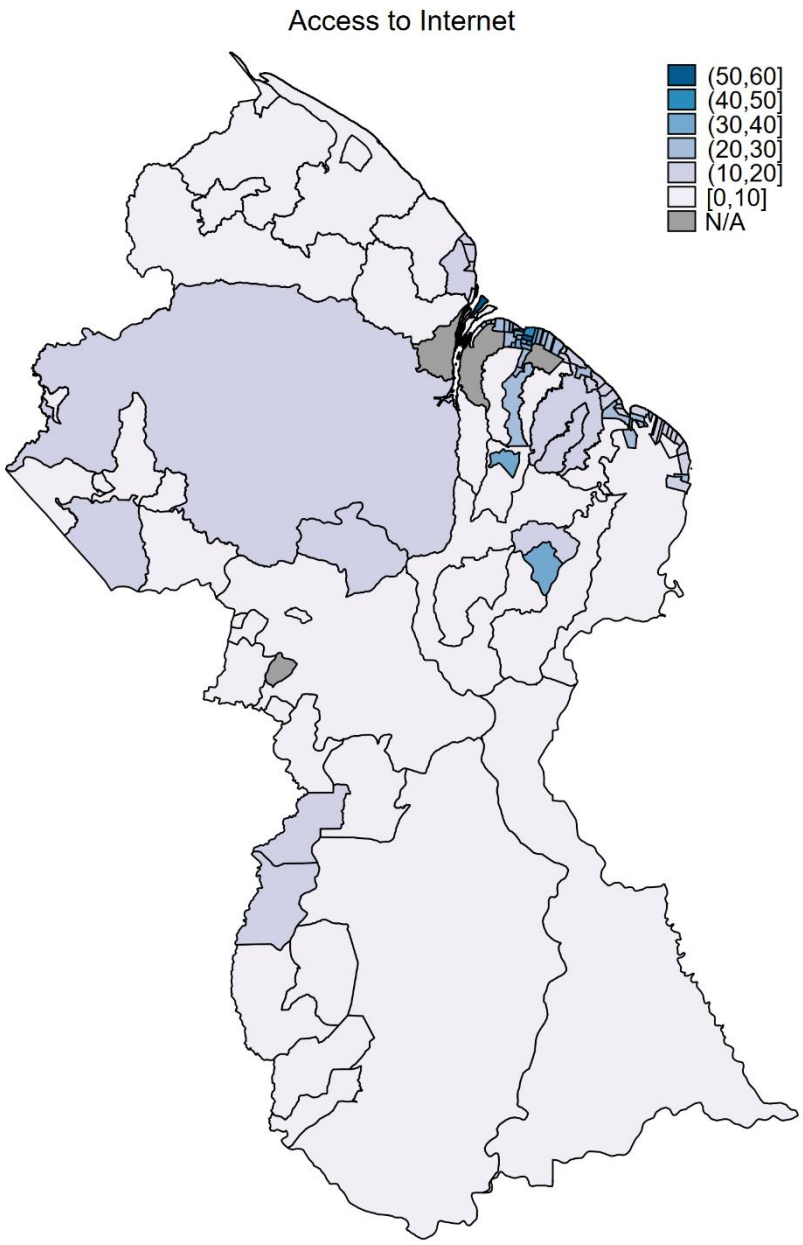
E. Annex 6 Spatial Disparities in Basic Services by Neighbourhood Democratic Councils

Figure E-1: Share of households with access to improved water by NDC



Source: Census 2012, Bureau of Statistics, based on 94 percent of the Census data

Figure E-2: Share of populations with access to internet by NDC



Source: Census 2012, Bureau of Statistics, based on 94 percent of the Census data

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