Green State Development Strategy: Vision 2040

Diversified, Resilient, Low-carbon, People-centred

May 2019

Executive Summary

Background

The ***Green State Development Strategy: Vision 2040*** is Guyana's twenty-year, national development policy that reflects the guiding vision and principles of the 'green agenda':

> *"An inclusive and prosperous Guyana that provides a good quality of life for all its citizens based on sound education and social protection, low-carbon and resilient development, providing new economic opportunities, justice and political empowerment."*

The central objective is development that provides a better quality of life for all Guyanese derived from the country's natural wealth – its diversity of people and abundant natural resources (land, water, forests, mineral and aggregates, biodiversity). The vision of the 'green agenda' is centred on principles of a green economy defined by sustainable, low-carbon and resilient development that uses its resources efficiently, and sustained over generations. The development philosophy emphasises the importance of a more cohesive society based on principles of equity and tolerance between ethnic groups – recognising that diversity of culture and heritage is the underlying strength of the country's human capital. Development objectives therefore seek to improve the health, education and overall well-being of Guyanese citizens, to lift people out of poverty through an economy that generates decent jobs and that provides opportunities for sustaining livelihoods over the long term.

For decades, geopolitical events, natural disasters and global commodity price swings have weighed upon Guyana's development. Its economy is heavily dependent on primary commodities, which provide little opportunity for economic diversification, and consequently employment. Growth is lagging behind that of its regional counterparts. Levels of education and health require significant improvement to build up human capital – knowledge, skills, creativity and wellbeing – that are essential for a transforming, productive and diversified economy, and society. The country's institutions are in need of reform to ensure greater transparency, participation and confidence among the citizenry and to drive the anticipated change.

The Strategy was developed from a multi-layered, nationwide, stakeholder consultation process. A first level produced the Framework[1] completed in 2017 that prioritised Guyana's long term development within seven themes. In the following year, seven multi-stakeholder, thematic expert groups with 116 participating professionals from Guyana's public and private sector and civil society groups, were formed to deliberate on the development themes. Their work established the policy trajectory under each theme. A third layer of consultations ensured input from Guyanese citizens through meetings held at 33 cluster sites in coastal and hinterland areas, drawing participation from more than 1,600 citizens in surrounding communities and villages. "Green Conversations" – public and media events were also organised in the capital city and main regional towns and featured international and local speakers and interactive question-and-answer sessions discussing relevant 'green' topics.

[1] "Framework of the Guyana Green State Development Strategy and Financing Mechanism", Government of the Cooperative Republic of Guyana and UN Environment, March 2017; 62pp.

Several technical workshops were conducted that built skills and shared knowledge on development methods and approaches. Senior staff of government ministries and agencies, private sector bodies and civil society groups were consulted and interviewed for their recommendations. These inputs, along with secondary research and analyses conducted by researchers and experts (local and international) are described in the Annexes and have collectively served as the basis for developing the policy recommendations.

The *Green State Development Strategy: Vision 2040* arrives at a unique stage in Guyana's future: the country is about to be catapulted onto the global stage as the newest producer of oil and gas. Understanding the proverbial "blessing or curse" that this great fortune may portend, the *Strategy* is developed on the premise that with revenues generated from the country's natural wealth, it is now possible to modernize traditional sectors (e.g. forestry, fisheries), maximize efficiency and investment opportunities in high growth sectors (e.g. mining, rice), and invest in future value-adding sectors (e.g. business process outsourcing, tourism and agro-processing), ensuring better opportunities for Guyanese. These aspirations have been locked into national and sector development strategies, policies and plans and have remained largely unimplemented, in some cases, over many decades.

Against this backdrop, the *Green State Development Strategy: Vision 2040* provides a comprehensive set of strategic action lines to guide public investment. Development objectives are broader than Guyana's past development strategies and reflect a more holistic view of social, economic and environmental well-being, in line with the country's commitments to the United Nations' 2030 Sustainable Development Agenda and Goals (SDGs). The Strategy not only aims to foster sustained economic growth that is low-carbon and climate resilient, but a socially cohesive citizenry, based on better business and job opportunities, improved health and education systems, capable institutions that can execute well their mandates to build a resilient, diversified and internationally competitive economy.

The Strategy therefore promotes 3 key messages:

- Manage natural resource wealth;
- Support economic resilience; and
- Build human capital and institutional capacity.

Manage natural resource wealth

Sound fiscal and monetary policy is a key objective for managing development of the country's natural resource wealth. In the coming years, oil and gas revenues could dominate Guyana's economy and this carries significant risk. The Natural Resource Fund Act was recently passed by the Parliament[2] and the next step is to appoint the Public Accountability Oversight Committee. In addition, national budget operations for the integration of an extensive and long-term social investment programme must transition to a Medium-term Expenditure Framework (MTEF). The Framework will detail over what length of time expenditure ceilings are set and how frequently these are revised. To support longer term public financing, the Ministry of Finance could reallocate the public debt portfolio toward

[2] A green paper entitled, "Managing Future Petroleum Reserves and Establishment of a Fiscal Rule and a Sovereign Wealth Fund" (Ministry of Finance, August 2018) informed the National Resource Fund Bill that was presented by the Minister of Finance to the Parliament and passed as the Natural Resourced Fund Act (2019).

longer term financial instruments and commence plans to establish a sovereign credit rating, in consultation with major credit rating agencies.

Sustainable management of land resources are the principal watchwords to guide and safeguard the country's natural wealth for future generations. From a land use planning perspective, the most important objective of the recommended national land policy is to articulate the priorities for land use and the criteria for determining best use. The institutional architecture of natural resource management in Guyana currently involves a wide range of independent statutory agencies whose mandates often put them in competition. A land policy may not be sufficient, however, to prevent all conflicts, so consideration should be given to designating an overarching land use planning system and institutional mechanism for inter-agency coordination, based on feasibility assessments. Strategic investments are also needed to improve land administration. Establishing a modern land information system at the Guyana Lands and Surveys Commission (GLSC) requires digitising the remaining paper-based systems, upgrading mapping and imaging capacity, and consolidating institutions. Investments are also prioritised for a comprehensive overhaul of geographical information systems (GIS).

Efforts to resolve the land rights issues of indigenous peoples must also continue as priority. The proposed revision of the Amerindian Act 2006 will be undertaken through an inclusive and consensual process based on free, prior and informed consent to address issues of concern to indigenous peoples and bring the Act in line with international obligations. This review must consider the broad question of rights to all lands, including customary lands, the powers of the minister and large-scale mining on indigenous lands, among other issues.

Natural resources define the country's natural wealth and require careful management, based on scientific research and a decision-making culture that is uncompromisingly evidence-based. These notably include minerals e.g. gold, diamonds, oil and gas); forests that provide important services in carbon sequestration and maintain traditional livelihoods; biodiversity that ensures healthy, functional ecosystem services and habitats for indigenous communities and flagship species (e.g. the jaguar, spotted caiman, the arapaima). The country's natural wealth must not be lost to economic growth but managed with a long term perspective that embraces the principles of sustainable development. Guyana is still however, ahead of the curve in that its natural and biological ecosystems are relatively intact. The country can learn from the past mistakes of others by mainstreaming conservation principles in public accounting systems, processes and operations as a matter of priority.

Support Economic Resilience

Economic competitiveness and resilience will be achieved through green and inclusive economic diversification. Resource extraction must now be guided by evidence-based methods, with improved technical and economic support to accomplish diversification and transformation plans. A key priority is to make mining standards more stringent and provide incentives for the adoption of modern and environmentally sound technology and more accurate prospecting. Sustainability in forestry and fishing must be driven by facilitating greater certification and improved access to markets. New legislation and regulations must carefully govern oil production including the Natural Resource Fund Act, supported by action plans (e.g. Oil Spill Contingency Plan) and guidelines established by the Cost Recovery

Committee, recruitment and training agencies. Clear consideration must also be given to how associated gas can best support the domestic economy – particularly the electrical power supply grid and network.

Agricultural producers will be assisted to overcome persistent barriers and to make the switch to more sustainable techniques (e.g. organic farming), while also expanding into processing, thus increasing value added. Managing the transition of the sugar industry is an immediate priority, alongside an assessment of the case for diversification into new products on former sugar estates. It is also essential to protect the social infrastructure on these estates even as private sector participation is integrated. Across the rice, fruits and vegetables sub-sectors, greater access to finance and equipment is needed alongside technical and vocational training to alleviate capital constraints and identify clear roadmaps for developing new products and technology-enabled production processes.

Supporting emerging and high value-adding service industries to compete in international markets is also essential for providing sustainable and decent employment opportunities for the local workforce. The Guyana Tourism Authority must play an active role in assisting private companies to develop and market tourism packages and hospitality services, have a say in critical infrastructure investments and improve international visibility of the Guyana tourism brand. Tax policy should reflect regional norms for business process outsourcing firms, while assessing the case for coordinated support schemes such as 'technology parks'. Both of these sectors have significant job creation potential which, in conjunction with effective social protection and services, can help reduce poverty and improve quality of life.

Improving the operating environment for businesses is an imperative. This requires monitoring of the performance of key public institutions and reviewing outdated business regulation. Clear systems for accountability and a greater drive for efficiency must be instilled within the judicial system, supported by capacity development where necessary. A central body could design and coordinate anti-corruption and transparency measures across Government, improving their penetration and effectiveness. Consolidating corporate taxes and providing additional tax support would reduce administrative costs for businesses, while streamlining the processes which underpin the provision of private sector credit would lower its price.

Building resilient Infrastructure, green towns and urban public spaces is the priority for all future development. The upgrades and designs of all new or existing networks, regional towns and public spaces must now conform to the priority for ensuring resilience against climate risk, minimising waste – particularly solid wastes – improving energy efficiency and reducing carbon emissions at every level. The Strategy describes proposals for an expansive hard infrastructure investment programme covering land, sea and air transport and telecommunications. Investments are needed to improve the road network in the coastal region, and south to the Brazilian border, with links to Bartica and Linden. The Georgetown Port requires urgent repairs and upgrades. Longer term priorities include constructing a container terminal in the West Bank area and a deep-water port in either the Berbice or Essequibo river. Communication capacity could be improved with a 'national fibre backbone' established through a series of extensions to the current Guyana Power and Light network. Free eGovernment-services could complement this, leveraging the communication network to extend the coverage of key social services.

Investing in sea defences, housing and amenities will dramatically increase the resilience and quality of life of Guyanese citizens, especially the poorest in society. Improving first line sea defences is the primary priority, both through mangrove restoration and the development and reconstruction of the sea wall. This will be bolstered by capacity expansions of the drainage network and better irrigation water management in the agricultural industry. Key investment priorities in urban settlements include ensuring basic access to electricity, water and sanitation across all existing and future housing developments, the completion of the Squatter Regularization Programme, and further construction of low-income housing. Regulatory reforms must stimulate private sector construction and low-income mortgage provision. The feasibility of formalizing the public transport systems and constructing a public sewage treatment plant should be assessed in the light of providing services that are safe, reliable and respectful of the citizenry, and that are free of pollution and unsightly solid waste, respectively.

Accelerating the transitioning to near 100% renewable energy sources from the country's natural wealth is the priority. The theory of change of the *Green State Development Strategy: Vision 2040* describes infrastructure development – including power generation from renewable energy sources, as a key driver of the economic transformation. A sector investment plan will set out the ambitious parameters and timeline for meeting the goal, which will be subject to continuous review and re-evaluation. The objective is to ensure that the population enjoys the cost benefits of producing energy entirely from its natural wealth, thus reducing demand for costly fuel imports. Feasibility studies will be conducted in the immediate term to assess and the identify the most appropriate and cost-effective supplies of renewable energy and at optimal sites. Reducing reliance on fuel imports also guarantees the important co-benefit of reducing carbon emissions in the power sector – the country's largest contributor (36%).

Another key objective is fortifying the national electricity grid. Given its historical unreliability, stabilising the grid in order to transmit and distribute a more reliable supply of energy will provide relief to residential and commercial clients in the short-to-medium term. Distributed or onsite generation is a more flexible technology suited to serving the dispersed communities of the hinterland in the short term and enabling the transition to renewable energy in the long term. Projects will focus on large commercial clients and new residences. The interim cap of 100kW installed capacity for independent power producers (IPPs) would need to be revoked to encourage greater uptake of solar PV and use of biofuels.

Improving energy efficiency is central to reducing energy demand. Investment in energy efficiency is prioritized across all economic sectors, including buildings and industry operations. Short-term measures focus on building awareness of and increasing end-user energy-savings that have attractive pay-back periods, while long-term measures entail large infrastructure improvements such as grid upgrading and modernisation to reduce losses. Adopting energy efficiency measures can also reduce carbon emissions, save money and generate important social and environmental co-benefits.

The energy sector will incentivise the shift to a more sustainable, low-carbon transport sector. Guyana must also prepare for new electric vehicular fleets that are emerging internationally from the major car manufacturers making the shift from 'dirty' fossil fuels. Priority incentive programmes will encourage adoption of new technologies, build awareness and encourage

behavioural change towards fuel diversification, use of non-motorized transport and road sharing programmes. Developing, testing and enforcing new vehicle and emission standards will help lower carbon emissions, control pollution and improve overall efficiency of the vehicular fleet in the long term. An aggressive modernisation programme, however, is required to curtail the anticipated growth of carbon emissions from the transport sector, which, after the power supply grid, is the nation's second highest source of carbon emissions.

Trade, investment and international cooperation provide the means for solidifying international relationships and accessing key markets. Reviewing national standards and foreign policy are important measures that will facilitate greater competitiveness and clear access to markets for Guyanese exporters, whilst also attracting foreign direct investment. Negotiations on the new CARICOM-Canada free trade agreement must be advanced, with full implementation of Guyana's commitments under the EU-CARIFORUM Economic Partnership Agreement and the WTO Trade Facilitation Agreement. A review could identify outstanding areas in which national standards can be aligned with international best practices, particularly concerning sanitary and phyto-sanitary (SPS) and environmental standards. The Guyana Office for Investment's new strategy for investment promotion and facilitation must ensure that the full potential of Guyana's investment framework is leveraged.

Build human capital and institutional capacity

A healthy, educated and socially cohesive population provides the foundation for human capital development. To that end, a key objective is to ensure equal and universal access to quality healthcare and education. All Guyanese have a right to good standards of living, health, education and well-being regardless of economic status or ethnicity. The priority is to eliminate persistent disparities in health and education outcomes between coastal and hinterland regions. For instance, the existing gaps in education outcomes between households in the upper- and lower-income quartiles and between private and public schools must be narrowed, while keeping children particularly between the ages of 14 and 16 years in school – the critical matriculation years – are essential for improving their chances of future success. In addition, the most vulnerable in society must be guaranteed access to quality healthcare and 'no one should be left behind' by the country's educational and health systems. Investments in the latter must continue to prioritise disease and illness prevention to pernicious diseases such as HIV/AIDS, tuberculosis and malaria, and chronic illnesses (e.g. stroke, heart disease), the incidence of which must be reduced and/or eradicated for the overall health and wellbeing of the citizenry.

A priority is to consistently recruit and retain top quality personnel in the health and education systems with better compensation packages, associated with performance measures. The health and education sectors must attract the most skilled in Guyanese society and elsewhere, in order raise and maintain standards and provide quality services. More sophisticated compensation packages tied to performance outcomes could help attract new talent while ensuring cost effective performance. Schemes should be implemented for teachers, school administrators and health professionals to limit brain-drain from these sectors. TVET students and institutions are essential for a transformed economy. As in secondary schools, the emphasis is on maintaining high enrolment levels and completion rates, good grades and fostering partnerships with the private sector for effective student learning and graduate placement.

Respecting and preserving indigenous knowledge and other traditions in medicine, well-being and educational methods are also priorities. As "first peoples", indigenous lifestyles and medicines are valued and treasured. Their rights to "free, prior and informed consent" in education and healthcare must be upheld.

Good governance and strong institutions require transparency and accountability in decision making. Better transparency and accountability benefits everyone. A comprehensive stocktaking of Guyana's transparency and accountability architecture needs to be undertaken, in partnership with civil society and include the political opposition, with a view to modelling best international practice. The Integrity Commission of Guyana must be adequately resourced to effectively carry out its mandate, following its decade-long hiatus. Concurrently, public procurement procedures must be strengthened and adopt sustainable public procurement guidelines in line with the 'green' agenda. The Public Procurement Commission (PPC) must lead a strategic review of the procurement system to identify bottlenecks and weaknesses with a view toward strengthening accountability and enforcement and ensuring equity, fairness and justice in procurement practices.

Improving public access to information and encouraging citizen participation will go a long way to building trust and confidence in public institutions and processes. As Guyana's Access to Information law is updated in the long-term, enhancing transparency and access to extractive industry information is a priority, as required under Guyana's Extractive Industry Transparency Initiative (EITI) obligations. The importance of citizen and interest group participation in decision-making is enshrined in Article 13 of the Constitution and will continue to be a feature of the country's development process. Civil society and citizen participation are powerful tools for enforcing public accountability. A strengthened, independent Judiciary will be better resourced to drive greater effectiveness in the development of its human resources, management systems and physical facilities.

A citizenry that enjoys good health and education standards and institutions that are capable and effective are central to Guyana's future development success.

Implementation

Implementing the *Green State Development Strategy: Vision 2040* involves phasing-in activities sequentially in order to prioritise investment and drive outcomes, appreciating the interdependency of strategic actions, along with the required and available capacity, skills and technology. In the short term, action will focus on strategic changes to current practices, preparatory activities such as the conduct of feasibility studies and upskilling to improve capacity across both the public and private sector. Changing mindsets for a 'green' agenda is an imperative in order to adopt new ways of thinking, designing and doing the routine, day-to-day tasks. For example, immediate short-term actions can be built around behavioural actions that monitor and measure the progress of programmes designed to reduce electricity use, promote innovation, facilitate incentives to phase out single-use plastic waste in public administration offices and commerce.

Public agencies will also need to accommodate the Strategy's implementation schedule in their work programmes. It is essential that lead and collaborating ministries and agencies appreciate that the lines of action require integrated approaches and collaboration in order to effectively accomplish the development objectives. Line ministries, specialised agencies and

commissions will need to adjust to carrying out new and assigned mandates and to instituting results-based reporting. Accountability is critical. All agencies should therefore strengthen their monitoring and evaluation programmes to ensure that these are robust enough to measure progress. Others without such must begin the process of integrate such practices into daily operations. There will be instances, however, when agencies fall short on delivering against a set target. While this can be anticipated for any emerging development process, the responsible agency should be continuously motivated to correct and continue the drive towards meeting the target in the successive reporting period.

In the short-to-medium term, actions will focus on large-scale infrastructure projects, building new (or strengthening existing) institutions and public services, and strengthening emerging skills and industries. Such a large expenditure program demands an advanced capacity to plan, procure and manage large projects. The social programmes and infrastructure investments needed to translate natural resource wealth into sustainable income growth are large and long term. Hence, aligning these with Guyana's current annual budgeting framework is challenging but necessary. With such high-value and complex projects, it can also be difficult to assess potential contractors' ability to deliver the work, monitor and manage progress, and ensure fiduciary responsibility; but these are the type of actions that public and private sector agencies are asked to adopt for the 'green' agenda.

To meet demand, the Government's ability to design, procure, manage and evaluate large investment projects will be strengthened, underpinned by a delivery unit for the design and management of critical projects. In the short term, it is a priority to consider contracting third party large-scale project management firms to alleviate pressure on the available capacity. In the longer term, there is an opportunity to strengthen the capacity of the Work Services Group (WSG) under the Ministry of Public Infrastructure and review the market competitiveness of current compensation packages.

A M&E secretariat for the *Green State Development Strategy: Vision 2040* must be established with authority and resources to track implementation. The work of the secretariat can be overseen by "Vision 2040 Council" appointed by Cabinet, and co-chaired by the Ministry of Finance and the Ministry of the Presidency, which hold, respectively, the power of the budget and the power of the Presidency. This unit can be supported by a core technical staff that reports directly to the Council on, *inter alia*, the pace of economic transformation and creation of jobs, as well as adherence to new governance and transparency standards, improvement of the social sector, carbon emissions and other national development priorities.

Guyana's Green Economy Modelling established the feasibility of implementing green economy initiatives. The system dynamics modelling evaluated the impact of the transfer of investments from business-as-usual (BAU) to green economy (GE) policies on a range of economic, social and environmental indicators. Four sectors were modeled – energy, forestry, agriculture and infrastructure – and the impact of selected green policies evaluated to the year 2040.

The model assumed an investment of GYD 1.05 trillion between 2018 and 2040, equal to 2.7 per cent of GDP. It shows that this allocation of resources leads to a GDP that is 28 per cent higher than BAU by 2040, and to an annual GDP growth of more than 1 per cent above BAU throughout the simulation. Furthermore, green investments lead to 15 per cent more jobs by 2040, and show positive economic returns for most sectors, primarily due to cost savings. The

transformation to a green economy requires certain enabling conditions, all of which are linked – directly or indirectly – to sustainable infrastructure. Indeed, the four sectors analysed in the model reflect the importance of infrastructure to Guyana's sustainable development.

Finally, it must be stated that with the extensive review process associated with the elaboration of the Strategy that provided feedback and review comments received from multiple local and international agencies and individuals, while the concerns are considered, it is acknowledged that not all can be included in the Strategy. The Strategy is a living document that will require periodic review of goals and targets over the course of its implementation. The consultation process must therefore continue and in the immediate term, support public and private sector agencies to understand the policy provisions and translate these into action and implementation plans.

The Strategy is also associated with multiple annexes that detail the secondary research that support the policy recommendations, along with many other reports provided by local and international institutions. These are also publicly available.

In the final analysis, a development strategy is as successful as the commitment demonstrated by the country's citizens, leaders, public and private institutions, who responded to the call to participate in the elaboration of the *Green State Development Strategy: Vision 2040*. It is a multi-stakeholder product and collective effort and its successful implementation will also reflect the commitment to achieving the development goal and a better future for all Guyanese.

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Annexes:

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List of Acronyms used in the text

ABD	Asian Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AMCAR	Amazon Caribbean Guyana Limited
AMI	Advancing Metering Infrastructure
ASIF	Avoid, Shift, Improve Framework
BAU	Business as Usual
BPO	Business Process Outsourcing
BTAP	Budget Transparency Action Plan
CAP	Conservancy Adaptation Project
CAPE	Caribbean Advanced Proficiency Examination
CARIBCAN	Caribbean Canada Trade Agreement
CARICOM	Caribbean Community
CD	Communicable Disease
CDB	Caribbean Development Bank
CET	Common External Tariff
CFO	Community Forest Organisation
CH&PA	Central Housing and Planning Authority
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CJIA	Cheddi Jagan International Airport
CNG	Compressed Natural Gas
CO_2	Carbon Dioxide
CPCE	Cyril Potter College of Education
CSEC	Caribbean Secondary Education Certificate
CSME	Caribbean Single Market Economy
CSO	Civil Society Organisation
DBIS	Demerara Berbice Interconnection System
DDL	Demerara Distillers Limited
DEI	Disaster Exposure Index
DHB	Demerara Harbour Bridge
D&I	Drainage and Irrigation
DoE	Department of Environment
DoEn	Department of Energy
DWT	Deadweight Tonnes
DSL	Digital Subscriber Line
EAC	European Agriculture Council
EDWC	East Demerara Water Conservancy
EE	Energy Efficiency
EEC	European Economic Community
EEZ	Exclusive Economic Zone
EFSA	Economically and Fiscally Sustainable Amount

EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EPMU	Expenditure Programming Management Unit
EPA	Environmental Protection Agency
ERP	Economy Recovery Program
ESD	Education for Sustainable Development
ESDCB	Education for Sustainable Development Policy Coordinating Body
ESIA	Environmental and Social Impact Assessment
ESRA	Electricity Sector Reform Act
EU-CARIFORUM	European Union Caribbean Forum Economic Partnership Agreement
EU - FLEGT	European Union Forest Law Enforcement, Governance and Trade
FAO	Food and Agriculture Organisation United Nations
FCPF	Forest Carbon Partnership Facility
FDI	Foreign Direct Investment
FID	Final Investment Decision
FMAA	Financial Management and Accountability Act 2003
FSC	Forest Stewardship
FSSD	Financing Solutions for Sustainable Development
FTA	Free Trade Agreement
GCF	Green Climate Fund
GCSDF	Guyana Civil Society Development Foundation
GDP	Gross Domestic Product
GE	Green Economy
GEA	Guyana Energy Agency
GEMS	Green Economy Modelling Study
GFC	Guyana Forestry Commission
GFCF	Green Finance Catalyzing Facility
GGB	Guyana Gold Board
GGMC	Guyana Geology and Mines Commission
GHG	Greenhouse Gas
GIB	Green Investment Bank
GIS	Geographic Information Systems
GITEP	Guyana Improving Teacher Education Project
GLDA	Guyana Livestock Development Authority
GL&SC	Guyana Lands and Surveys Commission
GMC	Guyana Marketing Corporation
GMO	Genetically Modified Organisms
GNBS	Guyana National Bureau of Standards
GO-INVEST	Guyana Office for Investment
GPL	Guyana Power and Light Inc.
GRA	Guyana Revenue Authority
GRDB	Guyana Rice Development Board

GSDS/CO	Green State Development Strategy Coordination Office
GRIF	Guyana REDD+ Investment Fund
GTA	Guyana Tourism Authority
GTIS	Guyana Trade and Investment
GTT	Guyana Telephone and Telegraph
GuySuCo	Guyana Sugar Corporation
GWI	Guyana Water Inc.
GYD	Guyanese Dollars
HA	High Ambition
HECI	Hinterland Electrification Co. Inc.
HFLD	High Forest Low Deforestation
HFO	Heavy Fuel Oil
HIV	Human Immunodeficiency Virus
ICT	Information and Communication Technology
IDA	International Development Association
IDB	Inter-American Development Bank
IFAD	International Fund for Agriculture & Development
IFM	Independent Forest Monitoring
IIC	Iwokrama International Centre for Rainforest Conservation & Development
IIRSA	Initiative for Integration of Regional Infrastructure in South America
ILO	International Labour Organisation
ILUP	Integrated Land Use Planning system
IMF	International Monetary Fund
IPED	Institute of Private Enterprise Development
ISP	Internet Service Provider
KFZ	Kingston Free Zone
KPO	Knowledge Process Outsourcing
KTEO	Kiloton of Oil-Equivalent
KV	Kilovolts
KW	Kilowatt
LA	Low Ambition
LAC	Latin America and the Caribbean
LCD	Least Developed Countries
LCDS	Low Carbon Development Strategy
LCR	Low Carbon Resilience
LED	Light Emitting Diode
LFO	Light Fuel Oil
LGBQTI	Lesbian, Gay, Bi-Sexual, Queer, Transgender, Intersex
LNG	Liquified Natural Gas
LPG	Liquefied Petroleum Gas
LUS	Lesser Utilised Species
LV	Low Voltage

MADC	More Advanced Developing Countries
MARAD	Maritime Administration Department
M&E	Monitoring and Evaluation
MEA	Multinational Environmental Agreement
MERD	Monitoring, Evaluating, Reporting and Development
MICE	Meeting/Incentive/Conferences/Exhibition
MICS	Multiple Indicator Cluster Survey
MIS	Management Information System
MMA-ADA	Mahaica-Mahaicony Abary – Agricultural Development Authority
MoA	Ministry of Agriculture
MoC	Ministry of Communities
MoF	Ministry of Finance
MoIPA	Ministry of Indigenous Peoples' Affairs
MNR	Ministry of Natural Resources
MoPH	Ministry of Public Health
MoPI	Ministry of Public Infrastructure
MoPT	Ministry of Public Telecommunications
MoSP	Ministry of Social Protection
MoTP	Ministry of the Presidency
MoU	Memorandum of Understanding
MSC	Marine Stewardship Council
MTEF	Medium-term Expenditure Framework
MRV	Monitoring, Reporting and Verification
MV	Medium Voltage
NAREI	National Agricultural Research and Extension Unit
NBAP	National Biodiversity Action Plans
NBSAP	National Biodiversity Strategy and Action Plan
NCD	Non-Communicable Diseases
NCS	National Competitiveness Strategy
NDIA	National Drainage and Infrastructure Authority
NDMA	National Data Management Authority
NGO	Non-Governmental Organisation
NGSA	National Grade Six Assessment
NICIL	National Industrial and Commercial Investments Limited
NLP	National Land Policy
NPPO	National Plant Protection Organisation
NPTA	National Procurement and Tender Administration
NRF	Natural Resource Fund
NRFA	Natural Resource Fund Act
NTD	Neglected Tropical Diseases
NWC	National Water Council
NWMC	National Wildlife Management Commission

OAS	Organization of American States
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OIM	Opt-in Mechanism
OSH	Occupational Safety & Health
O&M	Operations and Maintenance
PA	Protected Area
PAC	Protected Areas Commission
PAHO	Pan American Health Organisation
PAYE	Pay-as-you-earn
PCPMU	Policy Coordination and Programme Management Unit
PEFA	Public Expenditure and Financial Accountability
PES	Payment for ecosystem services
PFMAP	Public Financial Management Action Plan
PIMA	Public Investment Management Assessment
PPC	Public Procurement Commission
PPGHS	Package of Publicly Guaranteed Health Services
PPP	Public-Private Partnership
PSA	Production Sharing Agreement
PV	Photovoltaic
RAI	Remote Area Incentive
RAP	Recycled Asphalt Pavement
REDD+	Reduced Emissions from Deforestation and Forest Degradation
RIL	Reduced Impact Logging
R&D	Research and development
SBB	Small Business Bureau
SBC	Small Business Council
SDG	Sustainable Development Goal
SIDS	Small Island Development States
SFEP	State Forest Exploratory Permit
SFP	State Forest Permit
SG-SCS	Suriname – Guyana Submarine Cable System
SLDMP	Sustainable Land Development and Management Programme
SMEs	Small-to-medium sized enterprises
SPS	Sanitary and Phytosanitary Standards
SPU	Special Purpose Unit
SWF	Sovereign Wealth Fund
SSC	Social Cost of Carbon
TADAT	Tax Administration and Diagnostic Assessment Tool
TFA	Trade Facilitation Agreement
TJ	Terajoule
TSA	Timber Sales Agreement

TSC	Teaching Service Commission
TVET	Technical, Vocational, Education and Training
UG	University of Guyana
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNCBD	United Nations Convention on Biological Diversity
UNCTD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change
UNISDR	United Nations International Strategy for Disaster Reduction
VAT	Value Added Tax
VPA	Voluntary Partnership Agreement
WCL	Wood Cutting Leases
WCMC	Wildlife Conservation and Management Commission
WDWC	West Demerara Water Conservancy
WHO	World Health Organisation
WSG	Work Services Group
WTO	World Trade Organisation
WUA	Water Users Association
WWF	World Wildlife Fund

Chapter 1: Modeling Guyana's Green Economy[3]

1.1 Introduction

Guyana is well endowed with natural resources: forests, water, land including such as fertile agricultural lands, and minerals such as bauxite and gold. The country has an extensive tropical forest cover of more than 87 percent of the country's territory, with low rates of deforestation. Agriculture and natural resources have traditionally been important for economic activity in Guyana. In 2016, agriculture, forestry, fishing and mining accounted for about one third of GDP, while gold mining was growing rapidly and accounted for 48 percent of exports. Bauxite, sugar, rice, shrimp and timber are also important export sectors.

However, growth in Guyana's Gross Domestic Product (GDP) has been highly volatile over the past decades due to geopolitical events, natural disasters and global commodity price fluctuations. Given the over-reliance on primary commodities for economic development, the economy has had little opportunity for diversification. According to the World Bank, Guyana has an unemployment rate of 12 per cent, with few opportunities for young people to find jobs. As a result, emigration is significant. In 2013, it was reported that 463,000 Guyanese resided out of the country, against only 11,000 foreign nationals in Guyana. Since 1992, the average emigration per year has been 10,000 individuals, making Guyana one of the Caribbean nations most affected by emigration. Its emigration patterns have led to a 'brain drain', as many highly-skilled professionals are among those who have decided to leave the country.

The recent discovery in 2015 and 2018, of very significant oil reserves has put Guyana at a critical point in its history, providing it with the opportunity to shift its development path, modernize its economy and transform the lives of its citizens. In order to capture the full benefit of its oil reserves, it is imperative for Guyana to chart its course of development in a way that is inclusive and to improve the sustainable management of the country's natural endowments.

The *Green State Development Strategy: Vision 2040*, provides the comprehensive development policy to guide public investment over the next 20 years. Its objective is broader than Guyana's past development strategies and captures a more holistic view of the country's social, economic and environmental well-being, in line with the United Nations' Sustainable Development Goals (SDGs). In particular, the Strategy is transformational. It not only aims to foster sustained economic growth that is low-carbon and climate-resilient (consistent with the Low Carbon Development Strategy) but also to promotes social cohesion, good governance and careful management of finite natural resources in accordance with green economy (GE) principles.

For this reason, a modelling exercise was conducted to assess the outcomes of selected green economy investments in Guyana, and to support elaboration of the policy recommendations of the *Green State Development Strategy: Vision 2040*. Research studies conducted by consultants coordinated by UN Environment (see Annexes) also provided the basis for policy formulation. Most importantly, an extensive national consultations process, featuring seven

[3] The detailed economic modelling exercises are explained in "Guyana Green Economy Modelling Study Synthesis Report" by Simon Lobach, October 2018, which summarizes the original economic modelling report: "System Dynamics modelling for the Green Economy in Guyana" by Andrea Bassi, Technical Final report, August 12, 2018.

thematic expert groups comprising 136 private, public and civil society representatives, and 33 consultation meetings convened across Guyana's ten administrative regions. The national consultations that lasted from January through September 2018, set the policy direction and priorities of the Strategy, thereby ensuring a 'bottom-up' participatory effort.

The chapters that follow outline the more than two hundred policy priorities beginning with a justification below, for investing in green economy initiatives.

1.2 Investing in the Green Economy

Green economy investments have many facets and are capable of synergistically supporting goals of economic development, social empowerment and improvement of the quality of ecosystems. For instance, investments in resource efficiency can lower the extraction of natural resources and consequently, pressures on the natural resource base. Simultaneously it could free up resources for consumption and investment, triggering technology adoption and leading to employment creation.

However, the socio-economic and environmental dynamics triggered by green economy investments are complex. This is because investment outcomes include direct, indirect and induced impacts across sectors, affecting social, economic and environmental indicators, as well as different economic actors. These outcomes can also change over time. This complexity leads to synergies, as mentioned above, but could also lead to the emergence of undesirable impacts, such as in the case of a rebound effect[4].

The model analysis should be considered exploratory, as it focused only on the four prioritised sectors (agriculture, forestry, energy and road transport infrastructure) and macroeconomic performance. The outcomes of green economy investments in education, health, and many other economic sectors were not modelled in this initial exercise. As a result, both the investment required and the socio-economic and environmental outcomes of the implementation of these green economy investments are conservative.

Guyana's Green Economy Modelling Study (GEMS) has been conducted to assess the economic, social and environmental impacts of a selection of such green policies. GEMS makes use of System Dynamics modelling to test how a transfer of investments from Business-as-Usual (BAU) to Green Economy (GE) policies affects a range of economic, social and environmental indicators. For the purpose of elaborating the Strategy, four priority sectors were identified, where the impact of selected green economy policies were evaluated to the year 2040.

System dynamics models are used to create simplified sectoral models that are based on well established sectoral modelling methods, with the advantage of showing systemic impacts (across sectors and economic actors) of policy interventions. The use of other approaches is recommended in order to gain a more complete understanding and a more accurate quantification of the impact of green economy policies and investments at both the multisectoral and thematic levels.

[4] An example is reduction in expected gains from new technologies that increases the efficiency of resource use, because of behavioral or other systemic responses.

The results of this initial effort are presented below and have helped to guide the elaboration of the policy recommendations of *Green State Development Strategy: Vision 2040*, shedding light on, and making more tangible, the feasibility of green economy investments in Guyana.

1.3 Model Scenarios and Assumptions

The Guyana Green Economy System Dynamics model is used to simulate several Green Economy (GE) scenarios and compare them against the Business-as-Usual scenario (BAU). The BAU scenario is defined as a "no action scenario", in which historical trends continue into the future. GE scenarios are simulated to assess the impact of the individual interventions and targets, as well as their combined implementation.

Table 1 presents the assumptions used for the sectoral GE scenarios. Developments are projected to the year 2040 and compare a BAU scenario with a GE scenario both in a setting of low and high ambition. Apart from comparing the BAU scenario with a GE scenario, both scenarios are also considered in "High Ambition" (HA) and "Low Ambition" (LA) cases. The high ambition scenario includes: (i) higher expansion of crop land (100% in the HA case and 25% in LA case); (ii) high ambition efforts to adopt sustainable farming practices (36% instead of 10%); (iii) lower post-harvest losses (with a reduction of 20% instead of 10%); (iv) higher energy efficiency improvements for electricity consumption (5% per year instead of 2% per year).

Both the low-ambition BAU and the low-ambition GE scenario for example, assume agricultural land expansion of 25% between now and 2040, but the GE scenario, on top of that, assumes 10% of the agricultural sector will practice sustainable farming and reduce post-harvest losses by 10%, while 40% of the forestry sector will practice Reduced Impact Logging (RIL). Explaining the model's assumptions further, it assumes that land expansion could reach 25% or 100%. As a result, two simulations were created for both the BAU and GE scenarios, to ensure that these scenarios are compared coherently (i.e. using the same underlying scenario assumptions, with the only difference being policy ambition and related investments). For this reason, Table 1 distinguishes two different BAU scenarios, with land expansion being the only difference between them. The numbers assumed in the table for the Modelling Study are then used as the basis to calculate their impact on other segments of the economy[5].

[5] The full technical report of Guyana's Green Economy Modeling Study includes a variety of models and scenarios for the different sectors, but the results are presented for the four scenarios represented in Table 1.

Table 1: Scenario assumptions for Guyana's Green Economy Modelling Study

Ambition Levels	Scenarios	Land expansion	Share sustainable farming practices	Post-harvest treatment	Road construction	Reduced Impact Logging (RIL)	Additional value added RIL	Deforestation	Expansion of power generation capacity	Annual EE improvement	Oil production, barrels per day, bbl/ day
Low (LA)	BAU*	25%	0%	0%	1000km	0%	0%	Yes	Case 1	1%	Steady (120,000)
	GE**	**25%**	**10%**	**10%**	**1000km**	**40%**	**30%**	**No**	**Case 1**	**2%**	**Steady (120,000)**
High (HA)	BAU	100%	0%	0%	1000km	0%	0%	Yes	Case 1	1%	Steady (120,000)
	GE	**100%**	**36%**	**20%**	**1000km**	**40%**	**30%**	**No**	**Case 1**	**5%**	**Steady (120,000)**

Note: * BAU is business as usual; GE is green economy; EE is energy efficiency.

The different policy interventions that investments will be directed to in a GE scenario are listed in the table header e.g. sustainable farming, post-harvest treatment, reduced impact logging (RIL), no deforestation, and an improvement in energy efficiency (EE). The policy of having 40% of the forestry sector practicing RIL has been modelled under two different assumptions: one in which the price of timber remains unchanged by the production method, and one where a price premium of 30 per cent is obtained as a result of the sustainable production method. Oil production and road construction are assumed to be stable across the four scenarios. The factor – land expansion – which refers to increasing cropland available for agricultural production, is assumed not to be different in a BAU or a GE scenario, but to depend solely on the level of ambition for the growth of the agricultural sector. The column "expansion of power generating capacity" refers to the two scenarios for power expansion that were modeled, among which Case 1 was deemed to be more realistic (Case 2 is discussed in the full technical report).

1.4 Modelling Results

The results of the green economy modelling exercise, summarized in Table 2, show that the *simultaneous implementation* of inclusive green economy interventions in the four key economic sectors (agriculture, forestry, energy and road transport) require additional investments of GYD 1.05 trillion between 2018 and 2040, equivalent to 2.7% of GDP. The green economy model predicts that these investments will stimulate economic growth (GDP is 28% higher by 2040, with annual GDP growth being 1% above 'business-as-usual' scenarios throughout the simulation), create employment (with 15% more jobs by 2040), but could also lead to higher energy consumption and emissions. In addition, green economy investments show positive economic returns for most sectors primarily due to cost savings.

Table 2: Summary of the Economic Modeling Results

	Green Economy (GE) Scenarios (millions GYD)				
	Agriculture	**Forestry**	**Energy**	**Roads**	**Total GE**
Investments					
Energy efficiency			469 146		497 354
Irrigation	298 209				293 629
O&M Irrigation	17 048				16 112
Sustainable agriculture	102 354				102 354
Sustainable forestry		13 051			13 051
Forest maintenance		91 858			91 858
Infrastructure				34 210	34 210
Infrastructure maintenance				87	87
Total investments	***417 611***	***104 910***	***469 146***	***34 297***	***1 048 656***
Costs					
Investment power generation			-156 657		-209 671
O&M Power generation			-11 988		-48 636
Water expenditure	-74 260				-74 260
Electricity expenditure			-122 952		2 391 343
Material expenditure				-89 525	-89 525
Stormwater management				-1 255 966	-1 255 966
Nitrogen removal cost				-498	-498
Social costs of carbon	-4 002		-22 072	-5 279	-4 741
Total costs	*-78 263*	*0*	*-313 669*	*-1 351 269*	*708 044*
Benefits					
Agriculture GDP	4 123 018				3 916 858
Forestry GDP		-41 484			-37 427
Energy impact on GDP			28 983		28 983
Additional carbon sequestration	60 647 354	20 461 493		637 803	80 630 763
Discretionary labor income	266 039	-44 636	-5 140	-82	459 700
Residual GDP impacts					1 710 837
Total benefits	*65 036 411*	*20 375 373*	*23 843*	*637 720*	*86 709 713*

	Green Economy (GE) Scenarios (millions GYD)				
	Agriculture	**Forestry**	**Energy**	**Roads**	**Total GE**
	Investments				
Total net benefits	**64 540 538**	**20 270 464**	**-758 972**	**-747 846**	**86 369 101**
Net benefits (ex carbon sequestration)	*4 049 709*	*-191 029*	*-131 634*	*1 316 889*	*4 322 250*

Total avoided costs add up to GYD 708 billion, while the added benefits (including stronger economic activity and carbon sequestration) reach GYD 86.7 trillion. Overall, even when not considering carbon sequestration, since this is not a direct material cost (in the 'business-as-usual' scenario) nor a benefit (in the green economy scenario), total net benefits reach GYD 4.3 trillion or 4-times the investment required. It is worth noting that this estimation considers a high cost assumption for energy efficiency, reduction in labour intensity and productivity for reduced impact logging and so the performance of green economy interventions may be better than what is presented here. However, with very high costs for water run-off and nutrient removal, the performance of green economy interventions could also be worse than what is presented here.

1.4.1 Agriculture

Agriculture is one of the most important sectors of the economy. In 2012, agriculture accounted for approximately 21 per cent of GDP, employed about 33 per cent of the country's workforce and contributed almost 40 per cent of the national export earnings. Agriculture and agro-processing in Guyana consist mainly of sugar, rice, and fruits and vegetables, and to a lesser extent, fish farming. Agricultural activities occupy about 8.5 per cent of the national land area mainly concentrated along the narrow low-lying coastal plain where the most fertile non-forested lands exist. The coast is equipped with drainage and irrigation (D&I) systems that include about 500 km of main irrigation canals, 1,100 km of secondary canals, 500 km of main drainage channels, and 1,500 km of secondary drainage channels supported by kokers and sluices.

Due to the risk of floods on the coast, agriculture development will require investments in drainage and irrigation, which will increase production costs. Other than floods and limited technical capacities, other barriers to agricultural development in Guyana include limited access to finance, high interest rates on loans and short pay-back periods. At present, there is limited incentive for commercial production and export of organic foods, and except for heart of palm, organic farming in Guyana is at subsistence levels. Opportunities exist for commercialised organic farming and organic food production, which are prioritised by the Ministry of Agriculture[6]. The implementation of green agricultural practices (increasing sustainable practices to 10 per cent in the GE-LA and 36 per cent in the GE-HA scenario) increases agriculture production. Agricultural output in the GE-LA scenario is 15 per cent

[6] The activities prioritised for organic agriculture as outlined in the strategy include: i) to implement training programmes for integrated soil management using organic matter inputs; ii) to increase by 50% the amount of natural organic products coming from the hinterland; iii) to develop a national organic certification system; and iv) to identify and promote the production of natural stands of organic cocoa and honey in the hinterland areas. See the Ministry of Agriculture's National Strategy for Agriculture 2013–2020.

higher than in LA-BAU, and the HA-GE scenario exceeds HA-BAU at 43 per cent. Rice is projected to be the largest contributor in terms of absolute production. The model demonstrates that value added is influenced by agricultural production value add, which is assumed to be higher for sustainable production due to premium prices for certified production.

Average land productivity, measured as yield per hectare in the BAU scenario, is 4.28 tons per year in both the LA-BAU scenario and the HA-BAU scenario. In the LA-GE and HA-GE scenario, however, the average yield per hectare increases to 4.75 and 5.32 tons per year, respectively. This increase is 11 per cent in the low-ambition case and a 24.3 per cent in the high-ambition case when compared to the respective baseline.

The real GDP of the agriculture sector is projected to increase to GYD 375.2 billion (LA-BAU) and GYD 719.2 billion (HA-BAU) by 2040. Between 2018 and 2040, the average growth rate of the agriculture real GDP in the LA-BAU and HA-BAU scenarios is 3.4 and 6.2 per cent, respectively. This is due to the increase in land productivity (driven by sustainable practices and the expansion of irrigation) and higher access to the road network (a synergy created with investments in roads). Both GE scenarios assume the implementation of drip irrigation on 20 per cent of total cropland. Efficient irrigation reduces annual water use by 12 per cent in the LA-GE scenario and 11 per cent in the HA-GE scenario.

Between 2018 and 2040, agriculture is projected to provide employment to 95,000 people in the LA-BAU scenario and 116,000 people in the HA-BAU scenario. In the LA-GE and HA-GE, employment is 4 and 15 per cent higher, respectively.

1.4.2 Forestry

In general, the sector is heavily influenced by the approval of concessions (an exogenous input in the model) and the expansion of infrastructure. Reduced impact logging (RIL) improves carbon storage per hectare, contributes to the reduction of logging-related GHG emissions and reduces impact. At the same time, RIL concessions are less productive and less labour-intensive, reducing total production.

The two GE scenarios assume the implementation of RIL alone (LA) and the implementation of RIL with additional 30% value added for forestry products (HA). The forest protection and conservation practices assumed for GE scenarios require additional investments of GYD 104.9 billion between 2018 and 2040. Specifically, cumulative investments of GYD 13.05 billion are required for the adoption of RIL and the obtainment of RIL certification for 1.88 million hectares (40%) of forestry land. The maintenance costs of RIL concessions between 2018 and 2040 total GYD 91.9 billion by 2040. The implementation of RIL practices reduces forestry GDP below the baseline and leads to cumulative reductions in GDP of GYD 41.5 billion between 2018 and 2040. The possible lower labour intensity of RIL concessions could cause employment in forestry to shrink.

1.4.3 Energy

Guyana's energy demand is driven by population growth and economic development, as well as the price of energy and the technology (energy efficiency). Total energy demand is projected to increase slightly during the period 2016–2020. After 2020, the beginning of oil extraction is projected to stimulate GDP growth, which will lead to a higher energy demand.

Total energy demand in the BAU scenario increases to 118,400 TJ per year in 2040. Energy demand in 2040 under the LA-GE and HA-GE scenario is 1 and 4 per cent lower, respectively.

The total demand for electricity is projected to reach 2.9 million MWh by 2040. For the current projections, a transmission loss of 28.5 per cent is assumed. The projections for electricity demand are comparable to the high-demand scenario indicated in the updated expansion study[7].

Investments in energy efficiency in the GE scenarios reduce electricity demand in 2040 by 18 and 54 per cent in the LA-GE and HA-GE scenario, respectively. Additional investments in renewable technologies cause the generation cost per MWh to decline by GYD 632 per MWh between 2018 and 2040, which is equivalent to a decline of USD 3.1 per MWh. In the LA-GE and HA-GE scenarios, the cost-reflective price in 2040 is 9.5 and 7.4 per cent lower compared to the respective baseline. Cumulatively, the improvement in energy efficiency requires total additional investments of GYD 469.1 billion by 2040. This estimate uses a high-cost assumption. This more conservative assumption leads to total costs of GYD 235 billion by 2040.

On the other hand, the reduction in capacity requirements yields cumulative savings of GYD 156.7 billion from investments in power generation capacity between 2018 and 2040, which is equivalent to annual savings of approximately GDY 7.12 billion over 22 years. Because of lower capacity, cumulative O&M costs of power generation are GYD 12 billion lower compared to the BAU scenario. In summary, the implementation of energy efficiency measures yields net savings of GYD 168.6 billion from avoided investments in capacity and avoided O&M expenditure.

Reductions in energy consumption and the expansion of renewable capacity lead to a reduction in energy-related CO_2e emissions. Projections indicate that annual CO_2e emissions are 2 and 5 per cent lower in the LA-GE and HA-GE scenario, respectively. Between 2018 and 2040, implementing energy efficiency measures in the LA-GE and HA-GE scenarios yield cumulative avoided emissions of 1.31 million tons and 3.73 million tons respectively, which is equivalent to average reductions of approximately 59,500 tons and 169,700 tons per year over 22 years. The reduction of CO_2e emissions translates in a reduction of the social cost of carbon (SCC) from energy.

1.4.4 Road Transport Infrastructure

In the BAU scenario, the total capacity of established road infrastructure is projected to reach 3,500 km in the LA-GE and up to 4,360 in the HA-GE scenario, by 2040. This represents a net increase of at least 1,200 km compared to 2016 and is the result of new projects, as well as higher demand (driven by population growth and the expansion of urban centres).

The use of Recycled Asphalt Pavement (RAP) reduces the amount of virgin raw material required for road construction processes by approximately 13.5 million tons, or 16.2 per cent. Further reductions in virgin materials stem from maintenance, where material savings of 12.8 per cent or 40,400 tons can be achieved through the use of 15 per cent RAP. In addition, the use of permeable surfaces and stormwater management infrastructure reduces stormwater

[7] *Update of the Study on System Expansion of the Generation System;* Brugman SAS. 2018, Government of the Cooperative Republic of Guyana.

and pollution runoff from the road by approximately 50 per cent, which reduces maintenance efforts and hence the additional costs for stormwater management.

Net savings of GYD 55.32 billion can be realized through the use of 15 per cent RAP during the construction and O&M phase of the road. The use of more expensive machinery causes capital cost to be GYD 34.2 billion higher compared to the BAU scenario. At the same time, the reduced use of virgin material yields savings in material cost of GYD 89.52 billion over 22 years, or GYD 4.07 million per kilometer per year on average. In addition, green roads reduce by design the amounts of stormwater and related pollutant loadings, which reduces the overall risk of accidents and requires less maintenance in the longer run.

1.4.5 Education and Health

The above-mentioned modelling results should take into consideration the boundaries of the model – not only the sectors and indicators that are included in the model but also, or even more importantly, the ones that are not taken into consideration. Two sectors that are critical for Guyana are education and health. although they are not explicitly featured in the model, some indirect impacts can be identified.

Education can impact simulation results in several ways. Firstly, the economic stimulus provided by green economy interventions could increase budgetary expenditure for education infrastructure. Subsequently, a higher number of schools and teachers would then increase access to education. Third, the resulting improvements in the level of education would increase labour productivity and provide additional stimulus for the growth of the industrial and services sectors. Fourth, improved literacy and knowledge would increase technology uptake (e.g. reducing resource and energy intensity). On the other hand, lack of investments in education and the unavailability of qualified teachers in the short run could limit the forecasted impact of green economy interventions.

As a result, it is worth considering when reading the results presented in the preceding sections that there are three potential positive feedback loops (e.g. contribution of health and education to labour productivity and employment creation; to economic growth; to increased technology uptake and higher resource productivity) that are not included in the model but have the capacity to improve the forecasts. One bottleneck – the lack of skilled personnel – has been identified. This bottleneck has not been explicitly addressed but may lead to more conservative results.

1.5 Summary of Main Findings

The transformation to a green economy requires certain enabling conditions, all of which are linked – directly or indirectly – to sustainable infrastructure. Indeed, the four sectors analysed in the model reflect the importance of infrastructure to Guyana's sustainable development. The road transportation and energy sectors directly involve the development of new infrastructure systems. The other two sectors – agriculture and forestry – are very closely linked to infrastructure. Sustainable forestry and agriculture practices must be supported by sustainably designed and operated roads and irrigation systems. In the case of forestry, investments made into reduced-impact logging will also serve as investments into ecological, or nature-based infrastructure that provides important services such as water retention, carbon sequestering, habitats for biodiversity and land stabilisation, among others.

Ensuring that investment in green infrastructure is strategic and effective requires an integrated, systems-level approach to the planning, design, financing, developing, and operating of public infrastructure. As the modelling analysis demonstrates, there are many interlinkages between the sectors, their infrastructure systems and other elements of sustainability (e.g. interlinkages between different SDGs). An integrated approach to developing sustainable infrastructure takes these into account from the earliest planning phase all the way through to the operation phase. Rather than assessing only certain aspects of sustainability at the project or even sector-level, integrated approaches assess the sustainability of the national infrastructure mix as a whole system, and allow policymakers and planners to integrate social, economic and environmental sustainability measures in ways that take advantage of opportunities for synergies and help to maximize positive impacts and minimize negative ones.

Even though education and health are not explicitly featured in the model, some forecasts about the potential impacts of GE interventions in these sectors can be made. For example, increased budgetary expenditure for education infrastructure under a GE scenario could increase the number of schools and teachers, improve access to education, and increase labour productivity. This would stimulate the industrial and services sector, while improved literacy could lead to an increased technology uptake. Similarly, GE interventions could also increase budgetary expenditures in the health sector; but in this sector a bottleneck has been identified, as Guyana is facing a shortage of qualified health personnel. Strategic investments in the health sector would be required to tackle this bottleneck, to increase labour productivity in the sector, and to reduce per capita health expenditure.

In order to ensure the redirection of strategic public investments into greening activities so that the development of Guyana follows a path that leads to long-term growth as well as its inclusivity and sustainability, the *Green State Development Strategy: Vision 2040* can be called one of the enabling conditions for economic transformation. The Strategy has identified a number of key actions, which are oriented to the aspirations of the green economy modelling scenarios, emphasising, *inter alia*:

- Establishment of the Natural Resource Fund Act and adoption of a medium-term expenditure framework to more strategically, transparently and effectively manage oil revenues.
- Switching to lower-cost, renewable and reliable energy sources to support business operations and achieve energy access and security.
- Advancing in the use of more effective and coordinated management of natural resources.
- Diversifying Guyana's economic base and moving to higher value-add products with decent jobs for all.
- Investing in people, communities and health and education to ensure that the citizenry can have access to the best opportunities to prosper, prepare and participate in emerging economic opportunities.

Reinvesting part of the oil wealth into the adoption of sustainable policies in actions that impinge directly on livelihoods are cost-effective in the long run and will give effect to the

priorities for social inclusiveness and decent jobs. In order to fully reap the benefits, investments are also needed in the country's legal and regulatory frameworks. The investment priorities of the Strategy are described in the sections that follow.

Chapter 2: Manage Natural Resource Wealth

2.1 Introduction

Guyana's finite natural resources – land, water, forests, bauxite and other minerals – have been the cornerstones of its economy for decades. More recent and vast discoveries of oil and gas are likely to become hugely significant in the future. While today these resources abound, the country bears the responsibility to manage with future generations in mind. Guyana is in a relatively unique position in that its resources are still largely intact, and the country has the opportunity to avoid situations of rapid resource depletion and degradation through proactive management to ensure that the benefits provided today are sustained for future generations.

Managing well, the country's natural resource wealth requires a capacity to work across sectors and agencies; application of integrated, evidence-based methods into decision-making processes; monitoring and enforcement of market-based rules among private operators, and incentives that support innovation and ethical practices. Without integrated action, resources will continue to be exploited in business-as-usual approaches, and the full cost of potential resource exhaustion may not be reflected by prices or markets. As Guyana's economy grows and diversifies, sustainably managing its natural resources will require a willingness to transition to more modern and efficient practices.

The most significant challenge in the short term is the management of Guyana's oil and gas wealth. These resources are located offshore in deep water environments that require sizable investment, expertise, experience and technologies, all of which may not be available locally. The revenues earned through negotiated production sharing agreements are important for the country's economic development and must be reliably quantified for the country's future development. Other challenges are keeping a check on carbon emissions, avoiding oil spills and other operational risks.

Managing natural resources also extends to use of renewable resources – freshwater, sunshine and wind, which are abundant. As energy sources, the latter two are under-utilised (see Chapter 3). Ecosystem and biodiversity resources arise from Guyana's lands, soils, rivers, forests and wildlife. These underpin the country's resource base and provide intrinsic benefits enjoyed by indigenous and rural communities, nature seekers and eco-tourists, whilst supporting agricultural production. Other benefits relate to opportunities for earning payments for ecosystem services and financing from other mechanisms such as REDD+[8] that encourage countries to preserve large tracts of healthy forests for their global benefits as effective carbon sinks.

Managing Guyana's natural resources therefore, begins with an understanding of the country's total 'wealth'. These provide and an appreciation of the sustained benefits to be enjoyed by citizens now and into the future. A country's wealth is the sum of its produced[9] (or

[8] Reduced Emissions from Deforestation and Forest Degradation.

[9] According to the World Bank, produced capital includes machinery, equipment, buildings, residential/non-residential urban land (see: "The Changing Wealth of Nations: Building a Sustainable Future",, 2018 Lange et. al, The World Bank, Washington D.C.).

manufactured) capital, natural capital[10], human capital[11] and its net foreign assets. When considering 'inclusive' wealth, the human dimension of wealth assumes parity with, if not priority over the other dimensions. All wealth has value; and the extent to which a country can establish a full accounting of its wealth (i.e. natural + human + invested capital) is the extent to which future generations can be assured of enjoying its benefits. Much more will be said about human wealth in Chapter 4.

Promoting sound fiscal policy is necessary for transparently governing how the country's natural wealth is managed, shielding it from mismanagement and misuse and channeling towards investments in infrastructure, health, education and wellbeing (see Chapter 4). Wealth should be carefully distributed across competing economic uses considering the long-term sustainability of Guyana's Natural Resource Fund and the social rate of return on investments. Funds should be introduced into the economy at a predictable and controlled pace and used in line with stated long term development ambitions, alleviating critical constraints to Guyana's economic growth and development.

In parallel to this, broader fiscal policy should provide a transparent and efficient redistribution system, that supports business and encourages sustainable consumption and production. The objective is that the fiscal framework should provide corrective incentives to steer production and consumption away from harmful and damaging goods and services, to sustainable alternatives.

2.2 Development Objective A: Sound Fiscal and Monetary Policy

2.2.1 Overview

Oil and gas production will dramatically change the fiscal landscape and become the largest single source of public revenue. Estimates of oil reserves and expected daily production vary between different sources and Government has as yet, signed only one production sharing agreement. The International Monetary Fund (IMF) estimates that by 2023, oil production could reach 250,000 barrels per day and public revenue from oil exports could exceed GYD 160 billion, roughly equal to total central Government revenues of 2015. Other reports[12] suggest production, oil prices and public revenue could be even higher. However, as the impacts of climate change become more acute, there is a risk that global efforts to tax carbon and reduce fossil fuel consumption eventually undermine the market price of oil and gas, and hence, Guyana's reserves.

Oil revenues will ease pressure on the public budget and facilitate an expansive new program of expenditure, but also place significant demands on public institutions to manage new economic risks. International experience shows that natural resource wealth does not necessarily lead to broad-based improvements in development and, in some cases, can introduce damaging volatility to fiscal revenue and economic performance. Venezuela and Trinidad and Tobago illustrate the risks of windfall resource wealth; expenditure closely tracks

[10] Natural capital incudes energy resources e.g. oil, gas, coal, minerals, agricultural land including cropland and pasture land. Source: Op. Cit. note #7.

[11] UN Environment describes "human capital" as the sum of knowledge, aptitude, education and skills (ref: "Inclusive Wealth Report", 2018.

[12] See "Annex 1(e) Analytical Evidence to Support Guyana's Green State Development Strategy: Vision 2040 - Fiscal and Monetary Policy.

oil revenue, which in turn, closely tracks international oil prices. Efficient and stable public spending require regulatory checks and balances upheld by strong and accountable institutions[13].

Such a large expenditure program needs an advanced capacity to plan, procure and manage large projects**.** The social programs and infrastructure investments needed to translate natural resource wealth into sustained income growth are large and long term. Aligning these with Guyana's current annual budgeting framework is challenging. With such high-value and complex projects, it can also be difficult to assess potential contractors' ability to deliver the work, monitor and manage progress, and ensure fiduciary responsibility.

In addition, accelerated fiscal expenditure will raise domestic inflationary pressure, potentially harming the international competitiveness of export industries. If the revenues from oil exports are introduced to the Guyanese economy, there will be an unprecedented increase in demand for goods and services. If there is not sufficient productive capacity to meet this demand, domestic prices can rapidly increase, also placing upward pressure on the nominal exchange rate. Together, these impacts have the potential to significantly increase the price of Guyanese exports relative to the rest of the world's, lowering the competitiveness of Guyana's key economic industries.

2.2.2 Outcomes

By 2040, fiscal and monetary policy will:

- Transparently manage oil wealth to secure a stable future source of public revenue;
- Channel oil wealth into productive public investments to deliver sustainable development benefits for the whole of society and into the future; and
- Provide citizens and businesses with confidence that prices will remain stable in the long term, supporting the business environment.

2.2.3 A1 Fiscal Policy

A1.1 Fully implement the Natural Resource Fund Act (NRFA) and establish the institutional arrangements required for the full operation of the Fund. The Natural Resource Fund Act (NRFA) was recently passed in the Parliament. The NRFA will provide additional detail on the operation of the Fund, such as how resources will be distributed across the fund's three objectives and how funds allocated to each objective will be safeguarded for that purpose.

A1.2 Instigate the selection process for private fund managers operating within the NRF. Following the Act's passing in the Parliament, the next step is appointing the Public Accountability Oversight Committee and undertaking preparation activities for the recruitment of private fund managers. The drafting of management agreements and Investment Instructions must also begin immediately.

A1.3 Prepare national budget operations for the integration of an extensive and long term social investment program, including transitioning to a Medium-Term Expenditure Framework (MTEF). To support this, the priority is to move from the current annual budgeting

[13] See Chapter 4 "Build Human Capital and Institutional Capacity".

framework to a Medium-Term Expenditure Framework established in either law or an officially adopted policy. The framework will detail over what length of time expenditure ceilings are set, and how frequently these are revised. To support longer term public financing, the Ministry of Finance could reallocate the public debt portfolio toward longer term financial instruments and develop a strategy, in consultation with major credit rating agencies, to establish a sovereign credit rating. These measures will proceed in the context of a vigorous effort to strengthen the budgetary process in the context of the Budget Transparency Action Plan. In the long term, this could also look to incorporate natural capital accounting techniques to better understand the value Guyana's natural assets provide and hence, more accurately budget for their protection and expansion

A1.4 Strengthen the ability to design, procure, manage and evaluate large investment projects, and establish a delivery unit for the design and management of critical projects. In the short term, the priority is to consider contracting third party large-scale project management firms to alleviate pressure in the short-to-medium term. In the longer term, there will be opportunity to further strengthen the capacity of the Work Services Group (WSG) under the Ministry of Public Infrastructure and review the market competitiveness of current compensation packages. In addition, a delivery unit for critical projects arising out of the *Green State Development Strategy: Vision 2040* could be established under the Ministry of the Presidency to monitor adherence to plan priorities, as well as governance and transparency standards.

A1.5 Implement the Public-Private Partnership (PPP) legislative framework with institutional designs and guidelines for the establishment of a PPP unit. A clear legal precedent for PPPs removes the need for project-by-project frameworks and reduces legal costs. In addition, a PPP unit, housed under the Ministry of Finance will facilitate PPPs by acting as a platform for public-private dialogue and providing legal and logistical support.

2.2.4 A2 Monetary Policy

A2.1 Clearly communicate the Bank of Guyana's policy stance to set clear precedence of expected action under sustained inflationary and exchange rate pressure. Guyana is expected to face increased inflationary pressure over the medium to long term. To ensure that private sector expectations and financial markets remain stable, it is important to communicate how the Bank of Guyana plans to manage this. To do so, the Bank must publish a statement to reaffirm how it interprets its mandate in this context, and in particular, the extent of exchange rate volatility and open market operations it is willing to withstand and undertake respectively.

A2.2 Review the Bank of Guyana's analytical capacity to generate a credible evidence base for the Macroeconomic Committee established under the Natural Resource Fund Act. It is a priority for the Bank of Guyana to review, in consultation with the Ministry of Finance, whether current macroeconomic analysis and reporting arrangements are sufficient to support the Macroeconomic Committee in setting the Economically Sustainable Amount of Natural Resource Fund withdrawals each fiscal year.

2.3 Development Objective B: Sustainable Management of Natural Resources

2.3.1 Overview

Guyana's abundant natural resources – land, water, forests, mineral resources (gold, diamonds, aggregates) – have supported the country's commodities exports and economic development over decades. There are conflicts, however, that routinely arise between the extractives sector, Amerindian communities, agriculture, farming and forestry, infrastructure development, housing and other recreational and passive land uses. History teaches that these conflicts become progressively worse in a 'business-as-usual' or 'do-nothing' scenario.

The policies for economic transformation and restructuring of the Guyanese economy as set out below, though uplifting, are not without significant risks of causing impacts on the natural resource base – particularly land, water and forest resources – which are also deeply connected to Guyanese communities and lifestyles. Restructuring and diversifying the economy must therefore be matched by an equally significant effort to monitor and sustainably manage the country's natural resource base and heritage over generations.

Of immediate concern is the loss of forests from mining operations that pose the greatest risk today, and in the future by expanding industry, commerce, infrastructure and settlements, among other activities. These could potentially threaten the country's forest cover and current low rates of deforestation. Associated with forest loss and land degradation are increased carbon emissions. Development choices and methods would therefore need to carefully weigh current and future impacts vs. any trade-offs that will likely be made.

Business-as-usual approaches will be inadequate to this task. Economic development must be considered alongside social development, and resource conservation practices, should be adopted at every scale wherever a planning-design-implementation cycle exists within the public, private and civil space. "Vision 2040" requires application and use of integrated, modern, efficient and evidence-based approaches as the imperative for balancing resource extraction within the context of the development objectives of the Strategy.

2.3.2 Outcomes

By 2040,

- *Guyana preserves its natural capital through institutionalised and prudent management of natural resources (land, forests, minerals and water) for the purposes of meeting the objects and intent of Sustainable Development Goal #15 (land use and biodiversity).*
- *Guyana's population has high achieved levels of awareness of the value of the country's natural heritage.*
- *Guyana maintains and safeguards its food security, traditional livelihoods and knowledge through effective conservation of biodiversity, ecosystem services and heritage.*

2.3.3 B1 Land Resources

2.3.3.1 Overview

As the premier resource, land requires careful and thoughtful use, with planned allocations in accordance with an agreed framework. Demand for land is significant and growing from a range of competing economic uses: mining, forestry, agriculture and transport infrastructure; as well as housing and settlements, drainage, water production, indigenous claims, among others. There are a dozen land and/or resource use management agencies[14] that fall under the jurisdictions of the Ministry of Natural Resources, the Ministry of the Presidency, the Ministry of Agriculture and the Ministry of Communities, all of which, have a stake in land use and/or resource management. An expanded list includes Amerindian and local government bodies and other agencies.

Agency mandates frequently overlap or are in conflict. As described in the annexes[15], these conflicts have persisted for decades and cause a multitude of issues across all sectors. The implications for future investment in projects for example, for which a functional and vibrant land market is essential, are significant and will only become more complex and problematic in the coming years. It is an imperative therefore that land use decisions be decided within a rationalized system and ideally led by a single agency whose principal function is physical planning.

Systematic land use planning underpins and informs land management systems and is a prerequisite for orderly development. In the near term, a draft land Policy will be considered by the Cabinet that reflects the rights of all Guyanese to own or use land, as required by the Constitution. This remains urgent. The Policy specifies and reaffirms indigenous land tenure rights, as well as ancestral claims that will clear the way for attaining security of tenure, and subsequently, greater incentive for enactment of programmes for rational and sustainable use of land (see section 4.2.6 Land Governance).

2.3.3.2 Policy Recommendations

B1.1 Establish a government-wide geographic information system (GIS) database and network that is accessible to the natural resource agencies. The Guyana Lands & Surveys Commission, the Guyana Geology & Mines Commission and the Guyana Forestry Commission are the principal caretakers and users of the GIS database system and network. These agencies provide critical data inputs and are responsible for safeguarding data quality and integrity, monitoring and reporting on the status and use of the country's natural resources in collaboration, where necessary, with other resource users such as the Ministry of Agriculture, the Ministry of Communities. These databases should be integrated into government-wide geographic information systems that form the basis of a state-of-the art integrated land use planning system. The database system and network should also be ICT-enabled with requisite analytical tools and capabilities to facilitate strategic decision-making, planning, monitoring and evaluation.

[14] GGMC: Guyana Geology & Mines Commission; GFC: Guyana Forestry Commission; GL&SC: Guyana Lands & Surveys Commission; PAC: Protected Areas Commission; WCMC: Wildlife Conservation Management Commission; DoE: Department of Environment; EPA: Environmental Protection Agency; GuySuCo: Guyana Sugar Corporation; GRDB: Guyana Rice Development Board; NDIA: National Drainage and Irrigation Authority; MMA/ADA: Mahaica/Mahaicony/Abary-Agricultural Development Authority; CH&PA: Central Housing & Planning Authority.

[15] "Analytical Evidence to Support Guyana's *Green State Development Strategy: Vision 2040*; Annexes A to H.

B1.2 Establish a national physical development plan to guide national land use. A physical development plan enables informed and science-based decision-making for the country's long-range, social, economic and physical growth. Its coverage is all of Guyana with specific strategies for land development and criteria for zoning of lands for specific purposes. Land use includes but is not necessarily limited to residential, commercial, industrial, institutional, agricultural, tourism and urban development, wildlife, conservation/forestry and protected lands. The objective is development and land use planning and control between competing &/or conflicting land uses. The physical plan allocates beneficial uses of land in coherence with the National Land Policy (NLP) and promotes strategies that enshrine standard methods of geo-spatial mapping and sharing of geospatial data within the natural resources sector. The physical development plan should also be consonant with existing regional development plans of regional governments or village improvement plans of indigenous communities.

B1.3 Maximise zoning of the most suitable lands along the coastal plain for commercial agriculture. The coastal plain averages 40km in width and has the most fertile soils in Guyana. The plain is relatively flat and easy to work, with minimum management inputs, and is therefore the most suitable land for commercial agriculture[16]. For this reason, the coastal plain should be more fully optimized for its agricultural potential, particularly the divested sugar estate lands. Competition for coastal lands comes from urbanization, housing and infrastructure, but agriculture should take precedence in line with the country's food security and export priorities. Agricultural zoning should also take into consideration current and future plans to climate-proof agriculture from the effects of climate change. The sector's current vulnerabilities include effects from overtopping of the sea wall, flooding and saline contamination.

Future studies should also review and consider, as priority, any necessary trade-offs required in the proposed expansion or continuation of large scale commercial agriculture into the Rupununi savannahs (e.g. Region 9). Given the fragility of this savannah ecosystem and the relatively poor understanding of its dynamic ecosystem and connections to hydrological regimes, application of the *precautionary principle* becomes the priority. Commercial agricultural expansion into these ecosystems must on principle be evidence-based, meticulously planned, zoned and scrutinized by decision-support tools, with the requisite monitoring systems in place for mitigation of any predicted impacts.

B1.4 Preserve the traditional agricultural practices of indigenous communities. Traditional agricultural methods practiced by indigenous communities e.g. rotational cropping provide conservation co-benefits. Their traditional forms of cropping have sustained their lifestyles and communities over centuries. These should be documented, studied and perpetuated in Amerindian-titled lands. Cultivars of fruits and other crops (e.g. cassava) used by indigenous communities have shown resistance to drought, floods and pests.

2.3.4 B2 Water Resources

2.3.4.1 Overview

Guyana gets its name from the indigenous word for water - 'Guianas'. The country's "internal renewable water resources" are estimated by the Food and Agriculture Organisation (FAO) at

[16] Ibid.

241,000 million m^3 per year and total renewable resources at 271,000 million m^3 per year (2015)[17]. Surface water sources are from fourteen main river basins (including e.g. Essequibo, Berbice, Mazaruni, Demerara, Potaro and Cuyuni) and groundwater aquifers along the coastal plain. Other water sources are from the conservancies in the "backlands" with water resources retained by earthen dams, embankments and other structures and primarily used for irrigation. Unlike many other CARICOM countries that regularly experience water deficits, Guyana's challenge is mainly in distributing consistently good quality potable water, in accordance with international (WHO) standards.

Most of the potable water resources managed by the Guyana Water Inc. (GWI) come from groundwater wells and water treatment plants from surface streams and springs[18]. Potable supplies from surface water sources are considered to be in relatively short supply primarily because of sediment loading, organic and chemical contamination (e.g. mercury). A few groundwater wells of the coastal plain have been closed because of saline contamination from over-extraction. The four conservancies[19] are built at higher elevations and provide gravity-fed irrigation water to surrounding agricultural fields.

Climate change presents a significant threat related to predictions of longer dry seasons or periods which could impair the recharge cycles of rivers and aquifers. An equally profound threat relates to the lack of a good quality hydrological database and an understanding of the hydrology of ground and surface water, and the interrelation with aquatic, marine and terrestrial ecosystems.

Water resources governance is developed under the Water and Sewerage Act 2002 that also calls for a national water policy. The Act requires the establishment of a national water council (NWC) that is mandated, *inter alia*, to advise the responsible Minister on the implementation, development and coordination of water resources management, as well as on supporting analyses for water use, threats, alternative sources and/or solutions. The law specifies that the NWC when established, will comprise 7-9 individuals appointed by the Minister who are knowledgeable in matters relating to drainage and irrigation, water management, conservation, engineering, environmental economics and hinterland areas. In the pursuit of these and other duties, the NWC must therefore consult with the Guyana Lands & Surveys Commission (GL&SC), the Environmental Protection Agency (EPA), the GGMC and GFC, the Ministry of Agriculture, local democratic organs and any other agencies or persons, as may be necessary to execute its mandate.

2.3.4.2 Policy Recommendations

B2.1 Amend the Water and Sewerage Act 2002 to improve integrated water resources governance and management. The priority is to amend the Act so that the proposed national water council (NWC) becomes an inter-agency body with oversight of integrated water policy and inter-agency coordination between agencies of the Ministry of Agriculture (e.g. Hydrometeorological Department, the National Drainage and Irrigation Authority) and Guyana Water, Inc. As top priority, the draft Integrated Water Management Plan should be

[17] See FAO Aquastat: http://www.fao.org/nr/water/aquastat/countries_regions/GUY/.

[18] Guyana Water Inc. website: https://gwiguyana.

[19] The four conservancies include: the Abary conservancy on the Abary river, also called Mahaica Mahaicony Abary (MMA); East Demerara Water Conservancy; the Boerasirie conservancy; and the Tapakuma conservancy. Source FAO Aquastat, op. cit. Note

revisited and updated so that national water policy is relevant and clear. Once established, the NWC will prioritise development of a comprehensive plan for gathering the data necessary to more sustainably manage and regulate Guyana's resources, particularly data related to aquifer recharge rates. The NWC could also represent the water sector in Guyana's integrated land use planning system. Rather than a consultative body of experts, however, the NWC should be an inter-agency coordination body made up of representatives of the entities listed in the law and others such as experts from the University of Guyana, charged with a similar mandate and reporting requirement as the law currently provides. In the long term, this would better reinforce and institutionalise the requirement for policy review, monitoring, data gathering, and inter-sectoral coordination.

B2.2 Integrated water resources management is prioritised along with science-based research, and analysis. Guyana's hydrological regime is not very well studied and provides the basis for surface and groundwater characteristics and flow and for managing disparities in water availability between coastal regions and the hinterland. The available freshwater sources are challenged by pollution. Rivers, springs and other surface water streams are tapped at appropriate sites for intake valves or to feed storage reservoirs. Monitoring and use of the latter require an understanding of hydrological regimes of rivers and aquifers and the optimum levels of flow to maintain soil moisture, fertility and integrity, which is critical for agriculture. Scientific and research studies support better understanding, control and management of storage reservoirs and related activities.

2.3.5 B3 Forest Resources

2.3.5.1 Overview

Guyana has a long tradition of forest and biodiversity conservation. There are two notable examples of major forest conservation initiatives in the country: 1) the Iwokrama International Centre for Rainforest Conservation and Development (IIC) was established in 1996 to manage 371,000 hectares of forests[20] for conservation and equitable use of forest resources as a partnership between the Government of Guyana and the Commonwealth Secretariat; 2) the Upper Essequibo Conservation Concession, a 30-year logging concession of 80,937 ha was secured by Conservation International in 2002 for conservation rather than logging and pays comparable fees to the Government of Guyana for this purpose.

Forest resources on State Lands are substantive and well managed by the Guyana Forestry Commission (GFC), which is the extent of GFC's current mandate, and the country has maintained 87% forest cover for over a decade. The GFC has managed over the years, Guyana's reputation for achieving low rates of deforestation through the solid results of its monitoring, verification and reporting (MRV) systems under the UN programme on Reducing Emissions from Deforestation and Forest Degradation (REDD+). The REDD+ mechanism is a requirement of the *Low Carbon Development Strategy* (2009; 2013) that has verified low deforestation rates at the 0.052% threshold established in an agreement with the Government of Norway to maintain forest cover and continue the country's low-emissions development. Guyana's success on this front has secured the global benefit of preserving an important carbon storage for close to a decade and earned the country valuable revenues under its

[20] The conservation area was established by Act of Parliament, "Iwokrama International Centre for Rain Forest Conservation and Development Act Chapter 20:04; 9th November 1995. See Iwokrama.org.

agreement with Norway (US$250M). The expertise of the GFC in REDD+ MRV has expanded into the commercial sphere as a result of its participation in the EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan to reduce trade in illegally logged species, with associated environmental and social benefits.

The REDD+ Agreement with the Government of the Kingdom of Norway expired in 2015 and negotiations for a renewal are underway, pending completion of the *Green State Development Strategy: Vision 2040*. An effective REDD+ mechanism is consonant with the Vision 2040 development agenda and will continue to provide the motivation for maintaining the country's forest cover, protect its biodiversity and important ecosystem services.

Monitoring of the direct (human activities) and indirect drivers (interrelated factors such as markets, commodity prices, policy and governance) of deforestation over the long term will continue to rely on changing practices and patterns of behaviour among forest users and dwellers, strengthening the requirements for forest governance (e.g. policies, laws, regulations and institutions) and monitoring use in forested areas.

2.3.5.2 Policy Recommendations

B3.1 Ensure and strengthen sustainable forest management for low emissions development. Although Guyana's current carbon emissions result mainly from agriculture and energy, the objective is to reduce and/or main low rates of forest degradation, forest loss and retain healthy forests well into the future. Guyana will therefore continue to honour its commitments under the *Low Carbon Development Strategy*, and its bilateral and international agreements, and to monitor and mitigate rates of deforestation. Guyana's REDD+ mechanism will be strengthened through implementation of an agreed action plan, including an effective grievance mechanism to ensure that management processes for forest dwellers and resource users are fair, transparent and inclusive. More sustainable management practices such as reduced impact logging that promotes efficient timber harvesting practices will be incentivised and/or promoted. Training and upgrading of skills of forest sector workers is also a necessity, along with use and application of appropriate technologies, scientific research, data collection, analysis and information sharing for improved monitoring and certification of forest activities. Performed in a systematic way, these practices are expected to drive behaviour change and adoption of best practices and to benefit the country's activities under EU-FLEGT and REDD+ schemes. Furthermore, reduced impact logging should be adopted as a feasible green economy initiative among logging concessions.

B3.2 Leverage GFC's expertise to guide improved forest monitoring and management within other land ownership categories. GFC's management expertise should be available to other categories of land ownership. Over the long term, this might be more formalised following extensive and prior consultations with private land owners and with the "free, prior and informed consent" of indigenous communities. The objective is to strengthen the national forest monitoring system overall among all stakeholder categories and to ensure continued minimum rates of deforestation.

B3.3 Strengthen the suite of forest management tools, measures and plans and involve key stakeholders in joint forest resource management, monitoring and research. A national forest inventory that maps, quantifies and describes the complete characteristics of Guyana's forest resource is an essential tool for sound forest management and reduced impact logging

over the medium and long terms. The current GFC timber resource inventory could be strengthened by capacity improvement and technical support for a database that both supports and is enhanced by scientific research and analysis. It is also important that data and information on species diversity is also prioritized to encourage more precise estimates of timber stocks. Investment should also be made in monitoring and ground surveying technologies (e.g. use of drones) to measure tree and species density, and that these complement aerial surveys that more accurately model and predict encroachment impacts from mining or urban sprawl. Overall, these activities can only serve to enhance assessments of the timber resource value, justify exploitation of lesser utilized species, and support value added timber production for the purpose of maintaining low rates of deforestation.

B3.4 Strengthen Community Reporting, Monitoring and Verification (CMRV) Programmes of indigenous communities. Indigenous communities apply traditional methods for keeping forest resources in balance over centuries. It is important that these are validated for conservation of forest health and forest cover, and for monitoring and preventing deforestation e.g. from unsustainable mining practices. Indigenous lands amount to 15% of Guyana's total land area, which make these communities an important resource for continued forest management in the long term.

B3.5 Implement provisions under the Amerindian Act 2006 that mandate Amerindian village councils to manage forest resources. The Act accords Amerindian communities' autonomy over their lands. However, completion of the land titling project is the priority, along with timely payment of royalty fees from mining activities conducted on indigenous lands. Importantly, the development of village improvement plans that are also required under the Act, could be better supported and advanced to give effect to forest management objectives. Indigenous communities could be better motivated to drive forest production value added and resource management, verification and reporting. Incentive schemes to reduce mining impacts might also be considered to ensure that mined-out land is rehabilitated and on a timely basis.

B3.6 Advance certified technical and vocational training for effective forest management and monitoring. Training and certification must be prioritised for forest management professionals and workers particularly in forest inventorying, road construction, logging (reduced impact logging), sawmilling and timber processing. This will improve production efficiency, ensure good quality standards in timber products, encourage improved technology use, including best management and operational practices and uphold environmental safeguards.

B3.7 When forest rehabilitation is necessary because of degradation, then restoring to as near the original value of the forest area is paramount. Where reforestation is the priority then such programmes will take into consideration future plans for the area and the type of benefits expected from the cultivated forest.

B3.8 Continue the monitoring, control and reporting on wildlife trading (legal and illegal). Wildlife trading among forest dwellers and communities forms part of traditional activities. Amerindian communities have an intimate understanding of and connection to the forest ecosystem, which provides for their families' nutritional needs. They are therefore good guardians and stewards of forest ecosystem health especially in remote areas and have a stake in the monitoring and control of illegal hunting and trading of wildlife species. However,

maintaining consistent oversight and policing of the wildlife trade to ensure that it is kept within legal, sustainable levels must continue to be a priority, taking cognizance of requirements for illegal trading of species listed in CITES[21]. For Guyana, key or flagship species of parrot, the spotted caiman and the jaguar that are also important to the country's biodiversity and nature-tourism product must be afforded more consistent monitoring and control against illegal wildlife trading.

2.3.6 B4 Biodiversity and Ecosystem Services

2.3.6.1 Overview

Seventy percent of Guyana's ecosystems are intact and include standing forests, which provide habitats for a wide range of species, many of which are either locally threatened or globally endangered. Guyana's biodiversity and ecosystem services provide both global and local benefits, including climate regulation, provisioning of fresh water and opportunities for economic development in agriculture, forestry and fisheries, particularly in hinterland communities.[22]

Guyana's biodiversity has also supported the production of goods and services important to the country's economic development. In 2013, 93 percent of foreign exchange earnings were from use of natural resources, including biodiversity and ecosystem services.[23] The Government of Guyana-Norway agreement has already provided US$250 million. Prior to this agreement, Guyana became a signatory of the UN Convention on Biological Diversity (CBD) in 1996 and committed to placing 17% of its terrestrial area under legal protection status by 2020. Progress has been slow. More recently, however, with the declaration of the Konashen lands of the Wai Wai community in the south as a protected area in 2017[24], land under protection has increased from 5% to 8.5%.

In the fight against climate change risks, improving resilience, diversity and health of ecosystems remain the priority. Guyana will therefore continue to strengthen its institutional, and management capacity to meet its international commitments under the Convention for Biological Diversity, and in accordance with the National Biodiversity Strategy and Action Plan (NBSAP).[25]

2.3.6.2 Policy Recommendations

B4.1 Prioritise the allocation and establishment of a total of 2 million hectares of land for legal protection. The priority is for protection of lands below 4°N latitude that serve as the headwaters for the Essequibo, Rupununi, Takatu rivers among other tributaries, contain varied ecosystems, habitats and wildlife such as, the Rupununi savannas and forest ecosystems of the Kanuku and Pakaraima Mountains. These lands also support key Amerindian communities (Makushi, Wapishana and Wai-Wai). Protected area allocations should not

[21] The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in its Appendices, lists over 12,000 species for which monitoring and control against illegal trading is encouraged.

[22] Guyana's Fifth National Report to the UN Convention on Biological Diversity

[23] Guyana's National Biodiversity Strategy and Action Plan 2012-2020.

[24] The Village Council of Konashen in Upper Takutu-Upper-Essequibo (Region Nine) signed an agreement with the Protected Areas Commission on 7th July 2017 for the first Amerindian protected area under the National Protected Areas System.

[25] Ibid.

unduly burden or affect these communities but include them as custodians, partners and/or beneficiaries. Selection of sites will be in accordance with the priorities established under the *National Biodiversity Strategy and Action Plan (2012-2020)*, and that complement the REDD+ action plan, including but not necessarily limited to, critical natural habitats, important bird areas, habitats and areas important to Guyana's endangered, threatened or flagship species (e.g. Jaguar), key vegetation types and/or wetland areas.

The Opt-in Mechanism (OIM)of the *Low Carbon Development Strategy* needs strengthening &/or re-evaluating to assess its potential for promoting voluntary forest conservation on community and privately owned lands, under the National Protected Areas System. The OIM is a benefit sharing mechanism for the distribution of direct and indirect gains from the implementation of REDD+. It can be used to promote forest conservation and payments for ecosystem services (PES) as an incentive for maintaining low rates of deforestation and raising revenues from ecosystem use.

B4.2 Commence the process of accession under the RAMSAR Convention for the protection of its wetlands of international importance. The Rupununi savannahs, as a notable example, become wetland sites during the peak rainy season, when water levels are significantly elevated and remain so over many months. At peak rainy seasons also, floodwaters have been known to cause a backflow from the upper Essequibo basin into Brazil via the Takutu basin and provide spawning grounds for migratory fish species. The flow of floodwaters drives migration of micro and macrofaunal species associated with this dynamic ecosystem[26] and very likely explains the high species diversity found in the Rupununi Savannahs. Although not sufficiently well understood, the Rupununi wetlands and hydrological flows may also play an important role in the recharge of watershed areas and groundwater aquifers, provide a source of irrigation water at downstream locations and support good opportunities for ecotourism. The priority therefore is to continue and/or support scientific studies of such valued ecosystems for the purposes of informing decision-making, land use planning and biodiversity management, as well as the development of future value-adding industries such as tourism.

2.3.7 B5 Precious Metals, Mineral and Aggregate Resources

2.3.7.1 Overview

Mining is a high growth sector that is prioritised for Guyana's economic transition, and policy proposals for improving the sector's operations are made in detail in Chapter 3 below. Mining, however, impacts land, forest and water resources and its operations have often come into conflict with forest users, indigenous livelihoods and other natural resource users. River courses in the vicinity of mining areas have high levels of sedimentation, chemical and metal contamination (particularly mercury).

The process of issuing mining leases for gold, diamond, bauxite, manganese, laterite and aggregate resource extraction require higher levels of research, scrutiny and regulation, use of standards for better management of land, water, mineral and aggregate resources, particularly in relation to controlling pollution from operations.

[26] Descriptions of the ecosystem and its dynamic hydrological regimes are described in the work of WWF-Guianas and have been shared with the GSDS Coordination Office.

Mercury for its contamination impacts, must be phased out of mining practices. The priorities are: to quantify and map the extent and occurrence of mineral and aggregate resources for better management, understand and manage rates of extraction, to control impacts, streamline revenue generation and associated contributory schemes, reducing pollution impacts, and ensure that laws and regulations are enforced, where needed. The country must also continue to meet its obligations under international conventions and through the Extractives Industries Transparency Initiative (EITI), of which it is a member.

2.3.7.2 Policy Recommendations

B5.1 Improve geospatial mineral resource mapping, estimation and quantification. The priority is to improve the capacity for evidence-based mineral resource and aggregate exploitation. The range and extent of mineral and aggregate resources should be better understood for the purposes of improving operating standards, greening business practices and to inform future resource extraction planning and management. Advances in technologies have also improved mineral resource prospecting methods, with use of metal detectors to advanced training in geophysical and geochemical analyses.

B5.2 Research and study options for using financial securities to rehabilitate mining sites. The objective is to rehabilitate mined-out sites in a timely manner and to an appropriate standard to safeguard public safety, amenities and potential impacts, and return the site to more productive uses (a green economy investment). The current bond value levied on miners for land rehabilitation purposes is set at GYD$ 200,000. This is unlikely to cover the full cost of site rehabilitation or serve as a deterrent against site abandonment or lack of timely rehabilitation of mined-out sites. Research studies should be conducted to understand the full cost of rehabilitation. Studies may also provide a baseline for resetting higher, more punitive bond values that drive the mining sector towards more responsible actions. Research studies should also inform the choice of vegetative species used in land rehabilitation work, as species such as *Acacia mangium* that is currently used is invasive to Guyana's forest ecosystems and should therefore be avoided. In addition, rehabilitating mined-out sites on indigenous lands should always be undertaken in accordance with their rights to free, prior and informed consent.

B5.3 Review and update mining laws and improve capacity for enforcement and monitoring. Mining laws should be reviewed and updated in parallel with activities related to improving ore and mineral prospecting and the application of evidence-based methods to monitoring and management of resources. Fines against illegal activities or undesirable behaviours should be increased to serve as both a deterrent and an incentive. Prosecution of law breakers should be undertaken without fear or favour but to the full extent that the law permits. The objective is to ensure that mining operations serve the economic purpose of its land use allocation and that the people of Guyana benefit over the short and long terms.

2.3.8 B6 Traditional Knowledge and Practices

2.3.8.1 Overview

The history of the Guyanese people can be traced to 11,000 years ago when its indigenous – Amerindian populations hunted, gathered, fished, settled and explored the country. There are nine indigenous nations that remain to this day: Arawaks, Arecunas, Akawaios, Caribs, Macushis, Patomonas, Wai Wais, Wapichan and Warraus. These peoples settled along the

northern coasts (Warraus in the northwest, Caribs and Arawaks along the coast); along the western Venezuelan border (Akawaio) and the southern Brazilian border (Patamona, Macushi, Wapichan and Wai Wai).

From the 15th Century onwards, European colonisers from Spain and Portugal pursued gold expeditions that led them to Guyana, followed by the Dutch and the British who colonised and established settlements, along with their systems of infrastructure, agriculture and administration.

It is, however, mainly the heritage of indigenous peoples where efforts abound to preserve and celebrate traditional knowledge and practices, given how quickly these are being lost to modernity i.e. changing land use patterns and practices, dominance of Western tastes, cultures and technologies. Indigenous populations account for 15% of the Guyanese population and are located mainly in rural and hinterland communities.

Guyanese indigenous peoples have survived over several millennia in some cases and over centuries in others. They live in harmony with nature and their social systems, livelihoods and practices depend upon contiguous land areas, healthy forest-, water-, ecosystem and biodiversity resources. Preserving traditions and practices are essential for community health and long term survival and contribute to the country's national patrimony. The Amerindian Act No. 6 of 2006[27] was established, *inter alia*, "to provide for the recognition and protection of the collective rights of Amerindian Villages and Communities", and individuals who are born or reside in, share a common culture or traditionally use and occupy, State lands. Under the Act, the Village Council is vested with wide powers[28] to regulate, manage and oversee affairs of the village and community, and any activity within its lands.

The policies recommended below are interrelated with those prioritised under human capital and wellbeing, and governance in Chapter 4.

2.3.8.2 Policy Recommendations

B6.1 Indigenous communities' traditional systems have endured over centuries and their conservation is a priority for maintaining cultures, livelihoods and communities, community health and wellbeing. Indigenous land tenure rights and security of tenure form the basis of preserving in perpetuity the health and welfare of indigenous communities, peoples and lifestyles, traditions and knowledge. Land titling of indigenous lands must be determined to ensure that traditional and sacred lands and burial grounds are included and remain connected to these communities. In addition, preservation of indigenous lands for the purposes of maintaining their farming practices, livelihoods and living conditions is a priority. Adherence to the provisions of international instruments, such as Aichi Biodiversity Target #18 of the Convention on Biological Diversity; the United Nations Declaration on the Rights of Indigenous Peoples and ILO's Indigenous and Tribal Peoples Convention, 1989 (No. 169) provide guidance to formulate specific action in this respect.

B6.2 Traditional indigenous knowledge is valid and contains valued information on preservation and use of Guyana's key natural resources, particularly forests. The primary responsibility for the preservation and promotion of traditional knowledge and practices lies

[27] See: Laws of Guyana.

[28] See Section 14 (1) of the Amerindian Act No. 6 (2006).

with indigenous communities and/or their village councils. In that regard, they are to be supported in prioritised preservation efforts regarding traditional lifestyles, land uses and practices, including but not necessarily limited to their traditional forms of medicines, crop farming, food and related products, languages and dialects, art, music, folklore and oral traditions, creative arts and other forms of entertainment. Any research or scientific studies, reporting and/or documentation of knowledge and practices, wherever supported by external institutions or individuals shall be in accordance with indigenous rights of "free, prior and informed consent".

B6.3 Traditional knowledge and practices should be considered in the design and delivery of public services and programmes. Public information on government services and programmes should be available in the main indigenous languages. Decision-makers should, however, apply discretion in selecting the languages and dialects of the indigenous nations most suited to the purpose of conveying information in the most satisfactory manner.

B6.4 Preserve the traditions of other Guyanese ethnic cultures. Guyanese society also includes other ethnicities e.g. African and Indian with their unique cultures, oral traditions, creative arts, culinary traditions and practices. These should also be preserved in accordance with the priorities established by their recognized and representative groups and/or associations.

Chapter 3: Support Economic Resilience

3.1 Introduction

A sustainable economy has a diversified base of activities that are competitive, resilient, emit lower or zero carbon emissions and support economic growth. An economy that is concentrated across similar activities is less resilient to negative shocks. If those activities are impacted by volatile prices, a natural disaster or some other adverse event, overall economic activity is disproportionately affected. By contrast, building up a diversified base of economic activities, particularly across relatively independent sectors, can improve resilience to such shocks and hence is a priority under the *Vision 2040* development agenda. An economy can also build resilience within a sector by increasing efficiency and moving into higher-value add activities to improve competitiveness and access new markets. Production processes should employ the most efficient technologies and methods to ensure that the most value possible is extracted from inputs. For Guyana, this involves upgrading machinery, modernizing production techniques, and moving further into processing in agricultural and extractive industries.

An adequate and efficient public infrastructure network supports all business activity and is a critical component of economic productivity and sustainable growth within a green economy. All businesses in some way depend on a service that requires infrastructure, such as transport, communications and/or electricity. Under the *Vision 2040* development agenda, public investment in infrastructure must seek to improve its quality and reduce the cost of services to the citizenry and business community. This in turn enhances firm level productivity and delivers economic growth. Infrastructure should also bring improved market access to the poorest and help deliver inclusive development. A paucity of service infrastructure, poor or unsustainable design and a lack of 'last mile' connectivity can leave some communities stranded or perpetuate access difficulties.

Strengthening the infrastructure network in the hinterland to improve its performance overall, will also help some of the poorest communities gain improved access to economic opportunities and social services, foster inclusive development and increase equality. Resilient infrastructure protects citizens and their livelihoods against more severe natural hazards from climate changes, helping to maintain a decent quality of life. This is particularly pertinent in the context of Guyana, due to the high risk of flooding and concentration of economic activity along the coast.

As an underlying principle, a resilient economy must use less resources, avoid pollution, lower carbon emissions, provide decent work opportunities and limit impact on the environment, and in line with requirements of the Sustainable Development Goals[29]. The purpose is to improve the lives of all Guyanese citizens in terms of jobs and livelihoods, particularly the poor and disadvantaged, as contemplated in SDG #1: “End poverty in all its forms everywhere”.

[29] Particularly SDGs #2, 5, 6, 8, 9, 11, 12, 13, 14, 15 and 17.

3.2 Outcomes

By 2040, Guyana's core economic sectors:

- *Adopt greener and safer operating practices, reducing resource use, minimising waste and negative environmental and social impacts;*
- *Achieve high levels of productivity and sustainability through the adoption of advanced technology and management best practices;*
- *Successfully compete in regional and international markets, in part due to a reliable and efficient network of infrastructure and effective fiscal policy in line with regional comparators;*
- *Are supported by strong and effective institutions which ensure high compliance with regulations while facilitating market activity, reducing bureaucracy and supporting the transition to the 'formal' sector.*

3.3 Development Objective C: Green and Inclusive Economic Diversification

3.3.1 C1 Resource Extraction for Sustainable Development

3.3.1.1 C1.1 Mining

Analysis

Mining is currently the largest single sector of the Guyanese economy, led by gold and bauxite. The sector is responsible for almost two-thirds of merchandise exports[30], a quarter of GDP[31] and indirectly influences most service sectors, such as construction and banking. Gold is the most significant subsector (accounting for almost 90% of mining exports), has been driven by small and medium scale firms (producing roughly two thirds of output[32]) and is growing quickly. Bauxite is responsible for most other exports, is dominated by two multinational firms and has declined in value over time: an alumina refinery in Linden was closed in the 1980s due to expensive, unreliable energy supply.

Mining practices are dated, inefficient, often unsafe and generate significant environmental impact relating to loss of forest cover, chemical and metal contamination of rivers and other water sources. Mining also causes conflicts with indigenous communities related to activities in or near ancestral lands and social interactions with communities that cause tension and

[30] Bank of Guyana, 2017

[31] Bank of Guyana, 2016

[32] GGMC, 2017

breakdown of traditional family structures. Unsafe exploration practices, particularly in small-scale mining, have serious negative long-term impacts on the miners' health.

The *Vision 2040* development objective (in line with SDG #3 – health and wellbeing) is to achieve higher standards of sustainability, safer operations, transparency and governance in all natural resource extraction practices.

Policy Recommendations

C1.1.1 Make institutional adjustments to eliminate landlordism among small- and medium-scale gold mining and to drive sustainability. The biggest priority in the sector is to reduce the amount of land that is rented out by license holders to other entities who undertake mining activity (the landlord-tributor relationship). This separation reduces firms' margins and access to finance, as well as their legal and environmental accountability. A substantial increase in annual mining permit fees would stimulate the devolution of land from unproductive to productive firms. Higher production costs for firms is compensated by a progressive reduction in license fees as gold declarations per acre increase. In the longer term, royalty fees could be lowered, which would also help to reduce smuggling. The incentive to devolve land is strengthened by a limit to the number of licenses per holder (currently unlimited) and 'rentier responsibility', under which the license holder (not the tributor) becomes legally responsible for the mining activities undertaken on the land. The Guyana Geology and Mines Commission (GGMC) is strengthened to provide technical and financial support for better compliance among license holders.

C1.1.2 Undertake mineral ore resource surveys to focus operations in areas with proven mineral reserves. Currently, small miners lack the capacity to finance surveys of mineral reserves and resort to the 'hit-or-miss' approach. In this regard, GGMC, with the support from international agencies, could undertake geological surveys to identify suitable areas for small- and medium-scale mining. This would reduce the risk of unsuccessful prospecting and minimize costs. Information collected through such surveys would be consolidated in a broader land use planning framework.

C1.1.3 Incentivize adoption of more efficient, safer and environmentally friendly mining techniques. Small- and medium-scale miners use similar methods and recovery technologies such as a sluice box, which is inefficient (only 20-40% of the gold in the ore is captured) and requires the use of mercury. Given the harmful environmental and health impacts of mercury, there is an urgent need for miners to move to modern 'mercury free' technologies. Although these technologies have higher recovery rates improving economic returns, miners may struggle to meet higher initial capital requirements. Recognizing this constraint, financing options such as a financial services facility managed by the Guyana Gold Board (GGB) and tax concessions could help. GGB may offer services directly to producers or work indirectly through a private sector partner. The merits of both should be assessed considering both GGB's and potential partners' capacity. GGB could also increase awareness of occupational safety and health (OSH) risks and verified mercury free technologies.

C1.1.4 Merge the small-scale operator framework into the medium-scale framework. In practice, the division of frameworks is not useful (production methods are similar, and the producers are mostly the same) and increases the Guyana Geology and Mines Commission's (GGMC's) institutional and operational complexity. As the medium-scale framework is more

stringent (longer permits and both stronger business and environmental safeguards), it could be used as the standard for both small- and medium-scale producers, with a possible reduction of the minimum acreage threshold. This would reduce the costs of oversight for GGMC through merging its Mines and Land Management divisions, reduce the total number of registered properties and enforce stronger social and environmental standards.

C1.1.5 Encourage use of advanced technology and employ more sophisticated monitoring techniques to reduce the costs of enforcement. Ending the regulatory division between small- and medium-scale producers will help to reduce GGMC's workload; but it is still under-resourced given the high number of miners relative to mining officers. This workload could be further minimized through the inclusion of local actors (for example, residents, community-based organizations and local authorities) as active watchdogs, greater use of modern monitoring technologies (for example, drones, Geographic Information Systems (GIS), geo-referencing tracking devices and remote sensing devices) and random checks carried out in areas of increased environmental risk. Moving the monitoring responsibility of small- and medium-scale mining to the Environmental Protection Agency (EPA), as already done for large-scale operations, should also be considered in the long term.

C1.1.6 Make investments in critical infrastructure to support the development of both gold and bauxite. For gold mining, improved road access from Georgetown to Bartica and from Bartica to mining regions such as Puruni and Matthew's Ridge could be considered. For Bauxite, an upgrade of the Linden-Kwakwani and Ebini-Ituni links is critical, as well the construction of a deep-water port to reduce shipping costs. Even more importantly, lower electricity costs may allow alumina refining to restart at Linden, which could be complemented by a connection of the Linden electricity grid to the coastal grid.

3.3.1.2 C1.2 Oil and Gas

Analysis

The oil and gas industry is set to become Guyana's largest sector and will have positive spill-over across the whole economy. It will be responsible for almost 70% of merchandise exports and half of GDP in five years[33]. The sector's key priorities are ensuring good governance and transparency; establishing clear rules of operation; evidence-based decision-making and design; achieving efficiency and value added and optimal use of resources, all of which are consistent with the *Vision 2040* development agenda.

Although the oil and gas sector can operate in relative isolation from the rest of the economy, there are opportunities to increase its impact through stronger links with other sectors. First however, proposals on the table for local refining of Government's share of oil production must be carefully examined and studied against any alternative options. Second, a segment of the local labour force should be up-skilled and diaspora labour attracted back to Guyana to work in both the industry itself and associated supply services, but not at the expense of other sectors e.g. agriculture, tourism and manufacturing that are also targeted for restructuring, expansion and diversification. Third, a detailed assessment of all possible energy sources must be the basis upon which the best use of associated natural gas is decided.

[33] IMF Country Report 2018

The *Vision 2040* development objective for oil and gas extraction is to ensure that natural gas production associated with oil extraction is utilised in the most beneficial way as identified by clear evidence-based assessments; transparently and consistently delivers the country's fair share of earnings, with investments made in the domestic economy, with environmental risks minimised and controlled.

Policy Recommendations

C1.2.1 Study and assess the business case to refine Guyana's share of oil production, maximizing local industrial development. This will contrast the economic benefits and environmental impacts, including carbon emissions, from oil refining against the default option of directly exporting oil production. It will consider GuyEnergy's proposal for a small (30,000 barrel/day) modular refinery associated with restarting aluminum production at Linden.

C1.2.2 Build an effective strategy for managing and monitoring local content. Local content requirements have positive aspects such as developing local supply chains, and negative aspects such as increasing production costs, reducing profit and public revenue. Identifying the best policy option would require extensive work alongside ExxonMobil. Given Guyana's "brain drain", a strategic priority is to identify strategies to attract skilled professionals and entrepreneurs currently living abroad. Consideration should therefore be given to development of a specialized recruitment and training agency tasked to develop local capacity and skills to match the industry's requirements and build local supplier capacity as a multiplier for revenue generation. In the longer term, these could be complemented with efforts to promote professional and skills certification. The exact requisite of skills will depend on how the oil and gas is used but will include proficiency in mechanical, industrial and chemical engineering.

C1.2.3 Compare and assess use of natural gas as a fuel for electricity generation and wider energy use. With the difficulties and costs presented by the large-scale Amaila Falls hydroelectric plant (165MW), Guyana must identify a more immediate indigenous energy source. Natural gas associated with the Stabroek block's oil production is projected to be sufficient to fuel 200 – 300MW in generation capacity, more than current Guyanese electricity production. The use of natural gas for electricity generation will also be compared against other options such as utility-scale solar PV and small run-of-the-river hydro systems, as contemplated in the energy transition programme (see below). Studies must consider both economic and environmental impacts, including carbon emissions, and analyse the technical and economic feasibility of converting Guyana's expensive and polluting heavy fuel oil (HFO) plants to use natural gas as a (cleaner) transition fuel for baseload electricity demand, and possible the transport fleet and buildings. In addition to reducing operational costs, replacing HFOs with natural gas would result in an immediate reduction of GHG emissions.

C1.2.4 Strengthen the governance of oil and gas fiscal revenues through the Natural Resource Fund Act (NRFA). The approval of the Act will introduce fiscal rules that limit Guyana's budget dependency on oil revenues, assure intergenerational savings and reduce the risk of economic volatility and 'Dutch disease' (see Chapter 2 above) for a more detailed discussion of the NRFA). Additionally, Guyana could review the terms of its existing Production Sharing Agreement (PSA) to fully prepare for future PSA negotiations. It is also a priority to ensure the Government gets the correct volume of revenues, which may require a Cost

Recovery Committee and a dedicated accounting unit within the Ministry of Finance. The widest possible national consensus should be sought for the approval of the Act and consideration also could be given to requiring a two-thirds majority of the National Assembly for future changes to the Act.

C1.2.5 Monitor and manage risks of an oil spill. The examples of neighbours such as Trinidad and Tobago indicate that oil spills can be recurrent and have catastrophic impacts on marine ecosystems and protected shores. The National Oil Spill Contingency Plan must be finalized as priority, to reduce the probability that an oil spill occurs and limit the damage it causes if it does. This will require complementary ecological studies of Guyana's marine ecosystem to identify the immediate and long term damage an oil spill could have on Guyana's wildlife, and hence the best way to mitigate this.

3.3.1.3 C1.3 Timber Production and Processing

Analysis

Despite accounting for a large share of GDP, timber production has stagnated in the last decade and struggled to switch to sustainable practices, with exports ranging from USD 36 to 44 million annually. Future growth prospects are also limited, with projections of 1% annual growth for the next five years[34]. Concessions have low productivity, producing about 40% of the levels that are considered environmentally sustainable per acre, due to the limited density of more commercial species (for example, Greenheart and Purpleheart). Smaller firms lack access to finance and do not invest in better technologies such as portable mills, but low acreage fees allow them to retain concessions. They also have difficulties accessing international markets and achieving certification (only the Iwokrama concession has Forest Stewardship Council certification in Guyana). Finally, Georgetown's shallow port limits vessel size and raises transport costs. Policy recommendations are co-related to those of the management and monitoring of forest resources provided in Section 2.3.5. above.

The *Vision 2040* development agenda, therefore, anticipates increased benefits from improved access to domestic and international markets particularly for certified and sustainable timber products; high levels of productivity with adoption of advanced technologies and management best practices, supported by a reliable and efficient infrastructure network in order for Guyanese timber products to successfully compete.

Policy Recommendations

C1.3.1 Incentivize increased productivity and sustainable operations among existing concessions, instead of assigning further areas for concessions. The priority is to replace royalties and acreage fees by stumpage value charges on standing forest. This is expected to encourage concessionaires to harvest more timber, reduce incentives to maintain over-sized concessions and stimulate the devolution of unproductive land, shifting resources to more efficient firms.

C1.3.2 Improve recovery rates of extracted logs. Currently, the vast majority of extraction is done through chainsaw milling with low conversion efficiency: only 40-50% of the volume of a log currently ends up as usable lumber. This could reach as high as 65-70% with the appropriate milling technology. The Guyana Forestry Commission (GFC) could support

[34] IMF Country Report 2018

modernization through a joint-venture with machinery/equipment suppliers, as well as provide advisory services on design and certification. GFC could also encourage smaller producers to organize into producers' cooperatives. This will pool resources for investing in technical assistance, market access and better equipment and machinery.

C1.3.3 Increase availability and standards of training to expand and professionalise the supply of skilled labour in the industry. GFC could establish joint-ventures with technical education institutes to develop a portfolio of technical distance-learning courses in forestry, such as timber grading and quality control; forest products marketing and promotion of lesser known species; tree and wood identification; directional tree felling; forest harvesting operations; occupational safety and health measures in forestry; forest management, environmental standards and eco-labelling and planning; and reduced impact logging.

C1.3.4 Facilitate and support action by domestic firms to secure and maintain access to international markets. In the context of growing global demand for certified timber, the Government embarked in 2012, on a strategy to replace certification of individual concessions with the accreditation of larger regions, through the EU Forest Law Enforcement, Governance and Trade (FLEGT) system. A trading facility would be an effective tool to further support State Forest Permissions (SFP) and Wood Cutting Leases (WCL) with negotiation and sales to international markets; provision of export credit guarantee schemes; and derivative products, such as futures. The trading facility could monitor quality control and production efficiency on potential long-term contracts with foreign buyers. In addition, GFC could act as a coordinator of SFPs for establishing out grower schemes with multinational timber firms (following the model of those that have been successful in Uganda).

C1.3.5 Increase the visibility of Guyanese tree species in domestic and international markets and encourage domestic producers to use new species. A marketing program (informed by evidence-based assessments) for Lesser Utilized Species (LUS) for retailers, exploring different characteristics and uses, could provide a strong incentive for producers to become more efficient, innovative and to decrease extraction rates. In addition, providing more market information to producers (for example, the largest global export markets) would also help direct production efforts and support financial and business planning.

C1.3.6 Provide technical assistance and investment facilitation services to encourage expansion into higher value-added furniture production, use of other wood and non-timber products. GFC, through the Forest Products Development and Marketing Council, could provide technical advisory services for promoting higher value-added products, assisting for example furniture firms in designing, developing, producing and promoting furniture products, other wood and non-timber products; as well as in plant design and production efficiency along the entire value chain. This unit could operate in partnership with the trading facility. It could also work with the Guyana Office for Investment (GO-INVEST) to help potential foreign investors to identify local partners for foreign direct investment (FDI) in furniture and joinery.

C1.3.7 Strengthen port infrastructure to decrease shipping costs. In the short term, the Georgetown port needs dredging to allow for larger shipments of timber and other exports. In the medium term, the development of a deep-water harbour is crucial to bring in larger cargo vessels for timber.

3.3.1.4 C1.4 Fishing and Aquaculture

Analysis

Although a significant sector of the Guyanese export economy, fishing has been declining in recent years and faces important development challenges. Fishing is still one of the largest sectors in the country – accounting for roughly 2% of GDP and more than USD 80 million in exports – though recent growth has been muted. After reaching a peak of capture in 2003 of almost 60,000 tons, it has been passing through a gradual decline and now produces only 40,000 tons. Though further scientific research is needed, this could plausibly be a symptom of the exhaustion of marine resources due to over-exploitation. Furthermore, deep water fishing is underdeveloped, with just one firm operating formally, no structured licensing process and a lack of information on the geographical availability of resources.

Aquaculture, while still nascent, is an important potential avenue for growth in the industry. Currently, aquaculture produces very little output, accounting for less than 1% of total fish production over the last decade. Operations in the industry remain small-scale and are not sufficiently commercialized: producers have low bargaining power, limited access to production inputs and finance and reduced capacity to assure production quality. In this regard, attracting foreign direct investment (FDI) and bringing in international skills and experience may help producers to organize themselves and develop a clearer and more efficient value chain.

The *Vision 2040* development agenda envisages that the fishing and aquaculture sector adopts clear, evidence-based sustainability standards and practices to generate improved benefits for certified and sustainable products to access international markets and spur development of a skilled local labour force.

Policy Recommendations

C1.4.1 Support both artisanal and commercial producers to shift to more sustainable practices. Guyana must ensure that resources are preserved, given that production has declined over the last decade. Guyana has an opportunity to provide fresh and frozen fish to its Caribbean neighbours and other importers if it is able to sustainably increase production. It is a priority to establish a maximum sustainable yield for all regular fisheries in Guyana. Work must continue to improve practices among inshore artisanal fishers while protecting their livelihoods and welfare, in line with the Fisheries Management Plan. It would also be beneficial to encourage, and support, Marine Stewardship Council (MSC) certification among commercial producers. Such support could include technical and financial assistance, stock assessments, regular and reliable data collection, and the testing of alternative production techniques. This will ensure that domestic resources are protected in the long run and commercial producers have access to key international markets.

C1.4.2 Carefully monitor and manage increased use of under-exploited deep-water resources. Guyana possesses an area of deep-water in its exclusive economic zone (EEZ) that is reserved for Guyanese producers yet is relatively unexploited. As priority, the Ministry of Agriculture must conduct scientific, biological and stock assessment studies to map all relevant EEZ and/or deep water resources and to better understand the limits of sustainable production. This would help reduce the environmental risks of production and attract new investors. These risks could be properly managed through an adequate process for

licensing/monitoring deep water fishing, with transparent processes and documentation. In addition, with the advent of offshore oil and gas drilling and production, fishing zones must also be demarcated and informed by data provided by scientific studies and stock assessments, in order to prevent future conflicts. Fishing methods and effort would also require careful assessment combined with training of local fisherfolk/fleets, to ensure that stock depletion rates are not accelerated, and the resource overfished.

C1.4.3 Promote and facilitate foreign direct investment (FDI) to boost growth of the aquaculture industry. Guyana currently exports 300–500 tons of fresh water fish produced through aquaculture. One hectare of properly maintained farms can produce more than 20 tons of fresh water fish. Therefore, a single 200 ha farm could potentially produce ten times more output than current total exports. The Ministry of Agriculture could work with the Guyana Office for Investment (GO-INVEST) to facilitate foreign direct investment (FDI) and boost growth in the industry. Such growth would entail developing a system of pond excavation, drainage and irrigation pipes, and predation defence measures. International partners will also help Guyanese producers to comply with sanitary standards, establish efficient logistics, and connect to import markets.

C1.4.4 Support technical improvement among small aquaculture producers. The Fisheries Department of the Ministry of Agriculture could establish a trading facility to support smaller scale farmers in accessing international markets including negotiating with trade importers, providing finance/export credit guarantees, monitoring quality and phytosanitary standards, and supporting compliance with voluntary sustainability standards. Leveraging successful FAO projects aiming to integrate aquaculture into small rice-based farming systems, the facility could also provide technical support for rice farmers looking to invest in joint aquaculture production. This would help to diversify production and increase farmers' incomes and resilience.

3.3.2 C2 Sustainable, productive and climate resilient Agriculture and Value-added Processing

3.3.2.1 C2.1 Sugar

Analysis

The sugar industry has experienced a long decline. Due to EU dismantling of quotas, exports fell from USD 123 million in 2011 to USD 49 million in 2017[35]. GuySuCo has been running losses for several years and more recently, has tried to reduce production, closing and now divesting unproductive estates (production fell from 231,000 tons in 2015 to 152,000 tons in 2017, a 27-year low)[36].

At same time, however, the Guyanese premium rum industry is growing and appears limited by supply constraints. Rum exports increased from USD 6 million in 2011 to USD 43 million in 2017, almost matching sugar exports. The contraction of sugar cane production and the expansion of rum production have exposed a challenge related to the sourcing of molasses, which makes up 40% of total rum production costs. While GuySuCo has set a production target of 52,000 tons of molasses by the end of 2017, Demerara Distillers Limited (DDL) has a

[35] Bank of Guyana

[36] GuySuco's annual reports, various press clippings

molasses requirement of about 70,000 tons and rum production is projected to grow. DDL has been "actively exploring" its potential role in the future of the sugarcane industry and closed a deal with the Special Purpose Unit (SPU) (of the National Industrial & Commercial Investments Limited, NICIL[37]) in March 2018, to use the canes in the estates that would be closed during the year to temporarily sustain its operations. However, this supply is insufficient and in June 2018, DDL began importing molasses from Nicaragua.

Under the *Vision 2040* development agenda, the sugar industry achieves high levels of productivity and sustainability through the adoption of advanced technology and management best practices, which makes it able to attract significant interest from private investors providing the Government with viable divestment options. It provides workers with improved job security and becomes more resilient due to longer term purchase agreements and diversification into new, competitive product markets.

C2.1.1 Assure GuySuCo supplies to the rum industry in the short-to-medium term, while maintaining cost reduction efforts. GuySuCo is already taking steps to restructure making it more competitive, such as scaling down production, lowering costs, privatizing inefficient units, and diversifying into new products. The rise of the local premium rum industry and associated molasses may prove to be an important source of demand. GuySuCo's priority is to focus on maximizing sugarcane yields and sucrose content and redirecting the largest possible share of its production to molasses in the near term. This could be done through a longer-term contract with DDL and Banks DIH Ltd., specifying minimum sales volumes and sustainable supply prices, but also increased productivity targets for incoming harvests. There may also be scope to provide molasses to CARICOM rum producers, leveraging trade agreements and low transport costs.

C2.1.2 In the long term, balance GuySuCo profitability and social impact. The company needs to invest in updated technology and facilities as well as to adopt radical cost reduction and productivity measures. Yet GuySuCo is the largest employer in the country with a staff of 16,000, and around 160,000 people (one fifth of the population) indirectly dependent on its operations. In addition, GuySuCo provides a wide range of social services to its workers and their communities, including health, education and housing. Given its large social impact, it is important to provide a safety net to protect those affected by any restructuring. One potential solution is a public-private partnership (PPP), in which a long-term concession (for example, 30 years) is given to a consortium of private investors, who are required to maintain a minimum level of production and specific social safety measures (for example, retraining employees, irrigation/drainage support to independent farmers).

3.3.2.2 C2.2 Rice

Analysis

Guyanese rice exports have successfully rebounded following the closure of the PetroCaribe deal. The PetroCaribe deal provided a significant boost to the Guyanese rice industry: production grew from 556,000 tons in 2009 to 1,058,000 tons in 2014[38], and exports grew from

[37] NICIL was incorporated as a Private Limited Company under the Companies Act, Chapter 89:01 in July 1990 and is a specialized agency of the Ministry of Finance. The primary objectives of the company are subscribing for, taking or otherwise acquiring, holding and managing the Government's shares, stocks, debentures or other securities of any company, co-operative societies or other corporate body.

[38] GRDB annual reports

USD 114 to 249 million over the same period[39]. This was in part a result of technical work by the Guyanese Rice Development Board (GRDB) to improve species, yields and quality control. The end of the deal represented a significant market challenge, since Venezuela was the destination of almost 40% of exports in 2014. After sales contracted in 2016 and 2017, successful diversification efforts drove new growth in rice exports. Moreover, demand appeared to outstrip supply as larger exporters stopped accepting new orders.

Despite growing demand, Guyana is finding it increasingly difficult to expand harvested areas. There is a growing scarcity of new, suitable harvest areas with adequate infrastructure. State land is typically leased for agricultural production and presents further challenges: low rental fees stimulate landlordism, where a few individuals hold a large share of leases and informally rent the land to producers. Producers cannot use land rights as collateral for loans and instead turn to cash advances from millers, on unfavourable terms. Limited access to finance also reduces investment in mechanization and cost saving equipment (for example, grain carts), limits productivity improvements. This reduces the incentive to expand into new land. The sector has also had more recent challenges with the quality of its international shipments.

Under the *Vision 2040* development agenda, the rice sector achieves high levels of productivity and sustainability with adoption of advanced technology, standards and management best practices, which improve its ability to compete in international markets because of a more reliable, strengthened and efficient network of suppliers and infrastructure.

Policy Recommendations

C2.2.1 Extend GRDB services to include finance, shared equipment and training. The technical quality of GRDB services to farmers has assured increasing yields on paddy production as well as quality control of export products. Strong productivity and a reputation for high quality have driven the industry's international success. It is a priority for GRDB to leverage its expertise in the industry and its strong financial position to expand into three other critical areas, through joint-ventures with specialized firms: finance, shared equipment and training. In some cases, GRDB may offer services directly to producers, in others, it may work indirectly through a private sector partner or through a public entity such as an Agricultural Development Bank or Agricultural Insurance Institution. The merits of each option should be assessed on a case-by-case basis, considering both GRDB's and potential partners' capacity, and in cooperation with the Ministry of Finance.

C2.2.2 Support development of more sophisticated financial products and services. The experiences of advanced players in other commodity markets, such as coffee cooperatives in Brazil, demonstrate that derivatives can be used to hedge price variations, allowing farmers to maintain stable profit margins. Derivatives can be an important source of finance, as a share of the crop is sold in advance for a given price, providing farmers with credit to buy critical inputs, such as pesticides and fertilizers. Insurance products can protect farmers against weather-related events, such as floods, but also against delays in payments from millers. GRDB could partner with a local bank, to create a financial facility with specialized products tailored to the industry.

[39] Bank of Guyana

C2.2.3 Support modernisation of production and build new skills among workers. There is a range of cost-reducing equipment that is inaccessible to small and medium farmers, such as grain carts and aircrafts. To tackle this, GRDB could acquire such equipment at discounted prices and lease it to individual farmers. If well structured, this could significantly reduce farmers' operational costs while also generating revenue for GRDB. It is also a priority to better train farmers regarding activities such as paddy grading, management of pest and disease and improved production practices. This must include consideration of natural farming and multi-layered, multi-cropped production techniques. GRDB could form a joint-venture with technical education institutes to develop a portfolio of distance-learning technical courses to provide a low cost and convenient solution.

C2.2.4 Provide incentives for changes in land ownership and increasing land conversion, leading to the expansion of rice cultivation. The pervasive landlordism issue could be overcome by a programme that allows farmers to buy their own lands. Rental agreements would be converted into financing contracts with reasonable terms (instalments not much higher than current rental rates) and the same entities that currently manage rental payments could manage the payment of instalments. It is also essential to identify suitable areas for conversion to paddy production that are currently idle or farmed using less productive techniques. The existing infrastructure on suitable land must be assessed (for example, access roads, airstrips, drainage and irrigation) and investments made if necessary. This information must then feed into a wider land use planning framework which coordinates the allocation of land for new estates with other land use demands.

C2.2.5 Improve the quality of cultivation dams and port infrastructure. To assure quick action to repair damaged dams, the priority is to consider replacing the currently decentralized system by a "dam repair unit", a centralized team focused on identifying and prioritizing damaged dams and coordinating repair efforts. In addition, the Georgetown port needs dredging in the short-term, and an additional deep-water port is needed in the long term, significantly reducing logistics costs.

3.3.2.3 C2.3 Fruits and Vegetables

Analysis

While production of fruits and vegetables is currently relatively low, there is strong growth potential for coconut and organic products. Current annual exports generate roughly USD 10 million annually and are relatively concentrated in two groups. Coconut products account for more than half of exports, while organic palms of heart account for around 20%. A global shift in consumer preferences towards healthier products underpins strong growth potential for both product groups. Amazon Caribbean Guyana Limited (AMCAR) is already expanding its capacity to produce organic agro-processing exports.

Guyana's coconut industry is focused on raw exports, limiting the local benefit generated from these natural resources. A lack of investment since the 1980s has meant that rather than developing domestic processing facilities (for example, to produce coconut oil and water), Guyana exports whole, de-husked nuts to neighbouring countries for processing. This dynamic is compounded by strong fiscal incentives available to processing industries in neighbouring countries, making it difficult for Guyana to compete.

The *Vision 2040* development agenda sees fruits and vegetables as a growth industry that adopts advanced technologies and management best practices to spur high levels of productivity and sustainability. This industry will also benefit from effective fiscal policies for production of certified organic products that can penetrate and successfully compete in new international markets.

C2.3.1 Support investment for the consolidation of estates and improving productivity techniques for coconut and other priority crops. Guyanese coconut plantations currently do not have sufficient scale to compete with their counterparts in Asia. Support is needed across production of all crops with high export potential, such as Guyana's 4Ps (peppers, plantains, pineapples and pumpkin) and 4Cs (coconut, citrus, cassava and carrots). Strategies to encourage consolidation include technical and financial support for mergers and the promotion of strong producer associations. Additionally, providing farmers with access to finance and technical advisory services for improving replanting and productivity is a priority. To do so, the Guyana Marketing Corporation (GMC) could support the development of financial services such as hedging through derivatives, credit associated with future exports and production insurance, through a joint-venture with local banks. The same facility could offer loans based on export guarantees, for procuring important inputs, such as seed, fertilizer and pesticides.

C2.3.2 Support farmers in making a shift to organic practices. Guyana struggles to compete in international non-organic markets due to a limited ability to comply with sanitary and phytosanitary standards, deficient logistical infrastructure and weak links to key export markets. However, the success of AMCAR, which accounts for one fifth of sector exports, demonstrates that Guyana can compete in more niche organic agroindustry markets. The largest constraint to growth is assuring a consistent input supply. This could be reinforced through technical and financial assistance.

C2.3.3 Adjust taxes in line with regional agro-processing markets. Guyana struggles to compete regionally as favourable fiscal incentives make it cheaper to produce in countries such as the Dominican Republic, Trinidad & Tobago and Barbados. As a result, Guyana typically supplies raw products for processing facilities abroad. Implementing similar fiscal incentives could help spark the processing industry in Guyana, in association with an effective promotion strategy led by the Guyana Office for Investment (GO-INVEST).

3.3.3 C3 Green, inclusive and high value-adding Service Industries

3.3.3.1 C3.1 Travel and Tourism

Analysis

The tourism industry is demonstrating improved performance despite several challenges. While the tourism sector's economic contribution is still relatively modest compared to other destinations in Latin America and the Caribbean, growth remains consistent with an average annual increase in visitation of 7% since 2008. The total direct economic contribution to GDP reached over USD 120 million in 2017, which places tourism among one of Guyana's top exports. The sector's main strengths are Guyana's rich cultural heritage with six ethnic groups and its sites of natural interest, with large primary forest cover and flagship attractions such as Kaieteur National Park. However, there are rarely secondary attractions developed around primary tourist sites, limiting the incentive to stay and explore in the region or visit local

communities. The lack of ancillary services (accommodation, restaurants, activities, entertainment) in these areas makes longer trips more difficult and less enjoyable. This is compounded by a lack of information regarding tourist sites and services.

The Guyana Tourism Authority is pursuing a strategy centered on "sustainable tourism" that is built upon the country's product strengths e.g. natural and forest resources, indigenous community and cultural heritage. The country is therefore prioritising tourism development that is community-led, nature- and adventure-based (e.g. bird watching, wildlife observation and adventure experiences). Guyana is also connecting to heritage and traveler networks that embody these core values e.g. "SAVE" travel network (i.e. travelers with particular interests in scientific, academic, volunteer and education.

The *Vision 2040* development agenda requires the travel and tourism industry to offer a portfolio of high-quality tourism packages to the domestic, diaspora, executive, nature, culture, and adventure tourism markets. The industry should also be supported by an efficient network of infrastructure, with fiscal policies, incentives and subsidies in line with regional comparators; have access to a sufficiently skilled local labour force; and be implementing a complementary, adequately-resourced and effective marketing campaign that raises the profile of Guyanese tourism internationally, allowing the sector to successfully compete in regional markets.

Policy Recommendations

C3.1.1 Strengthen and formalise inter-ministerial, cross-sectoral multi-stakeholder coordination. Tourism requires deep inter-sectoral linkages and partnerships with multi-stakeholders that represent the tourism value chain. These relationships will be defined through resource flows, joint actions and/or implementation of programmes across the spectrum of tourism destination management, regulation and licensing, marketing and development, training and capacity building[40], monitoring, reporting and evaluation. A main coordinating agency, the Department of Tourism, supported by the Guyana Tourism Authority, will oversee the interactions and be primarily responsible for delivering results and outcomes.

C3.1.2 Prioritise development of an attractive brand identity and design vernacular with standards for visitor welcome centres, key attractions and signage. A brand identity with recognisable visual images that can be promoted in print and electronic media form is the priority for destination Guyana. This should be developed in partnership with the private sector and other key stakeholders and be applied, where appropriate to tourist attractions and their surroundings, through better signage and services, hospitality training, community participation and communication systems.

C3.1.3 Target key markets and develop competitive tourism packages with high value added. Guyanese packages are relatively expensive and less competitive when compared with other nature-based destinations in Asia, the Pacific, Central America, and even the Caribbean. Nonetheless, four market segments have strong potential and should be clear priorities. First, the domestic market which has attractive growth prospects. Second, an active diaspora community that regularly visits friends and family in Guyana and could be combined with the

[40] A key priority also highlighted in "Tourism and the Sustainable Development Goals – Journey to 2030" by UNWTO and UNDP, May 2018.

domestic market and targeted for exploring the country's natural and heritage attractions. Third, a growing business or meetings/incentives/conferences/ exhibitions (MICE) tourism could also be a gateway to potential growth for tourism. Fourth, the increasing numbers of international travelers who are seeking authentic and new nature, culture and adventure experiences and who tend to spend more and stay longer in the destinations they visit. The competitiveness of retail services should be encouraged and promoted with development of comprehensive, off-the-shelf packages.

C3.1.4 Improve the quality of infrastructure, marketing and retail services upon which tourism depends. The ongoing and increased investment in marketing and branding will be complemented by structural improvements to infrastructure and services (see Chapter 5 below). "Overselling" leads to a loss of credibility and generate a backlash among booking agents, marketing firms, and travel writers, who are critical to building image and reputation. As a result, key priorities are to develop of lower cost and more reliable transport connections between the coast (especially Georgetown) and tourist attractions that are mostly located in the hinterland, that are adequately furnished with signage and relevant tourist-friendly language.

C3.1.5 Incentivise investment in quality accommodation, restaurants, attractions, and entertainment enterprises. These enterprises provide frontline services to tourists and should be incentivised (e.g. use of smart subsidies), to encourage use and application of standards for design, service excellence, operation and performance management systems. The core objective is to foster competitiveness, inclusiveness and sustainability in a sector that is labour-intensive, has a complex value chain and can deliver on green state outcomes in the short-, medium and long terms.

C3.1.6 Build a strong international reputation and quality brand for destination Guyana. To do so, it is essential to first focus on and gradually build up a reputation for uncompromising quality among Guyana's primary circuits, natural destinations and gateway communities (Kaieteur and Orinduik Falls, Rupununi, Kanuku Mountains, Iwokrama Rain Forest, Lower Essequibo (including Bartica and Marshall Falls), Mainstay Lake, Shell Beach, Mt. Roraima) before expanding efforts more widely. This must be complemented by application of Guyana's "sustainable tourism" core values that places people, communities and local heritage at the centre of tourism development objectives, ensuring direct benefits in training, job opportunities, infrastructure improvements and investment, among others. The development of inter-attraction connections is also essential for forming a handful of circuits that could be marketed as 'adventure hotspots' for day trips, at the minimum. This focused approach will enable more robust growth on the basis of quality principles and values of the sector.

C3.1.7 Instill a culture of evidence-based reporting and sector development through robust data monitoring, collection, sharing and reporting routines. Continue to develop and strengthen the amount and quality of tourism information available and improve its penetration in across the tourism value chain and in targeted market segments.

3.3.3.2 C3.2 Business Process Outsourcing (BPO)

Analysis

Guyana boasts several competitive advantages in BPO and growth has been strong. The Caribbean BPO industry is composed of more than 200 delivery centres and 70,000 agents,

more than doubling in only five years.[41] Many companies have located in Guyana due to its attractive proposition – an English-speaking workforce with a neutral accent, low labour costs, tax exemptions on ICT equipment, a tax holiday (10-year exemption of CIT), the same time-zone as New York and cultural affinity with the US market. Companies such as Qualfon Guyana Inc. and Nand Persaud International Communications have placed BPO as the fastest growing component of Guyana's ICT sector.

However, Guyana also faces fierce regional competition from Caribbean neighbours. Relative weaknesses include expensive and outdated communication services; unreliable and high cost electricity; high labour and payroll taxes; a scarcity of commercial real estate; and a shortage of high-skilled labour (technical and tertiary educated). Guyanese BPO firms must also deal with strategic threats from neighbours such as the offer of permanent corporate income tax reductions and exemptions and technology parks with modern office rental space.

By 2040, the BPO sector should be successfully competing in regional markets due to its reliable and efficient network of infrastructure and fiscal policies in line with regional comparators, whilst also drawing from a sufficiently skilled local labour force.

Policy Recommendations

C3.2.1 In the short term, mitigate the high cost of utilities. The main challenge to the industry is the high cost of utilities. The fastest method to reduce this would be a reduction of value added tax (VAT) on energy and telecommunications to registered BPO firms.

C3.2.2 In the long term, provide modern facilities to BPO firms through new technology parks. Technology parks could help mitigate telecom and energy challenges with localised alternative energy solutions (solar, wind) and dedicated broadband/services connections. This could provide cheaper, more reliable utilities to a focused group of firms with large job creation potential. With large amounts of underutilised real estate in Guyana, technology parks could also form good investment opportunities. A technology park can house a number of major projects from both the private and public sectors, including smaller-scale projects like ICT start-ups and university labs as well as larger BPO firms.

C3.2.3 Align the sector's tax policy with competitors, especially payroll and corporate income tax. Guyanese payroll taxes are much higher than those of regional industry leaders, such as Costa Rica and the Dominican Republic. A 50% reduction to PAYE tax for BPO firms could reduce the competitiveness gap without requiring significant changes to tax structures. The sharp increase of corporate income tax after tax holidays end – from 0% to 27.5% - may induce firms to leave Guyana when the holiday expires. Staggering the increase would allow businesses to more easily adapt. For example, in place of a 10-year holiday of 0%, BPO firms could be offered a 5-year holiday of 0%, a subsequent 5-year holiday of 15%, finally increasing to 27.5% after 10 years.

C3.2.4 Assure a steady supply of qualified labour. A reasonable supply of trainable, English-speaking workers is currently a key advantage for Guyana. However, the advent of oil and gas may attract workers away from BPO and change this balance in the coming years. To address this, a public-private agency focusing on recruitment and training, thereby reducing entry costs to new workers, could help mitigate this risk. Technical and vocational institutions should

[41] Investing in the BPO Sector in the Caribbean, IDB, 2015

also be mandated to reorient their skills development programmes towards the needs of the diversified and restructured economy (see 2.7.2 below).

3.3.4 C4 Strengthening the Business Environment

3.3.4.1 C4.1 Institutional quality and public sector services

Analysis

Public perceptions of institutional quality are low, with widespread corruption, key bottlenecks in the judiciary and an outdated property rights framework. Despite some legislative progress in promoting anti-corruption and transparency, the Government lacks a system or institution to ensure policies are followed and agencies work effectively. The judicial system relies on inaccurate and cumbersome processes and is not held accountable for the quality of service it provides. The property rights system has historically struggled to meet demand and lacks cross-sectoral coordination affecting the efficiency of all property-based markets.

Guyana's institutions and public services will deal with commercial claims and disputes in a timely and efficient manner; allocate land leases for residential and commercial development transparently and efficiently, whilst also supporting effective secondary land and property markets. These will provide businesses with low cost and accessible means of registering intellectual property rights with the assurance that those rights can be protected and upheld.

The *Vision 2040* development agenda requires a sound business environment to develop local industry and promote increased trade with traditional and new trading partners (see section 3.6 below). Particular emphasis should be placed on encouraging small business development (SDG 9.3) and providing equitable access to financial and needed support services.

Policy Recommendations for Corruption and transparency

C4.1.1 Develop a government-wide procurement accountability framework to support enforcement and strengthen the Public Procurement Commission's (PPC) capacity to implement. Current procurement procedures are neither followed nor effectively enforced across Government. A clear accountability framework would provide a first step to ensuring all public agencies have a clear incentive to follow set procedures. To ensure this is effective, a public review could evaluate the key bottlenecks within the public procurement system to better target institutional improvements. Possible measures include increasing headcount, training programs, and improving communications with other agencies.

C4.1.2 Set up and mandate an independent body to develop and promote government-wide anti-corruption and transparency measures. This would begin with an assessment of the most suitable institution to become the central point for the design, promotion and implementation of such measures. Such a review could be undertaken by a task force, identified by the Government, and engage civil society and other stakeholders. The selected institution could work closely with international organizations such as the UN and the Commonwealth Secretariat to identify the most effective ways in which it can champion anti-corruption measures across Government.

Policy Recommendations for Dispute resolution

C4.1.3 Modernise and improve the judicial system by fully digitising record keeping in courts and hiring additional magistrates and judges to relieve bottlenecks. Data collection

and management remains a key barrier to the efficient functioning of court proceedings. The transition to a comprehensive digital record keeping system would reduce the burden on judges and legal practitioners, improve the reliability of proceedings, and help keep to time standards set under the codes of civil procedure. This transition could be supported by a review of recruitment needs across the different functions of the judicial system, responding in particular to reports of shortages of judges and magistrates.

C4.1.4 Develop a monitoring and evaluation (M&E) framework for the judicial system and assign performance targets. Currently, judicial processes are not subject to performance measurement efforts. An M&E framework can provide the foundation for an incentive system for public workers to drive improvements in quality of service. The Chancellor of the Judiciary will set quantitative, time-sensitive, measurable performance targets and will be held accountable by the Ministry of the Presidency and the Cabinet.

C4.1.5 Establish a task force of private sector creditors and legal firms to study the key issues that underlie insolvency procedures, in particular gaps in data collection, monitoring and tracking of new businesses. The task force would develop a series of recommendations for the Government, and in particular Creditinfo Guyana Inc. (Guyana's Credit Bureau).

C4.1.6 Review and assess potential methods to support the development of arbitration services, to relieve pressure on the court system. The demand for arbitration is also expected to increase with the advent of oil production. The Ministry of Legal Affairs could be proactively preparing, for example, by increasing funding for vocational training programs.

Policy Recommendations for Property rights

C4.1.7 Reform government-wide land-use planning legislation to coordinate leasing across all institutions and reduce approval times. As an outgrowth of the recommendations for a Land Policy, the priority is to review legislation to ensure that each land use agency has a clear and distinct mandate and the power to execute its responsibilities under its specific mandate. In particular, systems must be put in place to resolve conflicts between authorities in a timely manner. Broad zoning regulations could be set by a single coordinating agency, in consultation with the Cabinet. To relieve current bottlenecks in the Ministry of the Presidency and Cabinet, license approvals could be delegated to front-line agencies.

C4.1.8 Develop a transition plan towards a market-based allocation and pricing mechanism for land lots, with clear support mechanisms for low-income families. A market-based land allocation system allows for a more efficient allocation of divested public land among residential and commercial developers, and for prices to reflect the characteristics of the area. This will facilitate a stronger and better-functioning secondary land market, relieve administrative pressure on both the Central Housing and Planning Authority (CHPA) and the Lands Registry, and encourage more intensive development of lots in more desirable and built-up areas. This transition must be accompanied by strong support mechanisms for low-income families such as the provision of low-income housing units and associated finance.

C4.1.9 Relax the conditions on construction licensing to encourage the development of formal construction. Informal construction is costly and dangerous to local communities because it does not follow zoning guidelines or building standards. The number of tax payments required for approval of a formal construction license could be lowered, alongside other measures to reduce the cost of formal licensing procedures and hence, increase uptake.

C4.1.10 Update the legal framework for intellectual property and support its implementation with an efficient administration and enforcement effort. Guyana's current framework is outdated and piecemeal. A single, comprehensive review is essential to bring intellectual property rights in line with international best practices and give investors, both domestic and foreign, confidence in their rights to returns. Registration and management procedures could be adjusted in line with the new legislation and new enforcement efforts established. The widespread infringements currently seen in patents and trademarks are an immediate priority.

3.3.4.2 C4.2 Business Regulation and Private Sector Services

Analysis

Competitive tax policy, public lending programmes and non-distortive labour market regulation support business operations though the quality of public administration is low**.** Due to the availability of tax holidays, effective tax rates are generally low for the region however, a high number of payments and lack of front-line support drive high administrative costs. Red tape and rent seeking behaviour raise the costs of starting and operating businesses. While businesses do not report access to credit as a key constraint, financial markets are relatively underdeveloped, especially for small to medium enterprises. Labour market regulation is simple and efficient though its impact is limited by Guyana's large informal sector.

The *Vision 2040* development agenda prioritises minimisation of the administrative burdens of complying with business tax obligations, better quality business support services and competitive and accessible private sector credit options for businesses of all sizes. Priorities are also to create decent jobs in newly emerging sectors from the just transition to a green economy, promoting protection of workers' rights, adequate skilling and re-skilling of the labour force and to ultimately reduce the size of the informal sector through programme support for the transition to the formal sector.

Policy Recommendations for Business Taxes

C4.2.1 Review the potential to consolidate tax payments from businesses, in particular corporate income tax. Tax obligations have a high administrative burden. Reducing the number of payments could reduce the workload for both businesses and tax authorities. It is also a priority for the Ministry of Finance to consider the case for switching to graduated tax holidays to help businesses more slowly adjust to the end of tax breaks.

C4.2.2 Evaluate the digitisation of import and export taxes and assess the need to refresh online documentation and provide additional guidance and support. An evaluation would ensure that all online processes are accessible and functioning correctly, including online forms and submissions. The evaluation could gather direct feedback from end-users, especially small enterprises and the self-employed, as well as experiences with relevant support teams.

C4.2.3 Evaluate the benefits and risks of repealing import duties in situations where long-term exemptions are in place and there is little domestic production. Import duty exemptions exist for a relatively wide range of productive equipment however, applications are often rejected as the purchased goods are not deemed eligible. The process of writing and evaluating exemption applications raises costs for both businesses and the tax authorities. The

rationale for import duties is typically to protect domestic products from international competition. To simplify the tax system, the Guyana Revenue Authority (GRA) could consider the case for repealing import duties on goods for which long term exemptions are in place or which are not produced domestically.

Policy Recommendations for Access to credit

C4.2.4 Establish a task force of private sector creditors (see. 5.1.5 above) to review appropriate due diligence procedures and required support from Guyana's Credit Bureau. Although businesses do not report access to credit as a key constraint, commercial interest rates remain high and there is a large share of non-performing loans. A review could consider whether due diligence procedures can be made more accurate and more efficient to improve the accuracy of credit checks and reduce costs. This would include communications between private sector creditors and Guyana's Credit Bureau. The review should also consider actions for discouraging discrimination based on ethnicity, gender and other factors, while prioritising the merits of the business operation.

C4.2.5 Establish a clear registry for property rights. Ensuring that a single authority coordinates and monitors the issuance of land leases across all agencies is a priority. Once established, Guyana's Credit Bureau could work with this agency to create an accessible, accurate and up-to-date registry of property rights available to private sector creditors to cross-check collateral.

C4.2.6 Continue to offer loans to small-to-medium enterprises (SMEs) through the Small Business Bureau (SBB) and work with private sector creditors to expand the options SMEs have for posting collateral. Access to credit is a more significant issue for small-to-medium enterprises who typically struggle to meet collateral requirements, which currently almost exclusively focus on real estate. To alleviate this, the SBB could work with private sector creditors to expand the types of collateral they accept and help them better manage the risks of lending to SMEs. The SBB could also offer SMEs education and awareness programmes on procedures for applying for loans.

C4.2.7 Develop a long-term strategy to replace public lending programmes with greater lending on private capital markets. Large firms tend to raise finance through public borrowing programmes as opposed to capital markets. In the longer term, it would be prudent to encourage the expansion of capital markets, both through developing domestic capacity to issue equity, debt and other long-term instruments, as well as promoting the Guyana Stock Exchange to domestic and international investors.

Policy Recommendations for Labour market regulation

C.4.2.8 A workforce skilled at the right levels will help to attract investments needed for a just transition to the green economy. To promote a versatile workforce, assessment of any barriers to the mobility of skills across sectors should be undertaken and investments prioritised for continued upgrading of skills in anticipation of the transition. Skills training must be considered during planning, design and implementation stages of all sector- and project-level planning, with strong private sector involvement and financing. Training and retraining as a part of social protection safety nets are prioritised for workers disadvantaged by structural changes in the economy and/or at enterprise levels. The suitability of tools such as unemployment insurance, employment-intensive investment incentives, public employment

programmes and introduction of a social protection floor should be explored through inclusive social dialogue with labour market stakeholders.

C4.2.9 Apply internationally recognized labour standards ratified by Guyana for better occupational safety and health (OSH) standards and better working conditions as new ways of work and employment emerge. Measures to improve and create awareness of OSH standards for technologies, work processes and new materials related to the transition will be undertaken. This includes identifying any risks resulting from climate change, resource extraction or related to human health and the environment, and development of adequate prevention and protection measures.

C4.2.10 Reduce the size of the informal sector in Guyana and help businesses, especially microenterprises, to transition into the formal economy. It is essential that any strategy developed to reduce the size of the informal sector begins with a review of the central types of activities in the informal sector and the reasons for its persistence, led by the Ministry of Social Protection. Priority areas include ease of business registration and meeting initial tax obligations for small sized businesses. Formalised collaboration with other administrative services must be pursued (e.g. labour inspections) to expand information outreach and services, particularly in remote hinterland areas.

3.4 Development Objective D: Transition to Renewable Energy[42]

3.4.1 Introduction

In 2016, 85% of Guyana's total installed power generation capacity consisted of fossil fuels, whilst renewable sources, including biomass (bagasse and rice husk) and small installations of solar PV and wind turbine systems reportedly accounted for 15% of installed capacity[43]. It is estimated that the transportation and power (electricity) sectors consume three-quarters of total imported petroleum products; with the power sector being the country's largest energy user (36%); followed by the transport sector (35%); agriculture, fishing and mining (21%); the residential sector (4%); and industry/manufacturing (3%).

Currently, 82% of the population is connected to the national grid, with the highest concentration in urban areas. 30% of the non-grid connected rural population has access to electricity through Government of Guyana initiatives that promote photovoltaic installations. Per capita electricity consumption in 2016 was on average 1,069 kWh, putting Guyana well below the average of other upper middle income countries (3,404 kWh/capita).

Current financing for the upgrading of the national electrical grid and development of renewable electricity supply is provided from national budget and loans from multi-lateral or investment banks. The Government of Guyana is still reviewing its investment options and developing its sector strategy for increasing levels of utility-scale solar PV electricity sources for the energy transition, in accordance with commitments made to the Sustainable

[42] For a more in-depth analysis, see Annex A(4): "Analytical Evidence to Support Guyana's Green State Development Strategy: Vision 2040 – Transition to Renewable and Clean Energy".

[43] Personal communications with GEA energy consultant (D. Fernandes, GGGI) suggest that the actual electricity generation from renewable energy sources may only amount to about 5%.

Development Goals (#7: climate change) and under the Paris Agreement in respect of its Nationally Determined Contributions (NDC).

The backdrop to prioritising the renewable energy transition is the country's track record and international leadership for protecting its forests as a global carbon sink[44] (see section 2.3.5 "Forest Resources" above) and the rapid global advancement in materials science, battery technologies and electric systems, among other technologies, which, in theory makes a renewable energy transition more commercially feasible.

The opportunity to change the future course of the country's development by driving a transition to renewable and energy efficient systems is an important corollary to the economic diversification strategy presented above (Chapter 3). This would require a robust energy sector action and investment plan developed from feasibility assessments of the identified energy source mix and renewable energy investments in hydro-, wind-, solar PV and biofuel-based sources.

Furthermore, and from a development perspective, the country still has to provide energy access and security to the remaining 10% of hinterland communities that are either without an energy supply or that do not enjoy a reliable 24-hour supply. Whilst distributed systems (solar PV panels) have provided electricity to households and industry in hinterland areas, reliability of supply is problematic and a hindrance to national development objectives that seek to close gaps in disparity between coastal and hinterland communities and foster development of industry. These objectives relate to energy as a critical national infrastructure and need that is also discussed in the sections that follow.

3.4.2 Outcomes

By 2040, Guyana will:

- *Transition to use of near-100% renewable and clean energy sources for electricity generation sourced from the country's natural capital and in accordance with its international agreements and commitments.*
- *Mandate energy efficiency technologies and practices in existing and new buildings and by 2030 double the rate of improvement in energy efficiency.*
- *Shift to a low carbon emissions transport sector and use of higher efficiency vehicular fleets and/or more diversified fuels.*

3.4.3 D1 Renewable and Clean Energy

Analysis

The Department of Energy (under the Ministry of the Presidency) is leading efforts in the energy sector transition and development (including oversight of oil and gas production). To ensure the overall coherence of Guyana's energy policy in both the renewable and non-renewable sub-sectors, the Department of Energy will coordinate, advise and/or bring coherence to policy implementation[45] across existing energy sector agencies, including the

[44] Particularly as part of its ongoing agreement with the Government of Norway for the Guyana-REDD+ Investment Fund (GRIF).

[45] From discussions with Dr. M. Bynoe, Director – Department of Energy.

proposed Petroleum Commission and electricity service providers currently under the purview of the Ministry of Public Infrastructure, e.g. the Hinterland Electricity Company, Inc., and the Guyana Energy Agency (GEA). In the longer term, consideration will be given to ensuring adequate oversight of the work of the Department at the level of a responsible minister and/or by the National Assembly.

The *Vision 2040* development objective requires that near 100% of Guyana's electricity is generated from renewable sources - principally the country's natural wealth – significantly reducing the need for imports of HFOs and dependency on fossil-based energy, and in line with SDG #7 objectives. Ensuring universal energy access and lowering the final cost of electricity to consumers are also priorities.

Natural gas – a finite, fossil fuel-based resource – is abundantly available as a by-product of oil and gas production and is considered a more attractive, feasible, cleaner fuel for stabilising the national grid. Significant investment is needed to land natural gas from offshore sources and to construct the duel fuel power plant, which can be completed in the medium term (3-4 years). The plant will therefore likely operate over a design life span of 20-30 years, which makes it moreso, a longer term solution that could be at odds with the country's goal to transition to non-fossil based electricity.

However, as a cleaner and transitional energy source, natural gas will in the medium term, enable the country's renewable energy transition as a cheaper base fuel (replacing HFOs); but natural gas prices are still subject to exogenous factors. The Guyana Green Economy Modelling Study (Chapter 1) demonstrates that continued reliance on fossil fuel energy is subject to price fluctuations that will have consequences for consumer prices and future GDP growth. In developing the sector transition and investment plan therefore, the required trade-offs for natural gas use will need to be assessed, stated and periodically re-evaluated in the light of the country's renewable energy transition goals.

3.4.3.1 Policy Recommendations

D1.1 A strategic investment plan must be developed to guide investments that support the transition to renewable energy. The plan to be developed by the Department of Energy will elaborate on the transition to renewable and clean energy, supported by comparative studies that ensure transparent and orderly development of the sector through clearly defined procedures and practices including reviews of the local content plan with priorities for re-skilling and re-tooling local labour; building awareness of the Guyanese public on available opportunities and activities in the development of energy; and developing guidelines for promotion of energy efficiency and clean energy use across all sectors. Studies must also take into consideration the impact on the economy including the labour market, caused by the shift to renewable energy and weigh the comparative levels of carbon emissions from the options under review.

D1.2 Transition to an optimal mix of renewable and clean energy in the energy sector. The transition to renewable and clean energy will rely more on the country's natural wealth for its energy security than on costly fuel imports. This includes use of a mix of hydro- and solar power, biomass and wind energy sources. Hydro power is a key energy source in the transition mix, given the instabilities of solar PV panels. Current estimates put the transition rate to renewable sources at about 63% by 2035. Whilst the pace of transition must take

account of considerable local realities e.g. availability of natural gas, lack of investment financing, remoteness of the terrain, lack of local technical capacity and lack of infrastructure[46], the stated NDC target of 'near 100% renewable energy transition' remains the goal. This means that while the sector assesses the available feasible options for driving the transition over the medium term, it is obligated to periodically review and report on its continued progress towards the "near-100%" goal. The ambition requires a willingness to be more proactive in significantly advancing towards the target.

D1.3 Commission feasibility studies to support the transition. Feasibility studies are needed to assess and inform the potential and cost of different renewable and clean energy infrastructures for electricity generation and in different regions of Guyana. These will consider and assess, *inter alia,* energy demand trajectories and growth forecasts (medium and long term), changes in industry and consumer behaviour resulting from the economic restructuring and diversification, potential vectors for transport fuel, environmental feasibility and social impact.

D1.4 Harmonise legislation governing and regulating the energy sector to enable the transition to renewable energy. All energy legislation and regulations will be reviewed for the purpose of harmonizing and streamlining development and operations for the long term. The harmonization will consider the existing energy agencies, their mandates and oversight for the purpose of policy coherence, managing the energy transition and measuring progress against targets. Supporting studies must also provide recommendations for any revisions to or new legislation or regulations needed for integrating the renewable/non-renewable energy sub-sectors. The objective is to maximise efficiency and results and minimise duplication and overlap. Improvements to required regulations will also specify procedures for guaranteeing transparency in procurement processes, for safeguarding social and environmental aspects, building awareness and maintaining trust among stakeholders and with local and international investors.

3.4.4 D2 Renewable and Clean Energy Use in the Power Sector

Analysis

The transition to use of renewable and clean energy sources in the power sector is also regarded as essential for reducing the sector's carbon emissions, consistent with objectives of the *Low Carbon Development Strategy (2013)*. The premise is that a power supply based on renewable energy sources will provide a more affordable source of electricity for residential and commercial consumers and fulfil the country's commitment to the mitigation of global climate change and energy efficiency under the Paris Agreement.

Power supply capacity is in excess of demand by less than 15%. Guyana's electrical grid has therefore insufficient or low redundancy in power generation, which makes it unreliable and unstable. It is also costly to maintain because of expensive fuel costs, high technical and commercial losses. Meanwhile, the high cost and low reliability of grid power has led to a substantial share of the industrial and business community moving to generate their own

[46] The local private sector in particular, does not yet have the capacity to handle large investment projects or the ability to raise funds in international markets.

power "inside-the-fence". There is currently over 70 MW of installed capacity being operated by private sector businesses for the security of their own electricity supply.

There is certain ambition to transition the electricity supply to renewable energy sources and away from use of HFOs. However, there are roadblocks related to the slow pace of rural grid electrification, as well as existing limitations on local capacity to finance, manage, design and develop utility-scale renewable energy investments. Utility-scale solar PV panels can be constructed in the short term, usually one year; but these still present a few technical challenges to achieving grid stability. Secondary goals are to improve the percentage of grid-connected households in rural areas, which stood at 90.7% in 2018[47], to 100% in the hinterland by 2025; and for a consistent 24-hour electricity supply to the main regional towns (see Section 3.5 below).

3.4.4.1 Policy Recommendations

D2.1 The immediate focus is on fortifying the national electricity grid. Given its instability and unreliability, the first investment priority is to efficiently and effectively stabilize the grid in order to transmit and distribute a more reliable supply of energy. A key objective is to encourage business growth. Guyana Power and Light Limited's (GPL's) transmission and distribution expansion and modernisation plan will be expedited. The short term target (2019) is for 47km of the planned 83km of 60kV lines to be completed, along with the upgrading of 92 km of medium voltage and low voltage distribution networks.

In the medium to long term, GPL must complete the feasibility analysis (in collaboration with the Ministry of Infrastructure's Work Services Group) for installing 322 km of 230 kV and 395 km of 500 kV transmission lines (2020-2025) to support cross-border trade to Suriname and Brazil, and the gradual interconnection and/or installation of new lines for the existing 69kV transmission lines of the Demerara-Berbice Interconnection System and the Linden Network. GPL will consider medium term options for retaining newer heavy fuel oil (HFO) generating units, decommission of the aging, inefficient light fuel oil (LFO) units or install new generating units with dual fuel capacities (natural gas/diesel). A target for 99% reliability of supply for the local power sector by 2025 has been established.

D2.2 Improve the financial performance of GPL. The financial performance of the public utility is problematic and should be incentivised for performance improvement. GPL's flexible tariff adjustment mechanism, which is linked to fuel prices as a hedge against spikes in petroleum product prices over short time-lags, must be more closely monitored and enforced for effectiveness. In principle, this mechanism could allow GPL to recover its losses.

D2.3 Attain higher levels of renewable energy penetration. The sector investment plan based on feasibility studies on the grid should be developed and should indicate the pathway and sequencing for advancing to renewable energy-based power supply, in spite of current roadblocks. GPL must also complete a comprehensive assessment of energy supply needs collaborating with businesses to understand future demand for energy as the economy moves through its structural transformation[48].

[47] Source: Guyana Energy Agency, "Sustainable Development Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all"; March 18th 2019 presentation.

[48] The immediate deployment of a series of solar PV power combined with storage will (i) reduce the demand on HFO generators, provide more time for their maintenance and prolong their useful life, while significantly reducing the use of fossil

D2.4 Conduct feasibility studies to identify the best opportunities for technical and financial support. A range of other feasibility studies will be required to determine the cost potential of different renewable sources of energy for the varied categories of end users across the country. These should consider technical points such as the broader power system needs in terms of grid development, flexible mechanisms and storage needs for the different renewable energy technologies, and environmental feasibility and social impact. Analyses of grid integration and production will provide recommendations for an appropriate technical and commercial framework for higher levels of renewable energy penetration. Private sector participation and involvement is a priority for the development and installation of utility scale solar, hydro and wind farms and must be encouraged and supported wherever feasible.

D2.5 Pursue distributed/off-grid generation systems, where feasible. Distributed/off-grid or onsite generation is a modular, decentralized and more flexible technology suited to small independent producers located for example in Guyana's hinterland. They would be expected to consume most of the electricity generated and to sell any excess to the electricity grid. Such systems may also be contemplated for large industrial and commercial clients, new housing developments and residences. To the extent feasible, the removal of the interim cap of 100kW-1.5MW for grid connections of the independent power producers (IPPs) should be considered together with agreement on payment systems (e.g. net-metering, met-billing, feed-in-tariffs).

The tariffs may be set after careful study, by the type of technology used (e.g. solar PV, wind, biomass), installed location (e.g. rooftop, ground mounted), by region or on the basis of performance to incentivise efficiency. Alternatively, tariffs may also be computed from production cost and transmission load flow analyses. An updated regulatory framework will also be required for use and application of feed-in tariffs, net-metering and/or net-billing. The studies should examine requirements for flexibility that is shaping modern power systems, along with suitable and viable capital improvement projects to modernize the grid.

D2.6 Implement other feasible measures to support the modernization of the national grid. In the medium term, studies will likely yield a range of measures to promote and enable smart grid development. These may range from user guidelines to technologies, legislation and capacity building measures. Whilst a grid code is required for small electricity generation systems (less than 1.5MW), full implementation of the existing national grid code will highlight the parameters for connecting to the grid and ensure safe, secure and proper functioning of the electric system and to control connection and use by IPPs, consumers, or other networks. This is required ahead of any proposed or planned extensions of grid networks to Roraima State in Brazil. Associated with these measures are standardised/model power purchase agreements (PPAs) for IPPs and guidelines for an IPP framework. On the technology side, use of automatic (instead of manual) generation controls ensures a smarter balance between generation and load, and greater stability and efficiency of the grid. A further consideration related to adoption of smart grid technologies is capitalizing on opportunities for robust database development and tracking of carbon emissions, energy efficiency (see section 3.4.5 below) and energy demand. As Guyana's population and GDP grows from an expanding and diversifying economy, a rise in energy demand and carbon emissions is projected[49]. Whilst

fuel, while (ii) the use of industrial-scale battery storage will strengthen the DBIS grid via fast-responding load following as well as voltage and frequency support, as part of the valuable ancillary services that large storage systems provide.

[49] This is projected in the Guyana Green Economy Modelling Study, see Chapter 1 above.

these may be mitigated in theory, through increased energy efficiency investments that reduce energy demand, the trends need to be accurately measured, monitored and evaluated in association with consumer awareness programmes and the data shared in national reporting exercises.

D2.7 Hinterland and rural electrification should emphasize, where feasible, smaller, modular systems. Expand the Hinterland Electrification Co. Inc. (HECI)/Ministry of Public Infrastructure programmes in rural electrification emphasising micro-grids, solar photovoltaic systems with batteries, run-of-river and river dam hydro, and hybrid renewable energy systems using photovoltaics or wind with biodiesel and other biofuels. The feasibility of these schemes must be supported by studies on new and proven methodologies for financing rural electrification from both public and private sources, and to ensure stable funding sources.

D2.8 Build the capacity of energy sector staff, entrepreneurs, rural and hinterland communities to implement and manage energy projects. Training and educational programmes are required from technical and vocational institutes, tertiary and professional development institutions to provide the support skills needed for the energy sector e.g. project and construction management, instrumentation, equipment installation, repair and maintenance. GPL and sector regulatory staff will benefit from skills training in installation, operation and maintenance programmes; as well as specialized training in negotiations and agreements, supply/market conditions and prices, particularly in view of upcoming interactions with large investment multi-nationals. Priority areas for training will be developed jointly with important stakeholders such as, employers' and workers' representatives and TVET institutions.

3.4.5 D3 Energy Efficiency

Analysis

Energy efficiency is the green economy intervention for promoting investment in low carbon technologies, reducing energy demand and accelerating the transition from fossil-fuel based subsidies. The modeling results (Chapter 1) demonstrate that investments in energy efficiency could reduce significantly electricity demand and its cost of generation, which makes investments feasible. The measures are both short- and long-term. Short-term policy measures are intended to increase energy-savings and have attractive pay-back periods, while long-term measures improve infrastructures such as the electrical grid by using less energy with co-benefits in better social and environmental outcomes. While grid and utility scale renewable energy transition have a medium- to long term outlook, energy conservation measures can be implemented across sectors in the short term. The recommended policy measures cover use of institutional tools e.g. building codes, measures for use of high efficiency appliances and lighting, industry and fuel transport efficiencies (covered in the section below).

3.4.5.1 Policy Recommendations

D3.1 Energy efficiency measures for public and private buildings will be phased in and become mandatory for new buildings (commercial and industrial) by 2030. The Guyana Energy Agency (GEA) is piloting initiatives for promoting energy efficiency in public buildings. Based on results and findings, the GEA will develop an implementation plan supported by legislative measures, as feasible, to phase in energy efficiency measures along with a new

national energy efficiency building code to be completed by 2021. Older buildings will need to be retrofitted to meet the minimum standards. Requirements must cover existing and new industries and new buildings, along with specifications for LED technologies, measurement and monitoring energy efficiency use and/or savings. This must be complemented by awareness raising and widespread application of best practices for maximum benefit. Updated legislation and an energy efficiency database with monitoring indicators is prioritised in order to drive the transition, track levels of compliance and support national reporting particularly on carbon emissions with accurate data and analysis. GEA will develop the business case for energy cost savings based on results and findings of existing initiatives. The programme will be complemented by monitoring systems, indicators and a database that tracks and measures compliance and progress to facilitate reporting at national levels for the country's Nationally Determined Contributions under the Paris Agreement.

D3.2 Establish a resource efficiency initiative that focuses on electricity savings for the manufacturing sector[50]. Given the high cost of electricity for manufacturing, a sector-wide resource efficiency initiative focused on electricity savings will enhance productivity of the industrial sector by reducing costs; serve as a driver for the transition to renewable energy sources and energy security; and reduce the generation of pollutants, both conventional pollutants such as particulate matter and sulphur dioxide, and carbon emissions.

Industry plans should therefore establish and link sector goals with the rationale for a resource efficient and low carbon manufacturing sector; quantify sector and sub-sector targets for decoupling resource use (energy, water, raw materials and chemicals) from industrial output; implement any incentive programmes to assist industry in meeting set targets; establish verifiable databases with protocols for information sharing and dissemination, and a comprehensive monitoring and evaluation scheme.

D3.3 Minimum energy performance standards, labels and certification for use of high-energy efficiency equipment and appliances will be mandatory by 2030. Minimum energy performance standards, labels and certificates are required to phase out inefficient products from the marketplace e.g. air conditioners, refrigerators, motors, lighting. The goal is zero net energy consumption in buildings. Standards and codes should become mandatory by 2030, allowing a sufficient and realistic period of adjustment for commercial and industrial enterprises. Such programmes need to be complemented by monitoring systems, indicators and a database that track and measure compliance and progress to facilitate reporting at national levels on the country's Nationally Determined Contributions under the Paris Agreement.

D3.4 Review and update current incentives schemes to accelerate the phase out of inefficient equipment and appliances. Guyana already provides incentives for encouraging energy efficiency. However, a comprehensive review of existing fiscal schemes is necessary to yield opportunities for consolidation and improvement and new proposals for accelerating the phase out by 2030.

D3.5 Build local awareness and understanding and business cases for energy efficiency. It is important for the Guyanese public to understand the long-term goal of energy efficiency, its

[50] These recommendations are developed from the analytical work of the UN Industrial Development Organisation (UNIDO) as reported in Annex H: "Guyana Green Industry and Trade Assessment".

benefits and the role of each stakeholder. The Department of Energy and its line agencies as partners and leaders in this national effort, will develop and make available to the public and to consumers, information and other user tools e.g. web-based estimators that explain the renewable energy transition, the benefits of energy efficiency, to encourage enthusiasm and participation in corporate energy efficiency programmes.

3.4.6 D4 Sustainable Transport Sector

Analysis

Guyana imports all its vehicles for lack of any available auto assembly operation. All imported vehicles are either used or reconditioned and the country currently restricts vehicles imported into the country eight (8) years and older (from the date of manufacture to the date of importation). The Environmental Protection Act also limits sales of new and second-hand imported vehicles. The projection is that all vehicle types are expected to increase from 2018 to 2030, with private passenger cars and minibuses as dominant fixtures on roads in the longer term. With 35% of the country's carbon emissions from the transport sector, the objective is for an aggressive vehicle fleet modernisation program to curtail the anticipated long term growth of carbon emissions.

The year 2016 recorded a total of 1,580 traffic accidents[51] were recorded in 2016 resulting in 38 pedestrian fatalities. From 2010 to 2016 records show an average of 110 fatalities, 331 serious injury cases, 448 minor injuries, and 721 in damages. From a policy perspective, the National Land Transport Strategy and Action Plan (2016-2026) highlights traffic safety as one of the major concerns that need to be addressed.

The Vision 2040 development objective prioritises a sustainable transport sector as a check on increasing carbon emissions in the sector. Studies on the feasibility of options for relevant infrastructure, hardware, transport fuels and a more efficient vehicular fleet will be considered for decisions on the final transition plan.

3.4.6.1 Policy Recommendations

D4.1 Establish vehicle and emission standards as an immediate priority for climate change mitigation and pollution control. The priority is to begin the transition to a low-carbon transport sector by 2040. Objectives are to reduce the demand for imported fossil fuels for vehicular transport, increase vehicular consumption efficiencies and reduce local environmental and health impacts from the operation of transport vehicles. Targets have been set for penetration of use of compressed natural gas vehicles of 3% of registered vehicles by 2035. An immediate step towards this objective in the short term is increasing the octane level of gasoline by blending with domestically produced alcohol from sugar cane and/or incentivising the transition to an electrical vehicle fleet in the public sector.

D4.2 Phase in vehicle standards and routine emissions testing. In line with the energy transition schema outlined above, vehicular standards and routine emissions testing should be piloted. This would require a supporting vehicular emissions monitoring and testing program, facilities and capacity support to be provided to key regulatory agencies for the pilot programme. The purpose is to establish a baseline of vehicular emissions that will inform

[51] As presented in the annex to the *Green State Development Strategy: Vision 2020* and compiled from reports of the Guyana Police Traffic Department Road Accident Database (2016).

actions to revise, where necessary, tax and other incentive schemes. In the longer term, more coordinated investment planning will be needed in collaboration with the Ministry of Communities (for the development of new urban towns) and the Ministry of Public Infrastructure (for its planned expansion of transportation networks), supported by a system of registration and licensing of electric or other higher fuel efficiency vehicles.

Studies for developing the vehicle fleet modernization program should consider age of vehicle, with medium to longer term actions focused on introducing legislation for emissions testing, regulation and control, and regulating end-of-life vehicle stages. Other long-term actions to be considered include the introduction of national fuel quality standards for locking in fuel quality and a verification system for fuel integrity testing in non-transport uses. Fuel economy standards should also incentivise market development for biofuels by making blending shares mandatory (i.e. 3% ethanol) and vehicle-compliant. Other considerations include CNG/LNG retrofits and technology use.

D4.3 Conduct feasibility studies for planning the phase in of electric vehicles to inform the long-term transition. Studies must be undertaken by the Department of Energy/GEA to inform transition planning to electric vehicles. The study terms should also seek to inform on the co-benefits of emissions reductions especially in light of anticipated rising emissions from the expansion of the road infrastructure networks as predicted by the green economy modeling exercise. Electric vehicles are attractive for their emissions reduction benefits, reduced noise, and lower maintenance costs as they have fewer mechanical parts. However, they need charging stations that are conveniently located for vehicle owners and operators, and skilled mechanics and repair stations. The supporting infrastructure are attractive sources of new 'green' jobs over the period of the transition that should be proactively developed with local partners and stakeholders. The target is to achieve an electric vehicle penetration rate of 1.5% of registered vehicles by 2035.

D4.4 Prioritise investment for increased road safety measures. The objectives are to reduce fatal and injurious accidents, discipline users of the road networks, improve safety and security on public road transportation networks. Three main factors are generally considered for preventing road accidents: road design; infrastructure and traffic engineering; users and vehicles. Improved road design, construction, pavement and sidewalk maintenance are urgently needed for Guyana's road networks. Open drains pose safety and health hazards. Additional resources should be allocated for speed limit signage and warnings, enforcement technologies (e.g. speed governor, mounted cameras, hand-held radar guns, breathalyzer test kits), training and supervision of police officers and defensive driving education. In terms of vehicles, while brand new manufactured motor vehicles comply with road/user safety codes before being sold in the market, the second-hand car market also should be regulated against vehicular emissions standards, operational safety and good conditioning prior to being reissued with annual licenses to operate on the nation's roads.

3.5 Development Objective E: Resilient Infrastructure, Green Towns and Urban Public Spaces[52]

3.5.1 Introduction

Infrastructure is a key factor for attaining economic development in Guyana and a driver of the *Vision 2040* development agenda. Infrastructure covers all essential services related to economic or physical infrastructure e.g. road, ports, airports, drainage and coastal protection, as well as the supply and distribution of water, telecommunications, and energy (including natural gas). There is also social infrastructure that includes housing, community and settlement facilities, sites and services.

A fundamental principle of the *Vision 2040* development agenda is the recognition of the role that nature plays in economic and social development. To this end, Guyana's development promotes consideration of "green infrastructure", that is, use of ecosystems and their natural functions e.g. coastal protection systems and wetlands and mangrove forests that trap sediments and dissipate wave energy. Natural ecosystems must be understood and valued for the services they provide and incorporated into spatial and economic planning.

The policy recommendations of Section 2.3 above are therefore co-related with those made hereunder and should feature in the integrated planning efforts of the relevant sectors. Integrated planning of infrastructure across sectors is a priority for ensuring that structures and systems are well designed, have minimal negative impacts, are resilient against climate risks, provide reliable services to the Guyanese population and at affordable cost, and are accessible to both hinterland and rural communities, thus reducing or eliminating disparities, wherever these exist.

Infrastructure development will also be designed and managed in accordance with the objectives of Sustainable Development Goals (#6: Water and Sanitation and #9 Resilient Infrastructure) that promote inclusive and sustainable development.

3.5.2 Outcomes

By 2040, Guyana's infrastructure development:

- *Provides and maintains high quality connections in transport and communication from the coastal region to the West, East and South of Guyana, lowering transit times, transport and business costs, and environmental impacts on a per km basis, while improving the reliability of national connectivity services;*
- *Is allocated sufficient and appropriate land to meet municipal service demand, provide clear provisions for the expansion of the housing stock, and offer residents and businesses*

[52] The recommendations of this section are based on analyses made in Annex A(5): "Analytical Evidence to Support Guyana's *Green State Development Strategy: Vision 2040* - Resilient Infrastructure and Spatial Development.

assurance that their homes and offices are structurally sound, sustainable and resilient to natural hazards;

- *Maximises use of 'green infrastructures' with objectives that are co-related to preserving biodiversity and ensuring ecosystem integrity and function.*
- *Provides the local population, especially the poorest in society, with a sufficient supply of safe and affordable housing, open green space and access to quality services (electricity, water and sanitation facilities), in line with minimum international health standards;*
- *Supports low-carbon and sustainable lifestyles through the provision of convenient and low-cost alternatives to private transport as well as improving access to non-motorized transport.*

3.5.3 E1 Road Transport

Analysis

Road transport infrastructure is still limited in Guyana and paving is mostly restricted to the coastal networks. The existing road network stretches along the coast from Charity on the Essequibo Coast to Moleson Creek in Berbice, along the banks of the main rivers, and inland to the interior from Georgetown as far as Lethem in the south. The main roads along the coast and those along the river banks – one third of the total network – are paved whereas hinterland roads – two thirds of the network – are unpaved. The general condition of unpaved roads varies but all display some level of distress such as poor drainage, improper cross sections, rutting, pot holes and excessive dust. During prolonged rainy seasons, the unsurfaced roads experience significant deterioration due in part to inadequate drainage.

River crossings are key constraints on the road network. Bridges on the coast are currently congested, especially the Demerara Harbour Bridge (DHB). In the hinterland, the main crossings are located at Kurupukari/Surama on the route from Linden to Lethem, at Kwakwani on the route from Linden to Kwakwani, at Mango landing on the route to Mahdia, at Sherima on the path to Bartica via Rockstone, and at Itaballi when travelling to Puruni via Bartica. Restrictions prevent some freight transport crossing, especially for mining equipment.

Riverine Communities require a safe and regular ferry service to transport produce. Riverine communities, particularly in the Berbice and Mahaicony Rivers do not have a regular and scheduled ferry service for farmers to transport produce to markets. This results in spoilage and loss of income.

Economic modeling indicates that pursuing a green scenario for road transportation, i.e. use of Recycled Asphalt Pavement (RAP), including the construction and maintenance of *a sustainable road network* requires GYD 34.2 billion in additional capital cost compared to the cost of conventional roads but yields cumulative savings of GYD 89.3 billion in material costs over the lifetime of this infrastructure. The construction of 'green' roads, with permeable pavements could yield additional savings of up to GYD 1.26 trillion and GYD 498 million through reductions in stormwater and nutrient loading respectively (especially if these roads are built in urban or suburban areas).

Further reduction in use of virgin materials stem from maintenance, where material savings of 12.8 per cent or 40,400 tons can be achieved through the use of 15 per cent RAP. In addition,

the use of permeable surfaces and stormwater management infrastructure reduces stormwater and pollution run-off from the road by approximately 50 per cent, which reduces maintenance efforts and hence the additional costs for stormwater management.

3.5.3.1 Policy Recommendations

E1.1 Schedule investments in road infrastructure according to the needs of each regional network. For the purpose of this strategy, the road network is described in four geographic groups: the coastal network, the Eastern network (surrounding Linden), the Western network (surrounding Bartica) and the Southern network (surrounding Lethem). Road infrastructure planning must conduct feasibility studies to assess economic, environmental and social impacts, and carbon emissions from road construction and operation, particularly where roads are scheduled in greenfield sites and contemplate removal of forest cover.

E1.2 Relieve key bottlenecks in the coastal network to reduce congestion. The coastal network runs along the coast from Charity on the Essequibo Coast to Moleson Creek on the Corentyne River. It is mostly paved, but investments are required to reduce congestion. A north–south highway, parallel to the existing East Bank road, would reduce commuting time between Georgetown and Timehri. Another priority is the Demerara River crossing. A new two- or three–lane bridge across the Demerara River, adjacent to the Demerara Harbor Bridge, with a vertical clearance over the navigational channel, would enable ocean going vessels to pass under the bridge. A new bridge at Soesdyke close to the international airport at Timehri, would also help to reduce congestion and is critical to improve connections between the capital and western regions.

E1.3 Build improved land transport links to Bartica (Western Network). As the "Gateway to the Interior", Bartica is the main hub to the mining regions in the west of the country. Currently, Bartica cannot be reached by land transport alone, requiring river transit from Parika. Considering Bartica's importance, two other paths could be developed: a Parika – Goshen Highway and a Patentia – Makouria road. From Bartica, improved links to the West (Puruni and Matthew's Ridge) and to the South (Mahdia) would consolidate its position as one of the most important logistical hubs in the country.

E1.4 Improve the transport network around Linden (Eastern Network). Linden is an important mining town and serves as the connection from Georgetown to Kwakwani in the East. In this network, the first priority is the rehabilitation of the road from Linden to Soesdyke, leading to faster and safer access to the capital and to the international airport at Timehri. Second, transport authorities could improve the link to the mining town of Kwakwani and expand eastwards (to Orealla) to provide a reasonable interior connection to Suriname's road system. Finally, the connection to Rockstone could be upgraded, to better link the South and the West, including a new bridge at Wismar.

E1.5 Build robust connections around Lethem (Southern Network). The road between Linden and Lethem (454 km) is almost entirely unpaved and forms part of a 558 km potential through-route from the Brazilian border at Lethem to Georgetown. The first priority is to upgrade the road from Linden to Lethem to simultaneously create the main North–South highway of the country and establish a reliable link between Roraima, Brazil and Georgetown. This could be complemented with a direct link between Kurupukari and Ituni, facilitating the connection between Southern Guyana/Brazil and Eastern Guyana/Suriname.

3.5.4 E2 Ports

Analysis

Existing conditions in the Demerara Harbour limit the potential for growing maritime trade. As in Suriname, Guyana is primarily serviced by smaller feeder vessels and cargo ships because of severe restrictions on the size of ships allowed in access channels, due to heavy siltation from Amazon River outflows. In addition, other problems include piracy; theft and loss from international and local vessels; the lack of a fire-fighting vessel; poor pilotage services because of equipment and human resource constraints; and a lack of adequate navigational aids.

3.5.4.1 *Policy Recommendations*

E2.1 Adopt urgent measures to relieve constraints and mitigate risks concerning the Georgetown port. These include acquisition of a dredger and a multipurpose vessel (for buoy tendering, hydrographic surveys and fire-fighting), dredging the Demerara navigation channel to a minimum of 6.5 metres, and the purchase and installation of adequate navigational aids. Dredging the Demerara navigational channels will considerably increase throughput capacity. Replacing navigational aids and accompanying infrastructure and expanding services such as port security would provide a higher quality and more cost-effective transport option for businesses.

E2.2 Support the establishment of a container terminal, to meet current demand for container storage space. Georgetown is currently the key port for all containerised exports and imports, as well as most of the nation's break bulk and project cargo imports. As a result, it is a priority to develop a modern terminal with container storage space, preferably on the west bank of the Demerara Channel. The terminal could be operated by a private sector firm to assure efficiency as well as service quality.

E2.3 Support the establishment of a deep-water port at the mouth of the Berbice or Essequibo Rivers. A deep-water port is critical to reduce logistical costs for many sectors (including mining, forestry and rice) and improve current trans-shipment capacity. Appropriate investments in the road network, especially the links with the Linden-Lethem road, will to accompany this. These investments will enable container traffic from Brazilian States of Roraima and Amazonas and secure the port as Guyana's central shipping hub for connecting to the Atlantic. This is a large-scale, long-term project that will require a public-private partnership for assuring proper management and maintenance throughout its productive life.

3.5.5 E3 Airports

Analysis

Airport capacity seems adequate for the near-term future. At both of the main airports, investment programmes currently under way appear adequate to cater for demand in the medium term. Works on the Cheddi Jagan International Airport (CJIA) Expansion Project are on schedule for completion in 2018. In addition to the new Arrivals Terminal building, extended runway and two boarding bridges, there is provision to install a further two bridges, a renovated Departures Terminal, additional duty-free shops and additional parking facilities. Despite its relatively small size, recent private investment in the capacity at Ogle seem adequate for handling domestic and intra-regional traffic. The need for improvements at both

airports will need to be monitored in the future, such as the possibility of air cargo space storage with refrigeration facilities.

3.5.5.1 Policy Recommendations

E3.1 Support investments for appropriate land transport connections, to maximize infrastructure efficiency and foster real estate development in the surrounding areas. The immediate priority is a direct link between CJIA and Ogle airports in the form of a bypass North–South highway between East Coast Demerara and East Bank Demerara, parallel to the existing East Bank road. This would allow more efficient flight connections and reduced congestion leaving the capital. An additional bridge across the Demerara River at Soesdyke would also allow faster access to the airport by citizens from West Bank Demerara, including Bartica in the future.

E3.2 Upgrade airstrips of critical towns in the hinterland. With greater connections to Brazil, container traffic is expected to dramatically increase. In this context, it would be beneficial to upgrade the Lethem private jet airport to a regional commercial airport to complement investments in the road network.

3.5.6 E4 Information and Communications Technologies (ICTs)

Analysis

Guyana's investment climate remains hampered by poor telecommunications infrastructure. Fixed broadband services have improved, especially since the opening of the Suriname-Guyana Submarine Cable System (SG-SCS) in 2010, but bandwidths and broadband subscribers remain low and products are expensive. Guyana's economy is less telecoms-intensive than the regional average, with fixed telephone penetration at 20%; mobile penetration at 70%; and internet usage below 40%. High access prices mean broadband is unaffordable for a large share of the population.

Low population density remains a key challenge to providing telecoms services. Poor infrastructure leads to expensive and unreliable connections in the coastal region and few connectivity options inland. Low population density, particularly in the Hinterland regions, which comprise about two thirds of the country's landmass but only 11% of the population, restricts the services available. Digicel services several remote communities but only offers mobile services. As a result, some of the poorest communities in the country lack access to basic services.

3.5.6.1 Policy Recommendations

E4.1 Improve broadband access in in the Hinterlands through a three-stage approach.[53] The first is to build a future-proof national backbone. This must be based on fibre technology to provide broadband access to the Hinterland and other remote communities. The second is to deploy the most appropriate backhaul (intermediate) and last mile technology. The third is to roll out Wi-Fi access technology, a low maintenance solution compatible with almost all user devices.

[53] Data and strategy recommendations are derived from National ICT Needs Assessment Consultancy (by Detecon International GmbH).

E4.2 Ensure public buildings have broadband access and develop free of charge eGovernment-services. The eGovernment business model considers that the respective agency would grant access to the broadband network to commercial operators, ISPs, and other interested enterprises on wholesale terms, enabling them to sell commercial services to consumers. Consumers could purchase internet vouchers and access the internet from e-Kiosks and internet labs respectively. To improve distribution of public services and ICT adoption, basic connectivity could be provided to consumers for free, but with an overall traffic limit (for example, 100 MB per month, per person). This would allow them to satisfy basic communication needs and access core eGovernment services, without significantly distorting the market for commercial operators. Services could cover education, health and administration.

3.5.7 E5 Coastal Protection Infrastructure [54]

Analysis

Both mangroves and hard sea defences are becoming increasingly dilapidated. Mangroves along the coast are relatively thin due to clearance for fuel wood, localised damage from fishing, dumping and the grazing of livestock in mudflats. Despite significant investments to rehabilitate sections of Guyana's sea defence system, there are still dilapidated and critical sections. The 2014 survey of defence structures showed that 1% was in critical condition, 9% poor condition and 35% fair condition. The weakest points lie in regions 2, 4 and 6.

While key investments to Guyana's drainage and irrigation infrastructure are being made, the system is struggling to deal with recent conditions. Over the past few decades, unseasonal rainfall has led to breaches and over-topping of many of the conservancies giving rise to excessive flooding in areas such as East Coast and West Coast Demerara and to a lesser extent, the Essequibo Coast. This has caused damage to crops, loss of livestock and property damage. Several strategic investments to improve the system were made under the Conservancy Adaptation Project (CAP) and the National Drainage and Irrigation Authority (NDIA) continues to expand drainage capacity.

3.5.7.1 Policy Recommendations

E5.1 Protect and/or restore mangrove areas. This will be achieved through spatial planning of coastal defences, carefully weighing benefits and costs of protection provided by the existing mangrove ecosystem and their contributions to the country's biodiversity. To that end, any expansion of re-planting programmes or implementation of conservation measures will be coordinated among the responsible agencies[55]. This may require review &/or harmonisation of associated legislation and policies. A public awareness campaign covering climate change and the importance of mangroves could also help affect behavioural change and prevent long-term mangrove degradation.

[54] On the Climate Resilience Strategy and Action Plan for Guyana (CRSAP) of November 2015, the Government of Guyana developed Priority Concept Notes (PCNs), aimed at fundable, costed and evidence-based climate resilient programmes/ projects. The PCNs on "Guyana's sea defence enhancement and maintenance" and "Strengthening drainage and irrigation systems" are focused in this section and on the Strategic Priorities for Intervention.

[55] Coordinated and joint action in this regard are particularly important between agencies of the Ministry of the Presidency (EPA, PAC, DOE) and the Ministry of Public Infrastructure (Work Services Group) to ensure evidence-based decision-making.

E5.2 Reconstruct, rehabilitate and maintain critical sections of the sea and river defences.
The immediate priority is to undertake a survey to identify and prioritise specific works and material needs. Repairs must be properly designed to ensure they are resilient to projected climatic conditions, in particular sea level rise. In addition, complementary defence techniques such as off shore breakwater, wave attenuators and groynes could be considered[56].

E5.3 Improve the capacity of the drainage system and improve early warning systems.
The system could be significantly upgraded by separating urban and agricultural drainage in high pressure areas combined with the procurement of new pumps and the construction of additional drainage outlets and canals. It is also essential to improve mechanical drainage by increasing the pumping capacity on the East Coast of Demerara. To complement this, the National Drainage and Irrigation Authority (NDIA) could develop improved means of communication between farmers and D&I system managers to improve the monitoring of conditions on the ground.

3.5.8 E6 Inclusive and Green Urban Settlements

Analysis

Urbanisation and migration will dramatically increase pressure in regions already struggling to meet basic infrastructure needs. Roughly 90% of Guyana's population is concentrated along the coastal belt, covering just 5% of national land area. Regions 3 and 4 are not only the most crowded but are also experiencing the fastest rates of growth in population density. Infrastructure development is struggling to keep pace. An existing deficit of 20,000 low-income housing units widens each year, with many new developments unconnected to basic water and sanitation services. Public solid waste management is uncoordinated and widespread littering and illegal dumping persist.

There is a general lack of faith in the irregular public transport system, little traffic control and poor enforcement of laws or parking demarcation, which all contribute to unsafe roads, fatalities and high congestion levels along commuter routes and in urban centres. Safe and harassment-free public transport is needed, particularly for women, children and vulnerable groups such as the elderly, LGBTQI and people with disabilities. Ultimately, these infrastructure shortcomings lower the quality of life among the population, leaving them vulnerable to traffic-related risks, inconvenienced and frustrated by inadequate infrastructure and related services, exposed to the effects of natural hazards and amplifying environmental impact.

Inclusive and green urban settlements require a practice of spatial design and planning that are important for accomplishing the objectives of SDG #11: to make human settlements inclusive, safe, resilient and sustainable. Towns and urban areas are intimately connected to people and livelihoods and serve as important service hubs. The priority is to ensure that Guyana's communities, settlements and housing in urban and rural areas are well planned, provide sufficient green space, take local realities, needs, traditions and customs into consideration, are safe and secure, and encourage fruitful interaction between communities and ethnic groups in line with the country's social cohesion priorities. Furthermore, urban

[56] Note: Rip -Rap flood protection method is currently the primary design being used.

settlements must be resilient to flooding or other climate threats and have adequate and reliable public services and amenities.

Injudicious disposal of solid waste was frequently cited in the national consultations as a major problem in communities and must therefore be afforded the highest priority by local and regional governments. Management solutions identified for alleviating unsightly solid wastes must be strategic and integrated across sectors for better efficiency, emphasise waste minimisation, improved collection services, and safe and sanitary handling and disposal. Pilot programmes on solid waste management can also be developed and implemented in efforts that promote 'green towns' such as in Bartica and elsewhere.

3.5.8.1 Policy Recommendations for Urban planning and building standards

E6.1 Reform government-wide land-use planning to promote mixed-used development for sustainable urban development is appropriate and respected across all institutions. Taken together with the land policy recommendations of Chapter 4 below, legislation must be reviewed to ensure that each land use planning authority has a clear and distinct mandate and the power to execute its responsibilities under that mandate. A single agency will coordinate urban land use planning activities of the Central Housing and Planning Authority (CH&PA), the Guyana Land and Surveys Commission, municipal Governments and Neighbourhood Development Councils. Zoning regulations for urban development, and hence land allocated to CH&PA, will be set with consideration of land use demand from other agencies such as the Guyana Forestry Commission (GFC) and the Guyana Geology and Mining Commission (GGMC). Once set, all agencies will respect and adhere to these regulations. A more detailed proposal for a government-wide land use planning framework is discussed in Chapter 4 below[57].

E6.2 Develop and apply environmental quality guidelines and standards. As part of the *Vision 2040* development agenda, urban design must seek to provide adequate green open spaces that will improve pedestrian and community use and recreational pastimes, whilst also providing buffer zones to minimise damage from flooding events, and improve the overall aesthetic environment and experience of the city or town. Roads and infrastructure layout and design must be logistically well thought out and constructed to accommodate anticipated growth in population and vehicular use, whilst also ensuring consistent functionality, sustainability and resource efficiency over the whole life cycle (design-construction-use-maintenance).

Similarly, every regional town must as, a matter of priority, develop integrated waste management (solid, liquid, gaseous, hazardous) and/or environmental management action plans particular to the needs of the locality, leveraging opportunities to reduce/reuse/recycle/recover. Plans must anticipate the growth and future needs of industrial and commercial businesses and households. The Department of Environment and its enforcement and implementing arm, the Environmental Protection Agency, must be at the forefront in assisting and building the capacity of municipalities and regional governments on integrated waste management planning activities. These may include public education campaigns, strengthened regulatory frameworks, guidelines and/or economic incentives. The

[57] See also Annex A(7): "Analytical Evidence to Support Guyana's Green State Development Strategy: Vision 2040 - Governance and Institutional Foundations".

principal objective is to reduce the volume of municipal solid waste and strengthen collaboration for managing household and industrial wastes in accordance with international standards.

Industrial estates are few in Guyana, with the main ones located at Coldingen and Eccles in Georgetown. These are, however, juxtaposed to residential and commercial areas and estate activities have been known to generate noise nuisances and pollution discharges. To regulate and manage current and future impacts, the EPA in collaboration with the Ministry of Business can develop environmental management plans that require tenants to monitor, measure, mitigate and/or reduce environmental and social impacts e.g. through use of minimum standards and guidelines for effluent discharges, air quality and solid waste generation, among others. These two agencies may also collaborate to improve local capacity for future industrial estate development and management, as well as tracking environmental performance indicators.

E6.3 Integrate robust projections of urban population growth, infrastructure demand and land characteristics into urban planning decisions. It is essential for the Ministry of Communities to work with Municipal Governments and the Guyana Bureau of Statistics to develop evidence-based projections of the population in Guyana's urban centres. This will cover both existing urban centres such as Georgetown and Linden as well as the growing 'capital towns' of each region, as identified by the Ministry of Communities[58]. These population projections could then be translated into projections of demand for housing and essential municipal services for each urban centre. Sites for associated residential and commercial development, road expansion, public transport terminals, electricity transmission and distribution infrastructure, and potable and wastewater supply could then be identified. This must consider the context of the area and ensure that infrastructure is efficiently distributed, there are suitable transport links between residential and commercial centres, and development is geared away from areas at high risk of (even slow-onset) natural hazards.

E6.4 Develop capacity within the Guyana National Bureau of Standards (GNBS) to review and update building standards and consider the case for fiscal incentives for energy efficient buildings (see section 3.4.5 above). Guyana's current building standards must be reviewed to identify the key differences to international best practice, and whether these are justified considering the national context and the necessary environmental standards to ensure energy and water efficiency, health and safety. Plans exist to establish a National Building Authority under the GNBS to enforce and periodically review standards. The legislation requiring compliance with environmental and social standards and associated enforcement efforts could also be strengthened. The National Building Authority could work with the private sector and construction industry associations to build capacity in compliant construction and increase the prevalence of professional/environmental certification. The National Building Authority in combination with CH&PA, the Department of Environment/Environmental Protection Agency (Ministry of the Presidency) and the Ministry of Finance could also consider the introduction of fiscal incentives such as concessional

[58] Guyana has nine regional towns and municipalities: Bartica (Cuyuni-Mazaruni Region), Lethem (Upper Takutu-Upper Essequibo), Mabaruma (Barima-Waini), Mahdia (Potaro-Siparuni), Georgetown (the national capital), New Amsterdam, Corriverton and Rose Hall (East Berbice-Corentyne), Anna Regina (Pomeroon-Supenaam) and Linden (Upper Demerara-Berbice Region).

finance schemes for energy and water efficiency measures and certification of sustainable buildings and construction.

3.5.8.2 Policy Recommendations for Housing Development

E6.5 **Consolidate existing housing developments and complete the Squatter Regularization programme.** The immediate priorities are to raise occupancy rates and standards of health and well-being (see further below) in all existing housing developments by providing access to potable water, sanitation and electricity. This must utilise environmentally sound technologies to help avoid future costs, while increasing human wellbeing and environmental protection. Young professionals and single mothers are among priority target groups. It is also essential to develop a clear process for re-screening non-occupied lots for eligibility. The Squatter Regularization programme must continue to register and upgrade informal housing communities and provide basic infrastructure. A dedicated support programme could also be designed for the relocation of communities in zero tolerance areas – typically within road, sea defence and other drainage reserves – taking account of existing CH&PA housing programmes and climate-resilience plans. In addition, it is essential to develop preventative measures, taking into consideration the factors that drive people towards squatter settlements (such as access to markets and businesses, poverty, single female headed households).

E6.6 **Expand construction of low-income housing and upgrade existing housing stock, drawing from the lessons learned in previous government programmes.** A thorough evaluation of past social housing programs must be undertaken, in particular Low-Income Settlement Programs I and II, to identify the most effective model for low-income housing provision. This would specify the housing units, production processes and contractors that have been most cost effective while maintaining high occupancy rates and resident satisfaction. Any new housing development should be consistent with wider urban development plans and particularly any priorities to zone housing in less vulnerable, more climate-resilient areas. The Ministry of Finance could also consider the case for a VAT exemption on CH&PA-affiliated low-income housing construction, integrating other standard environmental criteria for energy and water efficiency that would bring savings to households.

E6.7 **Establish a public-private partnership (PPP) model to offer well-connected block lots to developers.** The PPP would govern a working relationship between private developers, CH&PA, Guyana Water Incorporated (GWI) and the Guyana Energy Agency (GEA). These agencies could develop a tailored and replicable offering of land for developers to construct both housing units and commercial premises, with a guarantee that constructed properties will be connected to municipal services.

E6.8 **Review thresholds for corporate tax relief for low-income mortgage providers and commit to maintaining the policy in the long term.** The current threshold of GYD 4 million for low-income mortgage relief could be reviewed, considering the current price of land lots and house construction for the typical prospective resident. In addition, the Ministry of Finance could commit to keeping mortgage relief plans in place in the long term (at least 10 years) to encourage private financial institutions to offer more concessional packages.

E6.9 **Design a financial literacy program to raise awareness of credit eligibility.** CH&PA could work in partnership with key low-income mortgage providers to design an educational

programme for prospective home owners to raise awareness of the financial instruments on offer, their terms and eligibility. Where possible, elements of this program could be incorporated into secondary school curricula to communicate the importance of household budgeting, debt and savings early on in life.

E6.10 **Develop a local certification process for contractors.** CH&PA, in association with the National Building Authority, could develop a strict set of technical (e.g. resource efficiency and other social criteria) and managerial criteria for trusted contractors. This would give prospective home owners, developers and financial institutions assurance in development plans.

3.5.8.3 Policy Recommendations for Water and sanitation

E6.11 **Develop a standardized and scalable data collection system and set quantitative targets for GWI.** The Ministry of Communities, in consultation with the Guyana Bureau of Statistics and relevant multilateral organisations, could first design and implement a system to collect data on national water, sanitation and hygiene standards, piloting urban settlements in the short term. This would follow international best practices and be integrated into annual national reporting frameworks, including GWI's annual report and long-term strategy.

E6.12 **Conduct a rapid assessment of Georgetown drainage conditions to develop a programme to clear drains, repair sluices and emergency pumps.** This would prioritise short term interventions that will raise standards and reduce risks for the largest population. Longer term interventions will feed into a broader sectoral development strategy and must take into consideration climate-proofing and resilience policy and plans being formulated for greater Georgetown.

E6.13 **Undertake an economic feasibility study for a public sewage treatment plant and develop septic tank production and maintenance standards.** The feasibility study would evaluate current levels of wastewater and project future demand, identify and evaluate possible site locations, and assess capital and maintenance costs. New standards for septic tank production and maintenance should be drafted in collaboration with the Guyana National Bureau of Standards. These would be based on international best practices but must also, as a priority, mitigate environmental, health and climate risks.

3.5.8.4 Policy Recommendations for Urban transport and Mobility

E6.14 **Undertake an economic feasibility study to cost the recommendations from the Georgetown Sustainable Urban Transport Study.** These include a new big-bus terminal and new big-bus fleet that take into consideration policy requirements for fuel efficient and/or electric vehicular fleets (see section 2.5.6 above); a traffic management system that is designed to protect the traveling public, be respectful of women and youths, cater to persons with disabilities; consider options for non-motorised transportation along with suitable lane markings (e.g. for bicycles, pedestrian walkways etc.) and other infrastructure requirements such as junction design and channeling. The study would assess capital and maintenance costs and draft an implementation timeline to integrate into the contractor's terms of reference.

E6.15 Integrate population growth projections with sustainable transport planning for other urban areas (particularly, regional capitals). This would ensure consistency between the long-term urban road transport plan and the broader long-term urban development plan.

3.6 Development Objective F: Trade, Investment and International Cooperation

Analysis[59]

Guyana has trading relations with at least two-thirds of the members of the World Trade Organization[60] (WTO). However, four markets, Canada, CARICOM, the United Kingdom and the United States of America, are responsible for over 70% of the value of Guyana's trade and this trade volume is equal to 74% of GDP. These four markets will be increasingly responsive to 'green' goods and services as global action on climate change strengthens. In addition, Guyana has trade and economic agreements with other countries independently and through CARICOM. The global move to a green economy opens up opportunities to build relations with new countries and multilateral institutions, and to put the enabling conditions in place for trading and investing in green goods and services. Guyana needs to work with other CARICOM member states to expand intra-regional cooperation, particularly in green sectors.

The terms of Guyana's international trade and investment agreements are essential to its export performance, and economic growth. Over 80% of both exports and imports are with countries with which Guyana has some form of trade agreement. Moreover, the collapse of the EU sugar trade deal led to the most significant structural decline in exports in the last 30 years.

Guyana must seek to maintain and strengthen these relationships, as well as broader trade facilitation measures. A key upcoming risk is the expiry of the Caribbean Canada Trade Agreement (CARIBCAN) waiver in 2023; Canada currently purchases over 20% of Guyana's exports. Over the next three years, Guyana must also continue to implement the EU Economic Partnership Agreement and complete its commitments under the WTO Trade Facilitation Agreement (TFA).

Sound trade policy facilitates economic growth by opening up access to large consumer export markets and a wider variety of import goods and services. This provides important expansion opportunities for exporters and allows an economy to specialize in the production of a specific good or service that meets international standards, which can then be exported to different markets around the world. The evidence that trade and openness improve economic growth is abundant and with the right institutional arrangements, countries can enjoy the opportunities of openness and trade while protecting domestic industry and managing the risk of international price shocks. Efficient trade facilitation measures should underpin trade agreements. If countries record information in the same way, follow the same guidelines and standards for product quality, and employ the same custom requirements, the transaction costs of trading with one another are much lower. Sound investment policy helps foreign investors identify the best investment opportunities, makes it easy to invest, and gives them confidence in doing so.

[59] Annex A(8) provides a fuller analysis of Guyana's trade and investment situation.

[60] There are 164 member countries of the WTO (2016).

However, unlocking the full potential of Guyana's existing agreements will require strengthening the business environment (see section 3.3.4 above), alongside sound trade and investment policy, including the promotion and encouragement of 'green' manufactured products. A comprehensive assessment of Guyana's international trade policy and performance revealed that, despite a relatively strong set of free trade agreements and investment incentives, a weak business environment discourages foreign direct investment and trade. In particular, poor transport networks, high electricity prices and a lack of skilled labour limit the growth of domestic and foreign businesses alike.

3.6.1 F1 Advance Action on Existing Trade Agreements

F1.1 **Support negotiations concerning the new CARICOM-Canada free trade agreement with the aim to reach a conclusion before the existing CARIBCAN (Caribbean Canada Trade Agreement) waiver expires in 2023.** It is essential to assess what additional support can be given to the CARICOM Secretariat to ensure an agreement is reached and develop a contingency plan in the event that it is not. Any negotiations should consider the potential for environmental provisions to be integrated into a new agreement.

F1.2 **Fully implement the EU-CARIFORUM Economic Partnership Agreement**. Remaining work includes extending support for SME establishment, business environment reform, CARIFORUM regional integration, and data collection and exchange.

F1.3 **Establish a dedicated team and monitoring system to deliver against Guyana's commitment to immediately implement 73% of provisions under the WTO Trade Facilitation Agreement (TFA).** This could be housed under the Ministry of Foreign Affairs but would require close collaboration with the Ministry of Finance and the Ministry of the Presidency. Depending on technical assistance, the remaining 27% may need to be implemented by 2020.

3.6.2 F2 Implement Supporting Standards

F2.1 **Review existing sanitary and phyto-sanitary (SPS) standards to remove trade barriers and ensure alignment with WTO obligations**. The Guyana Livestock Development Authorities (GLDA), National Plant Protection Organization (NPPO) and National Agricultural Research and Extension Unit (NAREI) could seek technical assistance to update relevant legislation and improve the transparency of Guyana's SPS regime. Making all SPS measures available electronically from a single source is a priority.

F2.2 **Align remaining national standards with international best practice, where appropriate**. The Guyana National Bureau of Standards (GNBS) reports that 80% of national standards are already in line with international best practice and an additional 3% are necessarily different to suit the national context. It is essential for the GNBS to review the remaining 17% of standards which have not yet been reviewed to systematically ensure they are up to date and appropriate.

3.6.3 F3 Promote and Support 'Green' Goods

F3.1 **Assess the feasibility of a special economic zone to encourage higher value-add and sustainably produced or certified exports, particularly 'green' goods and services.** The Ministry of Foreign Affairs could lead a review of import duties, corporate tax and personal income tax among international competitors to support the decision of whether to establish a special

economic zone. If supported, the Ministry of Foreign Affairs and Ministry of Business could undertake a feasibility study to develop a proposal for the Ministry of Finance. Feasibility assessments could also consider the export potential of 'green' goods[61] together with the potential impacts of their value chains[62].

F3.2 **Finish development of the Guyana Office for Investment's (GO-INVEST) new strategy for investment promotion and facilitation**. This will include a review of the 2004 Investment Act to reduce discretionary loopholes as well as wider recommendations on economic incentives for consideration by the Investment Promotion Council. GO-Invest could also strengthen its investment promotion with guidelines for assessing and identifying "hot spots" along product value chains, early in the production process, in order to fully understand and promote more beneficial uses of natural resources.

[61] Green manufactured products for export could include sustainably produced sugar, organic sugar and/or rice; biofuels from sugar;; crustaceans and fresh fish; certified wood products e.g. value adding furniture; sustainably mined gold and gold products e.g. jewelry; products derived from upcycling agro-wastes; bio-chemicals e.g. bio-solvents from citric fruit waste; bio-plastics and products derived from recycled plastic wastes. Another line of "green products" are low impact, natural ingredients for cosmetics, food and medicine, extracted from local species through sustainable practices (source: Annex H – "Guyana Green Industry & Trade Assessment").

[62] A feasibility assessment of the rice sector could review pesticide and fertilizer use in production, the processing efficiency of rice milling and the potential use of residual biomass for energy generation. An assessment of the coconut sector could also review pesticide and fertilizer use, expansion of production, and assess the potential for using coconut husks and fibers as inputs for producing other 'green' goods (*Ibid.*).

Chapter 4: Build Human Capital and Institutional Capacity

4.1 Development Objective G: Healthy, Educated and Socially Cohesive Population

4.1.1 Introduction[63]

In 1992, the Living Standards Measurement Survey[64] indicated high poverty rates in the country: 43% of Guyanese households were living in poverty (less than$US2 per day), with 28.7% living in extreme poverty. The 2006 Survey showed significant improvement, at 36.3% and 19.1%, respectively. By the year 2000, Guyana's *National Development Strategy* and *Poverty Reduction Strategy* were drafted (revised and updated in subsequent years) as major policy responses to address poverty, the country's high debt levels and urgent development needs. These Strategies are key building blocks for the current *Green State Development Strategy: Vision 2040*, as many of their priorities remain urgent today.

As discussed above, part of a country's wealth is its natural capital and the economic development derived from use of natural resources. Human capital, however, measured as the value of earnings over a person's lifetime[65], is considered the most important aspect of a country's wealth. It accounts for the present value of the future earnings of a country's labour force and may be disaggregated by gender or employment status. It is also a composite of the population's years of completed schooling, actual learning during or after the school years and the value of health investments[66]. The quality of a country's labour force is therefore an important asset for and harbinger of its future development.

Article 21 of the Constitution describes labour as the source and growth of social wealth and the well-being of the people of Guyana. However, a review of the country's top line human and social indicators is concerning.

The Guyana Bureau of Statistics reported 12% unemployment in 2018, the majority of which is located in urban areas; but one-third of the Guyanese population is either unemployed, underemployed or not actively seeking employment. There is a low employment-to-population ratio (49.2%); a high out-migration rate (85%-90%); and high levels of employment in the informal sector (48.2%), which, with 68% of all employment from private businesses, makes the size of the informal economy concerning. The ILO[67] explains that the labour indicators result from limited availability of decent work, low levels of skills and creation of jobs in the economy, and limited commercial investment. Women are disproportionately affected and represent 56.4% of the inactive labour force. Unemployment is also high among youths between the ages of 15-25 (21.6%).

[63] See Annexes A, A1 and A6 for fuller situational analyses of Guyana's macroeconomic, human and social conditions.

[64] The "Living Standards Measurement Survey" was conducted with World Bank support in 1992. In 2006 the Guyana Bureau of Statistics of the Ministry of Finance conducted the "Living Conditions Survey". A more recent Living Conditions survey was commenced by the Bureau in 2018 and will establish new levels of current income and expenditure and a new threshold for the poverty line within the country in anticipation of the onset of the oil & gas economy.

[65] Source: "The Changing Wealth of Nations"; Lange, Glen-Marie, Q. Wodon and K. Carey, Eds; 2018; The World Bank Group, Washington D.C.

[66] Ibid.

[67] Ibid.

Apart from labour, health and education sectors have generally registered improvements in outcomes over the years; but recent trends remain worrisome. Among CARICOM countries, Guyana's HDI[68] (0.654) remains the second lowest (Haiti is lowest at 0.498) in 2017 and is ranked 125 out of 189 countries (Bahamas and Barbados have the highest regional HDI of 0.80 above the global average of 0.728). Like all CARICOM countries however, Guyana's HDI is trending gradually upwards since the past two decades.

Generally and since 2010, health outcomes have made important gains. There have been a reduction in maternal and child mortality; decreased incidence, prevalence and mortality from communicable diseases, high levels of immunisation coverage treating infectious diseases; greater awareness of environmental health issues, with improved water and sanitation facilities in the country. However, the Ministry of Public Health reports (2018) an average life expectancy of 68.9 years, while most CARICOM countries are above 70 years; neonatal mortality rate of 20.8 per 1,000 live births and under age 5 mortality is 20.8 per 1,000 live births; but the SDG targets are 12 and 25 per 1,000 live births, respectively. Guyana's maternal mortality ratio is estimated at 116.7 per 100,000, a significant improvement over the 2015 figure (229), but the SDG target is 70.[69]

In spite of gains made in the last decade, communicable diseases are still prominent in the country's disease profile. Chronic non-communicable diseases (NCDs) are an increasing burden.[70] These have been associated with the largest mortality rates in Guyana since 1996, accounting for 70% of deaths in 2017.[71] Apart from HIV/AIDS and acute respiratory infections, they have occupied the top 9 places as causes of mortality. In 2012, the World Health Organization rated Guyana as the country with the highest per capita rate of suicide in the world – a leading cause of mortality among adolescents and young adults. Teenage (15-19 years) pregnancy is mostly high in hinterland regions and particularly among Amerindian girls (21%), which jeopardizes their ability to complete secondary school education and often limits opportunities for advancement[72], as they are relegated to caring for families and households.

Top line health indicator trends have remained relatively flat since 2012, which probably suggests need for a revitalization of strategy and more targeted investment focus in health outcomes.

On the education front, 1% of Grade 2 and 4% of Grade 4 students are considered literate, while only 13% of Grade 2 students and 7% of Grade 4 students are numerate. Only 36% of secondary school graduates attain minimum matriculation requirements – 5 subjects, including English A and Mathematics – and the average 2018 passes attained in these two subjects leave much room for improvement (67% and 43%, respectively). Education outcomes have particularly been bedeviled by cycles where important gains are eroded in subsequent years. Disparities stubbornly persist in the country, where students based in coastal areas consistently achieve twice the better results than their hinterland counterparts.

[68] Human Development Index as reported by UNDP, see: http://hdr.undp.org/en/data#.

[69] These relate to stroke, heart disease, HIV/AIDS and diabetes. See Annex A for a fuller analysis.

[70] PAHO/WHO Country Strategy 2016-2020, as reported in Annex A.

[71] Op. cit. note #68.

[72] The adolescent birth rate in Barima-Waini, Cuyuni-Mazaruni, Potaro-Siparuni and Upper Takutu-Upper Essequibo regions is almost 300% higher than that of the other Regions, at 187 births per 1,000 women; school drop-out rates among adolescents are also high. See Annex A.

The wellbeing of women and girls are also of concern as they are subject to traditional stereotyping and gender-based violence that robs them of decision-making power or keeps them in situations of impoverishment or violence, leading to poverty or worse, death. The reasons are complex, yet connected to Guyana's traditional patriarchal attitudes, remoteness of the country with consequent challenges to accessing health, education and social services or decent work. Girls and boys are exposed from very early ages to stereotypical attitudes and differential roles that keep women caring for households, the sick and elderly and raising children, while boys are encouraged in their virility. Girls less than age 15 are four times more likely than boys of the same age to enter into marriage[73].

More worrisome are the reported attitudes towards domestic violence among both women (10.2%) and men (9.6%) ages 15-49, who believe that a husband is justified to hit or beat his wife. When comparing the numbers of incidents of sexual abuse vs. successful prosecution rates[74], there is generally low enforcement of domestic violence laws, low reporting of crimes by victims and the violators are seldom brought to justice. Notwithstanding, Guyana is the first country in the Caribbean to establish a specialised Sexual Offences court and to promote a 'rights-based' approach for ensuring that victims have the needed support.

The availability of quality health, education and social protection services is an imperative for empowering the most vulnerable: the poor, women, children and adolescents, victims of all kinds (e.g. abuse, violent crime, trafficking, migrants), LGBQTI and people in vulnerable situations across Guyana, and for improving standards of living and opportunities for growth and progress. These services are goals in themselves, which are deeply interrelated to the economic, social and environmental aspects of sustainable development. Healthy, educated and well-informed young people are also able to more fully develop their potential and lay the ground work for a productive and fruitful adulthood, taking advantage of available opportunities that spur entrepreneurship, creativity and innovation and that drive positive change across society. During the consultation phase of Strategy development, there were consistent calls for better opportunities for young people across all of Guyana.

The *Vision 2040* development agenda prioritises reducing poverty (in line with SDG #1) through job creation and improvement of social conditions stemming from investing in a more diversified economy – value-adding agro-processing (rice, vegetables, organic farming and aquaculture), sustainable mining, renewable energy, eco-tourism, business process outsourcing and infrastructure development – which will provide decent jobs and promote a just transition to a green economy. Caring for the caregivers ensures a focus on gender equality and the empowerment of women to make their own decisions, provide quality care for their infant children and access decent work opportunities.

Vision 2040 prioritises investment in people's capabilities through training, re-training and skills development will make it possible for women and men to successfully transition from "old" to "new" jobs and for young people to tap into emerging and future opportunities. Provisions for an adequate social safety net to support the poor and most vulnerable are essential along with increased and more targeted investment for better health and education

[73] The UNICEF Multiple Indicator Cluster Survey (MICS), 2014; "Monitoring the situation of children and women" reports that 4.4% of girls under age 15 experienced their first marriage or unions vs. 1% of men of the same age; similarly, at age 18 years or less it is 26.9% of girls vs. 6.6% of boys.

[74] Op. cit. note #71.

outcomes. These priorities must be led by strong institutions that espouse good governance, transparency and capability, with clear and unequivocal mandates to build the country's human capital.

4.1.2 G1 Public Health and Wellbeing

4.1.2.1 Analysis

Health care in Guyana is provided fairly and equitably to all citizens, regardless of economic status, geographic location, ethnicity or lifestyle choice. Since its independence in 1966, however, the country has been striving to overcome challenges of a remote and difficult terrain, which render access to health facilities and services difficult for communities and health workers alike. The health system in Guyana currently features public and private health facilities: medical laboratories, specialist/non-specialist staff and allied health workers operating in coastal, rural and hinterland areas. The network also includes national and international organisations, bilateral and multi-lateral donors.

The Ministry of Public Health is the central authority that directs and monitors public health services. Other agencies involved in services delivery include the Ministry of Communities through its network of regional and local government institutions; the Ministry of Education, Ministry of Agriculture and Ministry of Social Protection. This makes the health system fragmented, with consequences for quality of care, efficient use of resources, cost of services and overall customer satisfaction. Guyana's current public health expenditure is 5.25% (2014), slightly under the PAHO/WHO recommended 6% of GDP and the CARICOM average of 6.7%. The greater share of expenditures is held by recurrent expenses as opposed to primary care, which is the stated priority. Donor funding has been declining over the past few years.

Notwithstanding, the health system has made important improvements over the past decades, but challenges remain. Non-communicable diseases (NCDs) and communicable diseases (CDs) remain as challenges to public health and wellbeing in Guyana. NCDs account for 70% of all deaths. Cerebrovascular disease (e.g. stroke) is the leading cause of death, followed by ischaemic heart disease, neoplasms, diabetes and hypertension. The country also has the misfortune of having the highest rate of suicide globally – at 24.6 per 100,000 population (2017[75]) – close to three times the global and regional averages. Suicide accounts for 13% of all deaths in Guyana and is the 3rd major cause of death in the 15-44 age group. Suicide prevention is addressed through a number of family life, mental health programmes and treatment, as well as other services.

Important strides were also made in past decades, in the reduction and control of communicable diseases (tuberculosis, malaria and HIV/AIDS), vaccine-preventable diseases (e.g. measles, polio, hepatitis-B) and neglected tropical diseases (NTDs). These milestones resulted from coordinated and targeted actions undertaken in collaboration with global and international partners and progress made in other health determinants such as access to potable water sources (98%) and the percentage of the population using sanitary facilities (84%).

[75] Ministry of Public Health, Statistics Department.

Even so, the country retains a position among the top five countries in the Americas region for the incidence of tuberculosis at 9 per 10,000 population[76]. There were 547 new reported cases of Tuberculosis[77] in 2017 (an 8% decrease from 2016), but its persistence is related to the rise in HIV/AIDS cases. In the decade before 2010, the incidence of HIV/AIDS was significantly reduced. Since then, it is on the rise with a 23% increase of new HIV infections and 33% increase in AIDS-related deaths[78]. Reported cases of Malaria decreased by 61.5% from 1995-2010[79], but nonetheless the disease continues to pose a serious health risk.

While these three prominent communicable diseases have received the most attention, others such as dengue, intestinal and skin infections, sexually transmitted infections, lymphatic filariasis and acute respiratory infections continue to challenge the public health system. These diseases are also prevalent among the poor and disadvantaged populations and particularly in hinterland regions (Regions 1, 7 & 8).

According to the 2012 national population census, youths (<35 years[80]) represent 69% of the national population,[81] with females comprising 51%.[82] The National Youth Policy requires "young people to be united, educated, trained, safe, happy, healthy and integrally involved in decision-making processes, while enjoying equality of opportunity and equal access to the resources of the country and are politically, economically and socially empowered"[83].

The youth unemployment rate for Guyana in 2002 was slightly above 35%[84] but is now estimated at 40%[85] i.e. almost three-times the global rate of 13.5 percent. The proportion of unemployed males is higher than that of young females. The reasons for their unemployment include the lack of skills, experience and qualifications required by the job market. While some youths are qualified and willing to work, they often cannot find jobs. In the hinterland areas, most indigenous youths have limited access to secondary and post-education and become involuntary school drop outs. This situation causes them to become disillusioned with the propensity to be involved in crime, drug and alcohol abuse, preoccupied in adolescent sexual engagement or prostitution. Teenage pregnancy, suicides and a suite of other socio-economic problems are often the consequence of their delinquency.

Crimes committed by young people are attributed to their situations of unemployment and poverty, particularly males, who are often the perpetrators of crimes against young women – mostly in the form of sexual and physical abuse. Disabled youths are most often marginalised due to lack of access to education, employment, health, recreation and other suitably designed facilities.

[76] 2010 data reported by the Ministry of Public Health in its unpublished Bulletin as reported in "Health Vision 2020".

[77] From data provided by PAHO/WHO Guyana office, September 28th 2018.

[78] UN AIDS Guyana: http://www.unaids.org/en/regionscountries/countries/guyana (accessed 30 September 2018).

[79] Op. cit. note #37.

[80] In Guyana, youths are regarded as persons between the ages of 14 and 35 years, with those from 10 – 14 regarded as pre-adolescence.

[81] The National Youth Policy for the Cooperative Republic of Guyana 2015

[82] Guyana Bureau of Statistics National Population Census 2012.

[83] The National Youth Policy for the Cooperative Republic of Guyana 2015

[84] Guyana Bureau of Statistics National Population Census 2012

[85] Caribbean Development Bank: 2015: Youth is our Future

A frequent complaint heard during the public consultations in hinterland and coastal regions were of inadequate health facilities and services e.g. shortage of doctors and other trained specialists, shortages of medicines, and that health centres were not well equipped.

Consistent with SDG 3, the *Vision 2040* development agenda promotes universal health access, healthy lives and wellbeing for all Guyana's citizens.

4.1.2.2 Policy Recommendations for Health and Wellbeing

G1.1 **Primary care is the foundation of Guyana's health care service.** Primary health care is the strategic priority for delivering quality health care to the wider population, with the objective of preventing illness and diseases. The Ministry of Public Health promotes the "Package of Publicly Guaranteed Health Services (PPGHS)" that is the essential facility-based health services to which all Guyanese have equal access. Individuals are empowered to proactively get involved to achieve their own established health goals and to adopt healthy lifestyles to prevent onset of diseases and illnesses. Investment priority is at Levels I and II as the health system levels that deal with primary care.

G1.2 **Preventive care and treatment are prioritized for ante-, intra- and post-natal care**. Pregnant mothers are particularly vulnerable to occurrences of mortality and morbidity of infants for reasons related to poverty and unhealthy living conditions, domestic violence and abuse, neglect and/or distance from a heath post or centre. The priority is constant surveillance of poor, indigenous and rural communities where the problems might be concentrated to ensure timely, accessible and continuing care for mothers, infants and families.

G1.3 **The referral system is strengthened to ensure that the population has equitable access to needed health care services and supplies.** The referral system provides 5 levels of service – from primary to more specialized/national referral hospital services. Primary level care is available across all districts and regions via health posts and clinics. More serious cases are referred to district- regional-, or national-level hospital services. For this referral system to work as intended, protocols must be developed or strengthened, staff trained and primary care level health posts and clinics well-resourced with tools and information that guide citizens towards distinguishing between healthy and unhealthy habits, behaviours and lifestyles. Equipment and drug supplies are adequately and efficiently provided to each facility in the referral system with particular emphasis in hinterland and border areas, where health problems are most acute or compounded by immigration issues. The planned expansion of the public road networks will in the medium-to-long term reduce significantly travel times to a health facility especially in rural and hinterland areas, which is expected to bring significant health benefits and improvement to those populations.

G1.4 **Quality healthcare is attainable by the most vulnerable in society.** Vulnerable, at-risk and disadvantaged persons and groups e.g. women/teenage girls, indigenous communities, adolescents and troubled youths (incarcerated, in conflict with law enforcement, homeless or runaways), people with disabilities, LGBQTI, the elderly and victims of trafficking in persons, are targeted at all levels of the health system. Priority is given to ensuring that these groups have key information on preventive care and treatment and are monitored by health workers. Treatment for physical and mental illnesses at primary levels must be multi-disciplinary, paying close attention to accurate diagnosis, case management, rehabilitation or palliative

care, as well as access to affordable drugs. Quality training is critical for health workers to manage and treat the poorest and most dire of human situations. In that respect, surveillance of the health and social conditions of migrants and mining workers moving along the country's western and southern borders is essential.

G1.5 **Indigenous traditions of medicine and wellbeing are respected and preserved.** As "first peoples", indigenous communities have persisted through generations and over centuries. Their traditional lifestyles and medicines are valued and treasured in perpetuity. Their rights to "free, prior and informed consent" prevail on matters related to use and application of health system services, treatment and information. Communities are closely monitored to ensure that the vital signs of good health, wellness and wellbeing are evident and sustained.

G1.6 **Well-trained social workers with knowledge of Amerindian culture and communities should be available to provide guidance and counselling.** The social fabric in many Amerindian communities has deteriorated to such an extent that indigenous cultures and traditions are no longer practiced. Alcohol and drug abuse, rape, incest, depression and suicide are becoming commonplace, especially in mining areas. Traditional cassava-based diets are increasingly replaced by canned goods and process foods, lowering resistance to illnesses and disease. The priority is to establish, reestablish &/or strengthen rehabilitation programmes for the most affected communities so as to curb community-based problems. Funding must also be prioritised for programmes operated by faith- or service-based non-profits that already assist these communities or that are best positioned to do so.

G1.7 **Strengthen the Ministry of Public Health's capacity to manage an integrated health service delivery network.** Global health systems are becoming more country-specific. With its remote hinterland and difficult terrain, Guyana's health system needs a customized integrated solution to improve its resilience against disease outbreaks and to ensure good health outcomes. The management structure and capacity of the Ministry of Public Health must also be fully integrated across existing health networks to effectively execute its management, quality control and monitoring mandates. Digitising of records and systems enable network integration and promotes an IT-enabled and data-rich operating environment, which must now penetrate to all decision-making, management, technical and sub-technical levels of the sector.

G1.8 **Ensure that quality becomes everyone's priority with measures of excellence applied across the seven health system components**: The Ministry of Public Health prioritises health system components that include governance and leadership, health financing, service delivery, human resources, pharmaceutical management, health information systems and strategic partnerships. A culture of quality is supported by stringent document control procedures. This starts with and is driven by the heads of public health units and departments, who are accountable for overall system performance – measured and reported against established goals, indicators and targets. Regional health workers and community personnel as front-line staff are trained and held accountable for improved accuracy in diagnosis, response and related reporting. Analytical laboratory services, distributors of medical supplies, equipment and technologies should be accredited, licensed or registered.

G1.9 **Delivery of quality health outcomes is the priority through results-based management.** Leadership drives consistency and accountability. Decision-making is transparent and focused; processes and procedures are documented and applied consistently because they

are understood by all staff. Health facility and departments are led by qualified professionals with written job descriptions that are assigned performance measures with results tied to the sector's strategic goals. Accountability measures are assigned to every health professional and worker, facility and service, and local, regional and centralized levels of service.

G1.10 **The Guyanese health system attracts qualified, ethical and specialist professionals and workers.** The Ministry of Public Health operates a human resources division that recruits, retains and places quality workers in the public health system, whilst also monitoring their performance and adherence to standards. The health sector has an available and diverse pool of locally-, regionally- and internationally-trained specialists, professionals and workers from recognized and accredited institutions, who serve to lift and maintain professional standards across the health sector. Doctors and health professionals guided by their associations, follow ethical guidelines and routinely pursue professional development in new, more innovative and evidence-based methods of care, treatment and procedures. The path to health professional and worker training, certification/ recertification, recruitment and retention in the Guyana health sector is consistent and avoids any alternative routes. Human resource and professional standards are consistently met and/or exceeded above established minima.

G1.11 **Health financing is equitable, innovative and does not unduly burden the most vulnerable**. Better monitoring of health financing allocates resources more efficiently, and according to set priorities in order to attain the sector's long term sustainability and goal. Improved partnership with the private sector is essential, along with strengthening of the contributory national insurance scheme, so that health financing achieves more optimised and sustainable funding from public and private sources. Additional funding from development partners focuses on innovative, vertical projects.

Studies to determine the feasibility of applying out-of-pocket expenses to finance health outcomes and the suitability of this option to Guyana's health system should be conducted in the short term. Private health financing, however, should not result in catastrophic expenditures for the poor and vulnerable or be in conflict with the goal of universal health. The study terms should require analyses of the categories of health costs that can and should be reimbursed, and any differential in service costs delivered by location e.g. in hinterland areas and in the remotest of communities.

G1.12 **The underlying causes of Non-communicable diseases (NCDs) are targeted for urgent and long-term action.** The objective is to build on prior gains and to sustain these trends towards eradication of diseases. This priority for targeting underlying causes of NCDs is established in SDG #3, as well as the country's *Health Vision 2020*, which and targets the 4 main NCD risk factors – smoking, harmful alcohol use, physical inactivity and unhealthy diets – with the national target established to reduce NCDs by 25% by 2025. This is to be recalibrated in 2030. Reversals of otherwise positive trends in the control &/or eradication of diseases should be avoided.

Controlling the risk factors requires deep involvement, understanding and cooperation of the population but in ways that avoid message fatigue. Enforcement of new tobacco legislation that prohibits smoking in public buildings, and places restrictions on tobacco/cigarette use and advertising, including selling to minors must be coupled with investments in data monitoring and collection and database management for more accurate tracking at the level of the vendors. Health fairs and events convened in the short to medium term as national or

regional activities provide important opportunities to interface and interact more directly with the population and with families. These public events require compelling messaging with data and information sharing via media and formats that appeal to varied audiences. The importance of regular check-ups, use of prescribed medicines, improved methods of caring for the sick, elderly or the young and better sanitary practices should be promoted. Events should recur annually on the public health calendar, be oriented to 'at-risk' groups, and organized in partnership with village councils, local and regional governments, non-profit and other groups.

G1.13 **Surveillance monitoring and the health information system are essential priorities for investment.** The objective is the production of accurate, validated and more timely health data and information to better inform decision-makers, professionals and patients, and to close data gaps in estimated vs. reported cases of disease infection. The database on communicable and non-communicable diseases is still fragmented. Indicators and measures have become more standardized with the work of the World Health Organization, the World Bank and other institutions. At the minimum, data collection on core health indicators is a short-term priority that runs contemporary with the management and control of diseases. The latter is to be consistently measured and reported for all regions and districts and on a timely basis, to close gaps and data lags. Use of technology to automate common or repetitive data entry tasks for the health information system is essential for the transition to a data-rich culture. The rise in use of portable devices and drones are good options for collecting and storing information or for distributing and monitoring.

G1.14 **Target interventions to 'at-risk' groups e.g. adolescents, indigenous, vulnerable and disadvantaged women/girls, youths, LGBQTI, sex workers, where they live, work and/or socialize for more effective responses.** The objective is to empower these groups and individuals to make better choices for their good health and well-being. Targeted action focuses resources at the source of problems. Close monitoring and good case management for example, of pregnant mothers living with HIV/AIDS and other people living with HIV/AIDS e.g. sex workers, LGBTQI individuals, sexually active youths, are essential for ensuring frequent access to treatment, preventing spread of the disease and from mothers to their children. Close monitoring and engagement of poorer families in areas with high incidence of domestic violence and abuse, drug and alcohol abuse or mental illness particularly those with suicidal tendencies, serve to encourage early diagnosis, treatment and better case management. Interacting with school-age children are opportunities for educating in their safe and controlled environments on sensitive topics related to high-risk behaviours, violent crimes, situations of abuse or on avoiding teenage pregnancy. Youth programmes should also address sexual and reproductive health and promote behaviours in accordance with accepted traditions and practices particularly for indigenous communities, but also in partnership with other essential public sector service organizations and NGOs.

G1.15 **The Ministry of Public Health is actively collaborating with the Ministry of Education, Ministry of Social Cohesion and the Ministry of Communities**. The Ministry of Public Health has written cooperative agreements with, for example, the Department of Social Cohesion, the Ministry of Communities (local and regional governments), the Ministry of Education and other relevant organizations with clearly understood goals for health outcomes and/or achieving a more socially cohesive population. Agreements elaborate on the shared roles and responsibilities of each agency, with application of IT-enabled data and information systems

that foster sharing and exchange of data and information on the agreed outcomes for health and wellbeing of the citizenry particularly in hinterland and rural communities. The cooperation addresses for example, information on communicable and non-communicable diseases, environmental health, hygiene and sanitation needs and conditions in schools, communities and regions, as well as available and trained staff.

G1.16 Cross-sectoral and inter-agency cooperation is strengthened to improve public sanitation and neighbourhood environmental quality. The goal is effective cooperation to sustain and/or improve on gains made in connecting households to safe drinking water sources and improved sanitation facilities. The regional disparities between coastal and hinterland communities must be targeted, measured and progressively reduced. Intervention measures will address the control of vectors and their intermediate hosts, veterinary public health standards that control stray or untethered domestic animals in populated areas. Interventions for treatment on NTDs such as lymphatic filariasis, or vaccines for against dengue and other vector-borne diseases should be executed in close inter-sectoral cooperation and in partnership with non-profits and international partners. The latter group are particularly important when pursuing drug donation programmes via public-private partnerships with pharmaceutical companies.

4.1.3 G2 Education

4.1.3.1 Analysis

The transition to an inclusive green economy requires updated technologies, operational skills, and employment patterns, accompanied by a reorientation of education system priorities e.g. curricula, teaching and learning, to equip the populace with the right skills, knowledge and attitude to achieve an inclusive and sustainable future. 'Education for Sustainable Development' (ESD) is seen as a critical objective of national educational efforts, permeating all major learning institutions.

Education is universally available in Guyana at primary, secondary and post-secondary education levels. Stark levels of disparity in education outcomes exist, however, between coastal and hinterland schools, private and public schools and poor and wealthy households. Narrowing these gaps is a priority. Access to education is also important for troubled or disadvantaged youths e.g. incarcerated, disabled or pregnant teens, who are also school drop-outs. The focus is also on lowering drop-out rates in public secondary schools among boys and girls, particularly between the ages of 14 and 15 years, and those in post-secondary school attendance.

Special emphasis is on achieving and sustaining good results along the student value chain, particularly at the National Grade Six Assessment (NGSA) level and for matriculation to the Caribbean Secondary Education Certificate (CSEC). Good quality education outcomes for boys and girls are essential to the country's future and its labour pool. Primary and secondary school enrolment compares well among CARICOM countries. However, the drop-out rate is higher during the secondary school years and particularly among boys. This needs consistent focus and attention. While the 2018 English A and Mathematics results were comparatively better than the previous year, at 67.1% and 43.4% respectively, there is still significant room for improvement. In 2005, 42% of teachers in Guyana's public education system were untrained;

by 2017 this was significantly reduced to 20% - an improvement but one that still requires attention.

Consistent with SDG #4, the *Vision 2040* development agenda prioritises investments in education to improve the country's education outcomes, particularly at secondary school levels, for better long term employment opportunities, stronger labour markets and for better social conditions overall.

4.1.3.2 Policy Recommendations for Education

G2.1 **Redouble efforts to keep boys and girls in school during the compulsory period of schooling.** Compulsory schooling is from nursery to upper secondary levels, i.e. 5 years 6 months to 15 years (i.e. 10 years of schooling). Ensuring that boys are girls are in school and learning well during their prime years needs a redoubling of efforts and multi-disciplined approaches that are suitable to the complex issues such as poverty, long travel distances to school, adolescent neglect, domestic abuse and child labour, that collectively inhibit children from staying in school for the duration of their school years. Indigenous communities and particularly boys are heavily affected. Attendance and learning are therefore twin objectives with the focus on attaining consistently high levels sustained from primary through the secondary/post-secondary stages. Efforts to reduce drop-out rates especially for boys in grades 9, 10 & 11 (post-secondary) and pregnant teens consigned to childbearing and raising are priorities. Upward trends in the number of passes in English A and Mathematics, on the rise since the past 3 years, should be sustained and associated with greater efforts to ensure the minimum matriculation of 5 subjects. Tied to these objectives are closing the results gap between hinterland and coastal schools and narrowing performance gaps between public and private schools, wealthy and poor households. The Ministry of Education will therefore need to begin to monitor and report on private schools.

G2.2 **Special needs children require special attention**. The objective is to overcome any barriers or stigma attached to children with special needs and to ensure that this segment of the school population is included in the formal education system with the equanimity, quality and consideration afforded to other children.

G2.3 **Promote better worker compensation packages, incentives and performance measures for recruiting and retaining top quality teachers to the education system**. The goal is 100% trained teachers. Teaching is a time-honoured profession that must be returned to its prominence in Guyanese society. Investment in attractive and competitive teacher compensation packages must have parity with performance standards and benchmarks and continual professional development. Mediocrity is discredited; excellence is rewarded. A necessity for teachers at all levels of the service is written job descriptions with assigned outcomes and performance measures. As in advanced countries, the priority is for teachers to be recruited from the top ranks of university/college graduates, demonstrate proficiency and mastery of subjects and excellence in teaching skills and methods.

G2.4 **New teacher training institutions must be accredited to national (and international) standards.** The Cyril Potter College of Education is the main teacher training college but it may be insufficient to serve the needs of the education system. Other teacher training schools must be accredited. While minimum accreditation standards are defined by the Ministry of Education, this should be gradually reoriented towards acceptable international standards in

the long term to attain quality outcomes. The teaching pool can also be widened to attract qualified, experienced and senior teachers, principals and/or school administrators from the CARICOM Single Market and Economy. Alternatively, top schools in the Caribbean may mentor Guyanese teachers but this is an administrative responsibility for the Ministry of Education and subject to the scheduling and availability of candidates and mentors. These measures can be short term and time-bound to the desired outcome.

G2.5 More male teachers are encouraged and incentivized to participate in the teaching profession. 88% of the total teaching pool comprises women, which may contribute to the challenge of keeping boys in secondary schools. Qualified men should be encouraged to take up careers as teachers and not only to advance student academic achievement but also to serve as counselors and sports coaches. Participating on sports teams is an incentive to keeping boys in school, particularly the under-achievers but must be tied to good &/or consistent academic performance.

G2.6 Recognize and reward good teachers, results and excellence. The ultimate hallmark of good teaching is achieving excellent student exam pass results. Recognising excellence and quality should be an annual activity. Not only should the best performing students be recognised, but also the best teachers and schools. Formal award and recognition programmes may also be extended through a national scholarship programme that offers tertiary level tuition support for the top all-round or subject-matter performers.

G2.7 School principals and teachers from the same grades must conference annually. Principals must conference with their peers at least once annually over a few days to discuss, share and exchange key lessons and methods and to foster continued development of the curriculum, good school standards, enrolment, attendance, examination results and assessment methods and education outcomes. Conferences are encouraged between teachers of the same grades and can be led by head teachers. These are positive events and exchanges that uplift, reinforce and/or facilitate learning between peers and leaders on lesson plans, instructional methods, dealing with difficult or special-needs children and lead to specific problem-solving outcomes that are realistic, achievable and supported by the Ministry of Education (conferences are free of grievance complaints that are left to another suitable forum).

G2.8 Fully implement curriculum changes to educate on the sustainable development agenda. The pilot testing of curriculum changes of UNESCO's Education for Sustainable Development policy is appropriate to the *Vision 2040* development agenda and should primarily address topics related to: solid waste issues, environmental education, climate change, agriculture, energy, water, disaster risk and biodiversity. These should be appropriately mainstreamed into the curricula. Indigenous communities must also benefit from instructional tools and materials that teach the same themes but are expressed in their languages with appropriate use of symbols, icons and characters that are familiar and relate to their settings. Future curriculum changes should be based on skills needs analyses and in collaboration with the private sector and other stakeholders.

G2.9 Indigenous children should benefit from culturally-appropriate instructional materials and methods. There are nine different Indigenous groups and languages in Guyana, with four main languages (Arawak, Carib, Warrau and Wapisianas). Their rights to "free, prior and informed consent" must prevail on matters related to development of educational and

instructional materials. Efforts should be increased to translate English instructional lessons into the main native languages through primarily school levels, ensuring primacy of native language proficiency, prior to introducing English as a second, instructional language.

G2.10 **Schools, classrooms, and dormitories (i.e. public boarding schools in the hinterland) have improved designs, facilities and access.** All schools are considered sites of learning and excellence, and enjoyable, safe, healthy and secure. Buildings should be well laid out and designed for maximum airflow, to ensure sufficient open space and facilities for study, reflection, physical education and sports. Maintenance should be preventative and therefore documented, as well as rigorous to avoid any deterioration in building integrity and for avoidance of emergencies and accidents. Each school should have an incident preparedness and response plan in the event of emergencies e.g. fires, civil disturbances, crimes. Particularly for the dormitories of residential schools where they may exist in hinterland areas and within or near indigenous communities, the design of school buildings should be more culturally-appropriate to their traditions and for fostering a better learning environment. Similarly, residences must be designed, constructed and maintained to a standard that does not discourage teachers from spending considerable amounts of time away from their families and/or city living, while teaching at hinterland schools.

G2.11 **Schools must celebrate where feasible, annual national events and cultural diversity.** Keeping children in healthy school learning environments also requires that they are enjoying their time at school. The objective is to develop awareness and appreciation for the country's culture – natural, artistic, historical, tangible and intangible – and foster pride and participation. Extramural or interscholastic events may feature celebrations of national or themed events e.g. at Independence, Mashramani, Amerindian Heritage month that also encourage national or regional competitions and overall enjoyment of school life.

G2.12 **Benchmark and recognise top performance.** The Guyanese education system should routinely benchmark its standards of performance at the end of primary level (Grade Six Assessment exam) nationally; and regionally at secondary (Caribbean Secondary Examinations Certificate) and post-secondary levels (Caribbean Advanced Proficiency Exam). Benchmarks can be established with other Caribbean islands with similar examination systems managed by the Caribbean Examinations Council. Within CARICOM, benchmarks of school curricula, instructional methods and learning systems are available.

G2.13 **Community alliances should be tied to school and teacher performance benchmarks**. Frequent interaction between parents and teachers are essential for understanding any potential obstacles to learning faced by children. Each school is required to convene at least one annual parent-teacher conference designed to keep parents informed of their children's progress and for teachers to discern any changes on the homefront that impact the child's ability to learn, socialize &/or participate in school activities.

G2.14 **Eliminate the dead-ends in the education system.** School drop-outs should be able to take up from where they left off and complete their school matriculation. This is a priority for teenage (and other) mothers and for underachievers who did not matriculate at the end of secondary school. Continuing education gives students, usually from the poorest households,

the chance to continue their growth in and matriculate from the formal education system and with better opportunities for decent jobs and acceptable standards of living.

G2.15 **Technical, Vocational Education and Training (TVET) must be strengthened to play a vital role in preparing students for the labour market.** TVET students and institutions are regarded as essential for an economy in transition. As for the secondary school stage, investments will emphasise achievement of consistently high enrolment, ensuring good completion rates and grades and fostering partnerships with the private sector. TVET schools have relationships and formal agreements with private sector employers, particularly small and medium-sized (SMEs) enterprises or farming cooperatives in need of specific skills, who can provide direct opportunities for apprenticeship and on-the-job training. TVETs can promote specialist industry job skills development*, inter alia,* in computer studies, computer-aided design, engineering services, construction, interior and building design and maintenance, among other essential skills. TVET schools must be accredited, comply with quality assurance standards and responsive to the changing needs of Guyana's labour market. Growth areas for future skills include precision instrumentation, robotics, energy technologies/ maintenance, manufacturing, oil and gas services, mining, construction, computer coding, water/wastewater treatment/maintenance, environmental monitoring, crafts and food safety/catering. Reviews of the TVET curriculum should also be considered to encourage greater enrolment of indigenous persons, while imparting knowledge on techniques for low-carbon forms of agriculture, craft-making, forestry guiding and monitoring, agro- and food processing, artistic trades, business management, and negotiation skills. TVET schools should be decentralised from the coast to provide better opportunities and access by hinterland communities.

G2.16 **The Ministry of Education is actively collaborating with the Ministries of Public Health, Social Cohesion and the Ministry of Communities**. The Ministry of Education is collaborating through written cooperative agreements with other Ministries, public and private sector agencies and non-profits in regions and towns. Agreements detail the responsibility of each party in the promotion and encouragement of social cohesiveness in schools and communities and for the population at large. They foster proactive health and environmental monitoring and related activities within school compounds and facilities.

4.1.4 G3 Social Cohesion and Diversity of Cultural Expression

G3.1 **The Social Cohesion Plan is given priority for all sectors and across all agency operations.** The Social Cohesion Strategic Plan, 2017-2021 must be implemented. While institutional strengthening of state and government entities across all sectors is essential for building a more socially cohesive society agencies must now go further to ensure that the goals, objectives and principles of the Social Cohesion Plan are achieved by embodying these in agency and institution work plans, staff recruitment and retention practices, procurement procedures and practices, and generally, in country-wide operations.

G3.2 **Public agencies must also renew efforts to focus programmes more clearly on vulnerable groups and in hinterland areas**. The most vulnerable of groups feel isolated and cut off from national life and/or opportunities as their needs, views or values go unacknowledged. To counter the impetus to emigrate for better opportunities, the objective is to ensure that the defined principles of social cohesion and tolerance as developed in the Plan,

are codified into the public service and are coupled with job creation in diversifying or newly emerging sectors. Public agencies and enterprises must also encourage abiding partnerships with civic organisations, to train staff and new hires and to build institutions and working environments of trust among all ethnic and social groups. Stereotyping, sexual harassment and other forms of abuses of power should never be tolerated and guidelines, codes of behaviour or ethics elaborated for staff and management to abide by.

G3.3 Strengthen social safety nets to safeguard vulnerable groups and populations against the impacts of structural changes from the transition. Under the aegis of the Ministry of Social Protection, it is of key importance within a transitioning economy with the anticipated structural changes that public agencies and enterprises must anticipate and/prepare for reintegration of laid-off or unemployed workers into the labour market not only via access to training opportunities but through a full set of support measures including job search assistance, subsidized or facilitated employment, support to entrepreneurship along the path of active labour market policies.

G3.4 Strengthen social protection measures for providing assistance to vulnerable groups, particularly women and young girls. The social protection system must be strengthened to enable effective and support for men, women, youths and migrants who experience loss of income, family support, violence, or have become disadvantaged in any way. Unwed or pregnant mothers and teenaged girls can be vulnerable to domestic abuse and other forms of violence and in need of support, shelter and protection. Not to be forgotten are older persons, persons with disabilities, work injury victims, children and migrants suffering from exploitation, the worst forms of abuse or violence, and the economically poor for whom adequate assistance and support must be accessible and ensured. At the same time social protection in the form of temporary income support and/or access to public work schemes, training or re-skilling will need to be upgraded to minimize or avoid disruptions in the economy resulting from displacement of workers and their families and a fall in purchasing power.

G3.5 Promote investment in Guyana's diverse cultural expression as a unifying, cohesive objective. Guyana is rich in cultural diversity with a mixed heritage of populations that are indigenous or arrived from Africa, Asia, and Europe. The Department of Culture, Youth and Sport (Ministry of Education) and the Department of Social Cohesion (Ministry of the Presidency) are in the forefront of planning and executing cultural events at national, regional and local levels that promote tolerance, a historical appreciation of Guyana's ethnic diversity and in ways that encourage curiosity, creativity and camaraderie. The celebration of national and religious holidays for example, provide opportunities to demonstrate genuine leadership and unity from faith, community and political leaders. Cultural events must strengthen and rejuvenate efforts to promote cohesiveness and inform and educate the population in ways that captivate the attention of youths particularly, marshalling the visual, graphic and dramatic arts in attractive displays.

G3.6 Foster investment and development of a vibrant creative industry. The draft National Cultural Policy and Framework should be adopted and implemented to ensure a just transition to the appreciation, enhancement and development of Guyana's rich heritage. Updated copyright laws are also required to support development of a vibrant creative industry. The enforcement of laws will ensure adequate protections for the talent and creativity of artists, including building a culture of respect and appreciation, whilst also

facilitating an expected return on investment. Art classes and modules should be reinforced in primary, secondary and tertiary, including TVET, school curricula. Professional writers, artists and artisans must be encouraged to showcase and display their works and talent.

G3.7 **Displays of local works of art should be facilitated by public institutions and buildings particularly during celebratory periods of national and cultural events.** Local artists will benefit from periodic and free displays of their work to the general public. This improves exposure, allows the artist to have more interpersonal interactions and explain their expression in a space that is respectful and supportive of their creative efforts.

4.2 Development Objective H: Good Governance, Transparency and Knowledge Management

4.2.1 Introduction

The main thrust of governance and institutional reform under the *Vision 2040 development* agenda rests on the pillars of transparency, participation, the rule of law and strong institutions to manage green growth processes. These pillars embrace the unprecedented opportunity to see Guyana's multi-ethnic, multi-religious population become more socially cohesive, as the country is one of the first in the developing world to embrace the concept and to develop a national development plan to realise the objective to the fullest extent.

Transparency and accountability rests on the need for robust and independent oversight mechanisms and the need to liberalise and facilitate access to public information through modern e-governance systems, with minimal restraint. Participation in the decision-making process of those who are affected by inevitable changes will ensure greater acceptance of new procedures and processes by the population at large. Efficiency and citizen service inculcated in the work of all civil servants in public services and administration is essential for the public sector to effectively play its role in driving and enabling the implementation of the *Green State Development Strategy: Vision 2040*.

The rule of law rests on the foundation of an independent and effective judiciary and law enforcement systems that partner with communities and embody the professionalism and competence that is expected from such an important mission. It ensures efficient and effective judicial processes that make for a predictable investment environment. Decentralisation and local governance ensure that a deserving population enjoys the freedom to shape their own economic and social futures and to build cohesive communities.

Strong and capable institutions are essential in the natural resource sectors to manage the structural transformation of the economy. Recommendations to improve governance through stronger institutions are reflected throughout the chapters of this Strategy. Public-private partnerships play a central role in unlocking Guyana's potential. A strong and independent civil society has an important 'watchdog' function over the operations of the economy and society, particularly in the light of the anticipated new hydrocarbon economy and helps to ensure that the powerless have a voice at the table. A knowledge-based society assures that information and communication technologies can deliver efficient and responsive services, more open government and an engaged citizenry.

4.2.2 Outcomes

By 2040, Guyana's governance and institutions:

- *Reflect stronger checks and balances among the branches of government and promote social cohesion, shared governance, and a participatory democracy as a result of further constitutional reforms.*
- *Are managed by modern, professional and competent public sector institutions that function under capable executive management and appropriate parliamentary oversight while operating with a new ethic of accountability, openness and client orientation with the public and the business community.*
- *Operate with minimal public corruption as reflected in international corruption and transparency measures as a result of stronger institutions, better oversight, a vibrant civil society and an effective and independent judicial system.*
- *Manage and administer public lands and resources sustainably, transparently, and efficiently with indigenous land claims finally and fully resolved through a consensual process.*
- *Foster a modern knowledge economy where ICT systems are the backbone of efficient public service delivery, support a more informed and active citizenry, and drive innovations in the business and creative sectors.*

4.2.3 H1 Governance and Citizen Participation

4.2.3.1 Analysis

The principal focus of current efforts to enhance transparency and accountability have been the public financial management system (principally the public accounting and procurement process) and strengthening of the Ministry of Finance and Office of the Auditor General. The recently established Public Procurement Commission is slowly taking up its mandate. More recent efforts have sought to improve the framework for discouraging money laundering and financial crimes and to ready Guyana for improved transparency on the significant revenues expected from the new oil and gas industry, through its membership in the Extractive Industry Transparency Initiative (EITI) and the drafting of a Natural Resources Fund law. An updated Integrity Commission Act was recently passed as was whistle-blower protection laws.

The task now is to establish an overarching strategic framework with adequate checks-and-balances to address the transparency and accountability architecture and to curtail piecemeal approaches to the issue while certain lacunae in the laws remain to be addressed.

4.2.3.2 Policy Recommendations for Governance and Citizen Participation

H1.1 **Improve performance and accountability of public administration and services.** The public sector is the largest formal employer in Guyana and is expected to drive the

implementation of the *Green State Development Strategy: Vision 2040* through policy and law making, revenue collection, management and delivery, implementation of programmes and service provision. The 2016 Commission of Enquiry of Public Services in Guyana generated a comprehensive list of recommendations for the reform of the public sector that will require time to fully implement. The report will be taken up for discussion in the National Assembly to inform next steps in public service reform, including addressing the need for a public service law. However, it is urgent to initiate actions to promote and enforce a depoliticised meritocracy, efficiency and citizen service through public service regulations and codes of conduct, performance management and rationalised, fair and consistent pay structures associated with written job descriptions. Systemic measures are urgently needed to curb sexual and other forms of harassment and abuse.

H1.2 **Modernise the transparency and accountability architecture via strengthened public financial management and procurement systems, increasing public access to timely and relevant information and establishing clearer requirements for public officials and the political system.** Better transparency and accountability benefits everyone. Government should therefore launch, in partnership with civil society and including the political Opposition, a comprehensive stocktaking of Guyana's transparency and accountability architecture with a view to modelling best international practice. This should include a review of existing laws relating to corruption and public accountability in order to modernise laws, close gaps and ensure that penalties on the law books serve as effective deterrents to crime. This would include a review of Guyana's Access to Information law, which is widely viewed as unwieldy and ineffective. This process could also help identify how to more effectively investigate and prosecute public crimes. As part of this process, the Government should also establish a task force to spearhead its participation in the stocktaking exercise and its implementation of recommended reforms.

H1.3 **Strengthen public procurement.** The Public Procurement Commission (PPC) will lead a strategic review of the procurement system to identify bottlenecks and weaknesses with a view toward strengthening accountability and enforcement and also ensuring equity, fairness and justice in procurement practices. This can serve as an inception exercise for the PPC and help to target follow-up actions, whilst also building trust with the public. The PPC must consult with the Office of the Auditor General and the Public Accounts Committee to gain insights on the reasons for recurring problems cited in the annual Auditor General's reports. This review should inform an update of the Public Financial Management Action Plan.

H1.4 **Improve public access to information**. As Guyana's Access to Information law is reviewed and updated in the medium-term, the initiative to enhance transparency and the public's access to information relating the extractives industries will be managed by the National Data Management Agency (NDMA) under its e-governance initiative. The NDMA should work with statutory bodies such as GL&SC, GGMC, GFC and the Department of Energy to establish online digital portals that publicise all contracts, licenses and permits for exploration and production in the extractives sectors, with geo-located data. It should also work with the Deeds Registry to digitise company registration data so that it is easily accessible to the public. Publication of this data is required under Guyana's obligations to EITI. Such information must be published and updated at regular intervals to improve the transparency of Guyana's natural resources management.

H1.5 **Adequately resource the Integrity Commission of Guyana to effectively carry out its mandate.** After a decade-long hiatus, the Commission was recently re-established. The Government will ensure that the Commission is funded to carry out its mandate to collect, review and, where necessary investigate, annual asset declarations of public officials, and conduct investigations into breaches of the Code of Conduct for public officials. The Government must also monitor implementation of the Integrity Commission Act and enhance the Commission's power of enforcement and sanction if necessary. As an important expression of its leadership on this matter, the President and Cabinet will soon submit their asset declarations and encourage other persons in public life to do the same.

H1.6 **Reform the political system.** Government recognises that enhancing public accountability requires further reforms to the political system. Of urgent necessity is the passage of modern campaign finance legislation and establishment of an independent body to ensure compliance. Furthermore, academic literature has shown that political systems based on closed list, proportional representation with executive presidencies are vulnerable to corruption. For this reason and to address longstanding observations that the political and electoral system in Guyana exacerbates social cohesion, fundamental constitutional reform is necessary. The goals of a further round of Constitutional reform should be to strengthen checks and balances within the system with incentives for inclusion, cooperation and consensus between government and Opposition parties promote shared governance, enhance geographic and national representation, strengthen government and parliamentary accountability towards citizens and to enable the full functionality of National Human Rights institutions, among other possibilities. The inclusive and participatory process of Constitutional reform is a necessary means to the end. This entails cooperation and consensus building across political parties and meaningful involvement of citizens in articulating the fundamental values and principles for their nation and people.

H1.7 **Strengthen citizen participation and inclusion**. The objective is to promote the growth and capacity of the civic sector as a partner in implementing the *Green State Development Strategy: Vision 2040*. This requires legal and regulatory reform as well as the establishment of a new institutional mechanism. Legislation will soon be introduced in the National Assembly for the establishment of what is conditionally known as a Guyana Civil Society Development Foundation (GCSDF) under the Trust laws of Guyana. The Foundation will have a combined mandate to build the capacity of the civic sector broadly as well as to provide grants to civil society activities in pursuit of civic initiatives and partnerships supporting the goals of the *Green State Development Strategy: Vision 2040*.

The Foundation will be an independent entity governed by a board of directors, appointed by the President through a consensual process involving the private sector, civil society, and the Leader of the Opposition. It is critical that the foundation be viewed as capable and politically neutral. The board will appoint a Chief Executive Officer which will be charged with hiring professional staff. The GCSDF will be modelled on private philanthropic foundations elsewhere and grant programs will be approved by the board. Seed capital for the Foundation's operations and grant programs could come from an allotment of oil and gas revenues to the trust fund held by the Foundation. The corpus of funds will be managed by an external advisor accountable to the board and invested in stable funds in overseas equity markets. The operations and programs of the Foundation should be funded off the interest

from investments. A sustainable operating foundation can help to professionalise and promote the goal of an independent civic sector at a critical moment in Guyana's history.

H1.8 Modernise the legal and regulatory framework for civil society organisations (CSOs). The Government will present a new charities or CSO law to the National Assembly following broad consultation with civil society. The main features of this law will be to provide favourable tax treatment to donations made to registered civic organisations. In addition, the legislation will define non-profit status so that CSOs need not choose between registering as friendly societies or as companies. Under the new law, the capacity of the government to develop standards and oversee registration will be increased.

As part of the work of the recently established Law Reform Commission, Guyana's laws will be reviewed to seek opportunities to add statutory comment periods to key laws, particularly those related to budgeting at national and local levels; licensing of economic activity; land, urban and infrastructure planning; and major state contracts, among other areas. These initiatives to strengthen the civic sector go hand in hand with others in the area of transparency, accountability, access to information and e-governance.

4.2.4 H2 The Rule of Law and Strong Institutions

H2.1 Correct deficiencies in the rule of law. Wherever these create unwitting obstacles to development and transformation, they will be removed considering most efficient way to pursue legislative changes. A restructured and transforming economy will no longer rely on 'business-as-usual' approaches that perpetuate cycles of increasing cost and uncertainty of doing business, encouraging corruption and informality, and promoting insecurity and inequalities which are obstacles to social cohesion. A study should be undertaken to identify laws and regulations that require amendment, replacement and/or repeal in the current economic and social context of Guyana. It may be submitted to Parliament to be used to develop a legislative agenda. These actions would strengthen the body of Guyanese legislation.

H2.2 Strengthen the independent Judiciary with additional resources for greater effectiveness. An independent and effective Judiciary needs sufficient budgetary resources for effective development of its human resources, management systems and physical facilities. In the short term, the Government will implement a system-wide digital recording and trial management system for the Judiciary that is widely acknowledged as a necessary condition for reducing case backlogs and fulfilling the promise of the recent reform of civil procedure. Over the medium term, the Judiciary will fill the critical personnel vacancies in the magistracy and courts system. The expansion of the judiciary into hinterland areas will be continued including construction of physical facilities to ensure more frequent sittings of the courts.

H2.3 Strengthen Judiciary support systems. A strong Judiciary also relies on a support system that includes, *inter alia*, an alternative dispute resolution system and legal aid services. The latter includes expansion of access to hinterland communities and those held in remand, including youth. Implementation of the Juvenile Justice Reform and Family Court system will be accelerated. Partnerships with the private sector and civil society are encouraged to gain buy-in to these services and to ensure service quality to communities.

H2.4 Strengthen the capacity of the Guyana Police Force and the Department of Public Prosecutions. Guided by the ongoing program for security sector reform and strengthening,

the Government will focus investments in enhanced criminal investigation and prosecutorial skills. Over the medium term, the Government will improve the quality of human resources throughout the Police Service, ensuring that corrupt police officers are weeded from the Force and more capable and competent personnel are recruited and retained. Better remuneration packages and screening procedures are an incentive for attracting more qualified applicants to the Force. The Government will review its community-policing initiatives to further mainstream a community-centric approaches to citizen security.

H2.5 Undertake a comprehensive review on the performance of National Human Rights institutions. Since their establishment following the 2001/2003 Constitutional reforms, these agencies need urgent review and strengthening. In the case of the Rights Commissions that have operated in the last decade (Rights of Child, Women and Gender Equality, Indigenous Peoples), this analysis will encompass the adequacy of their mandates and resources based on results to date, the need for additional implementing legislation and improving their profile with the public. In the case of the Human Rights Commission, the current structure will be revisited in the context of the original Constitutional Reform Commission's recommendation for a more independent and empowered Commission appointed in a functional and timely manner. Further changes would ultimately be effected through reform of the Constitution.

4.2.5 H3 Decentralisation and Local Governance

4.2.5.1 Analysis

International experience in decentralisation demonstrates that devolving authority without an equal capacity to deliver will not bring success. Rather, the end results are local governments with statutory responsibilities that cannot be fulfilled, leading to poor service delivery, degradation of the local environment, low client ratings and fiscal exit as citizens and businesses refuse to pay taxes. At the same time, unbalanced decentralisation wherein communities are given expansive responsibilities but limited revenue sources to fund them is another common problem with similar results. The strategy the government will adopt is one of balanced decentralisation and capacity development that matches delivery capacity with growing fiscal capacity.

4.2.5.2 Policy Priorities for Decentralisation and Local Governance

H3.1 Strengthen the role of Ministry of Communities in building capacity of the local government authorities while simultaneously removing structural obstacles to growth. In the short term the Ministry of Communities will continue promoting open, inclusive and increasingly green local development planning in cooperation with local communities. The strengthening of local government personnel systems in the short term would allow for further staff and systems development within the local councils that provides a strong institutional foundation for elected officials. The Ministry should promote use of the fiscal transfer formula, as local fiscal participation improves, based on the capacity of local government councils and to incentivise performance improvement. In the short- to medium term, the Ministry should address structural obstacles to greater fiscal autonomy, primarily the outdated property valuation system. The proposed pilot project with the New Amsterdam property registry should be implemented and evaluated and a plan developed for upscaling. In the long term and as local management and fiscal capacity improve, Government will

examine the potential for a portion of revenues generated by local productive (extractive/non-extractive) activities to be channeled to local development plans

H3.2 Promote greater autonomy in the regional system to support the efficiency, effectiveness and growth of services within green towns. Regions will gradually be given greater levels of autonomy to promote regional development, as envisaged when the system was first established in the early 1980s. In the short term, efforts should focus on integrating existing development and spatial planning efforts within various regions. The planning process will evolve into regional development strategies in the medium term with economic and spatial components that are in harmony with the overarching land policy and with village improvement plans of indigenous communities. The government will commission a study to examine how best to reform and strengthen the independence of the regional system, examining issues such as economic and fiscal capacity, law and regulation-making, regional infrastructure, and relationships with central government entities and statutory agencies. Consideration will be given to avoiding a one-size-fits all strategy given the differences in Guyana's regions. The results of this study, in the light of any required legal and constitutional reforms, would govern decentralisation goals over the longer term.

4.2.6 H4 Land Governance

4.2.6.1 Analysis

Land is Guyana's most abundant asset and improving its governance represents one of the keys to unlocking the structural transformation envisaged in the Strategy. Guyana has one of the lowest population densities in the world, yet in the populated coastal areas it increasingly experiences many of the constraints of more population-dense countries. Some of these are physical and due to its unique geography. The expansiveness of Guyana's hinterland provides its own set of challenges to effective governance and sustainable development, including establishing an effective presence over such a large area.

Land governance also addresses the land rights of Indigenous Peoples. The indigenous peoples of Guyana have sought formal recognition of and respect for their land rights since prior to Guyana's independence. Their connection to the land and its resources is recognised in Guyana's Constitution, the Amerindian Act and several other laws relating to the stewardship and conservation of Guyana's national patrimony, as well as in international agreements to which Guyana is a signatory. *The Green State Development Strategy*: *Vision 2040* recognises the need for sustainable, inclusive and socially cohesive development of Guyana's natural resources. Therefore, the primary policy objective as it relates to indigenous land is the resolution of those claims in a manner satisfactory to the indigenous peoples and cognisant of the livelihood needs of other Guyanese.

The governance of extractive resources is also prioritised in the *Green State Development Strategy*: *Vision 2040* particularly as it relates to the sustainable use of natural resources and stewardship of the national patrimony. Governance and institutional objectives must promote sustainable and efficient use of resources, reduce conflict between multiple land uses and users by clarifying institutional mandates and achieving better synergies among statutory agencies, supported by effective enforcement of the regulations governing the sector. For the established extractives sectors – principally forests and gold mining – the two most critical overarching interventions are the resolution of indigenous peoples' land claims and in the

context of an Integrated Land Use Planning system. Implementation of these recommendations as a priority provides the critical opening to address other issues of governance.

4.2.6.2 Policy Priorities for Land Governance

H4.1 **The governance of land is given the highest priority.** With the articulation of Guyana's first National Land Policy that provides the framework for managing our land resources more efficiently and sustainably, improved governance of land will eliminate related resource use conflicts and reduce land degradation. Critical to this effort are new government-wide geographic information systems that form the basis of a state-of-the art integrated land use planning system. New governance of the extractives industries emphasises greater transparency and oversight, stronger enforcement roles and resolution of indigenous peoples' land rights. Government will be brought closer to the people with knowledge management and e-governance systems that give more control and influence over decisions that impact people's lives.

H4.2 **Establish the Integrated Land Use Planning (ILUP) system**. From a land use planning perspective, the most important objective of a National Land Policy is to articulate Government's priorities as it relates to alternative uses of land and to spell out the criteria for determining best use. The ILUP system will be supported by modern land use planning legislation that spells out the planning process and institutional roles and responsibilities across agencies and levels of government. Logical outgrowths of these efforts would be a national spatial development plan as well as a series of regional spatial plans, developed or updated in collaboration with Regional Development Councils. Spatial development planning will inform regional economic development planning so that investments from the national budget can be directed to support critical infrastructure needs.

Resources will also be invested in strengthening technical and human capacity in various planning departments and agencies to utilise the ILUP system. The ILUP will be supported by an adequate spatial data infrastructure that will promote more climate-smart, resilient land use that preserves natural and eco-system services. Forward planning will allocate lands to specific uses and plans to reclaim lands from inefficient uses and recapture degraded land through better incentives.

H4.3 **Assess the feasibility for an overarching land use management authority.** The institutional architecture of natural resource management in Guyana currently involves a wide range of independent statutory agencies whose mandates to develop and manage their respective sectors often put them in competition and create coordination problems. A land policy and land use planning system may not be sufficient to prevent all conflicts, so consideration should be given to designating an overarching institutional mechanism for inter-agency coordination that could make recommendations to Cabinet if necessary. This authority will set broad land use categories, ensuring landscape level objectives are met for infrastructure development, water quality, ecosystem services and protected areas. More detailed land use planning will take place at decentralized levels within the context of strategic-level objectives. A single agency will be identified to coordinate urban land use planning across CHPA, GLSC, municipalities and local governments. A clearinghouse

mechanism will be established among hinterland land use entities (e.g. GGMC, GFC, GLSC, etc.) to ensure the issuance of licenses for extractive activities are not in conflict.

H4.4 **Prioritise strategic investments to improve land administration.** Establishing a modern Land Information System at GL&SC requires digitising the remaining paper-based systems, upgrading mapping and imaging capacity, and consolidating institutions. The target is to complete the digitisation of the remaining 90% of the cadastral plan in the short- to medium term. Investments are also prioritised for a comprehensive overhaul of the geographical information systems (GIS) system. Much of what has happened in this area has been project-based and sectoral, and not driven by the need to build a coherent, interoperable system across government agencies and users. The exercise will be guided by the ILUP and will include updated inventories of topographical maps (1:50,000), high- and/or low-resolution imagery for mapping areas of high/low population densities, and to facilitate more accurate land use planning and management. Significant investment in equipment and software systems to manage mapping data will be necessary. The GL&SC has the legal mandate for land use planning and would be the home for an integrated geographic information system to which other agencies regularly contributed data.

Government will also examine the feasibility of combining the land, commercial and deeds registries to improve the sharing and flow of information, as has been recommended in the past. This, combined with information on licenses for resource extraction provided by extractive sector agencies, could form the backbone of an online property rights registry that would provide a multi-layered database of all claims to particular plots of land.

H4.5 **Resolve the land rights of indigenous peoples.** Progress with the Amerindian Land Titling Programme has slowed over the last three years. Claims for extensions have not been processed while extractives activities have continued to be licensed on lands claimed by the indigenous communities. The commitment to addressing concerns of indigenous communities remains and must resolve all outstanding applications for village lands, whilst also addressing the issue of extensions to include "customary" lands, all on the basis of the free, prior and informed consent of the indigenous people.

H4.6 **Implement the Integrated Land Use Planning system**. Under the coordination of GL&SC, the government's Sustainable Land Development and Management Programme (SLDMP) has launched a process of developing a National Land Policy, which will guide a new national land use planning system. In addition to developing a land policy, the process will involve inter-agency collaboration across the land and natural resource agencies and with civil society to identify and eliminate conflicting mandates across agencies, streamline data systems and propose new protocols for inter-agency information sharing and coordination.

The issue of overlapping mandates (among the GGMC, GFC, GL&SC, EPA, Protected Areas Commission, GTA), while important, is less critical than the question of managing multiple-use permitting on the same piece of land, and on lands claimed by indigenous peoples. This practice has gone on for many years and it will take some effort to de-conflict these areas in the context of a new land policy, institutional architecture and integrated planning system. The Government can elect not to renew extractive licenses in areas that have not been beneficially utilised or could be put to alternative, more productive and sustainable uses.

H4.7 Better oversight and control of mining operations is a priority. Governance of the sector will be improved by refocusing the GGMC around its core mandates of permitting, regulation and scientific research/information sharing. This will require the GGMC to relinquish environmental oversight of small- and medium-scale gold miners to the EPA, whose capacity should be strengthened to take this responsibility and begin issuing environmental permits based on impact assessments and post-mining reclamation plans. As noted elsewhere, the use of aerial and other technologies can be of great benefit to supporting the environmental over-sight of the sector. Close collaboration between the two institutions would still be necessary, but this would free the GGMC from a responsibility that conflicts with its mandate to promote development of the sector. Related to this is the urgent importance of publishing a comprehensive minerals inventory as part of an integrated land use management system. This would not only assist small-scale entrepreneurs for whom exploration costs are a significant barrier but would also remove some of the incentives that unwittingly encourage landlordism. It would also allow GGMC to establish a more modernized digital portal for mining applications on specific areas of land.

H4.8 Promote transparency in Oil and Gas sector. The focus is on ensuring that Guyana benefits as much as possible from this new resource through measures that promote transparency, accountability and social cohesion. As detailed in section 3.4 above, a new Department of Energy (under the Ministry of the Presidency) is leading the effort in the energy sector transition. The Department will coordinate and bring coherence to policy implementation across the renewable and non-renewable sub-sectors. Within this institutional context, the Government will continue its comprehensive legal and regulatory review of the oil and gas sector to ensure it is forward looking and consistent with this Strategy's priorities, including environmental and safety regulations and new economic areas such as the production and use of natural gas. The Government is currently updating the Petroleum (Exploration and Production) Act and has drafted a Petroleum Commission Bill to establish the principal regulatory body for the sector. These bills should emphasise transparency and public accessibility in all elements of the regulatory process, consistent with EITI and other government anti-corruption commitments. This is especially the case with oil and gas licensing and contracting systems, where public auctioning and open online licensing systems should be instituted. The governance of the Petroleum Commission should model those of other semi-autonomous agencies (e.g. GGMC, GFC) and include a board of directors that takes general guidance from a subject minister.

4.2.7 H5 Knowledge Management, Information and Communications Technologies

4.2.7.1 Analysis

The appropriate utilization of information and communications technologies (ICT) can improve the lives of all Guyanese and is therefore a cross-cutting component of the *Green State Development Strategy: Vision 2040*. ICT has the potential to make government services more widespread, effective and responsive, as well as be a driver of new green business activity. The Ministry of Public Telecommunications (MoPT) is creating an enabling environment for effective utilization of ICT in the public and productive sectors. In terms of salary levels and cost of operations, Guyana has the potential to become a competitive and leading provider of ICT services in the Caribbean region.

Guyana's investment climate, however, remains hampered by poor telecommunications infrastructure, slow and costly internet connectivity, and a single international voice and data gateway. Fixed broadband services have improved, but are still comparatively slow and expensive, and the number of broadband subscribers is limited. In-country Internet and broadband infrastructure is concentrated in the coastal region, while the hinterland has sparse and even more expensive connectivity options. Because of the dispersed spread of homes and businesses across remote interior regions, it is difficult for government and other services to reach the poorest areas. Cost and other barriers affect those residents' ready access to vital services available in urban and rural areas. The legislative framework for telecommunications was recently modernised but other legislation remains outdated or in need of reform. Guyana has no intellectual property legislation and its current framework is outdated and piecemeal. Furthermore, Guyana's public sector does not have a tradition of information sharing among departments and agencies, nor of a proactive stance of making government held data and information accessible to the public.

The MoPT's strategic plan focuses on strengthening the legal, regulatory and policy environment in the sector, utilizing eGovernment to transform service delivery and effectiveness; promoting universal access and connectivity; providing ICT business facilitation and development; and strengthening its internal capacity to deliver results.

4.2.7.2 *Policy Recommendations for Knowledge Management and ICT*

H5.1 Facilitate wide ICT adoption. Under the e-Government business model, the operation of a wholesale model is prioritised along with granting access to the broadband network to commercial operators, ISPs, and other interested enterprises, enabling them to commercialise connectivity and sell services to the consumers. Basic connectivity will also be provided to consumers for free, but an overall traffic limit may be applied where required (e.g. 100 MB per month, per person).

In relation to e-Services, a basic assumption is that the public sector can provide internet access to public buildings and e-Government services to the population, and these will be free of charge for consumers. In the short term, the government will increase efforts to construct data centers, improve their capacity, outfit schools and e-libraries, launch e-health initiatives and increase security through closed circuit cameras. Implementation of supporting programmes will be closely monitored for their results: E-Learning: Finalising and extending the One Laptop per Teacher program is the most important initiative; E-Health: The basic services such as internet access via a stationary PC and communication availability and providing for enhanced maternal healthcare; and E-Government services: The programs which are already partially in place (email, DMS, calendar) should be expanded and made into enterprise-grade services, as well as, extending the website hosting capability.

H5.2 Encourage a culture of data and information sharing throughout government. The implementation, monitoring and evaluation of the policies and programs called for in this Strategy require not only investments in modern data collection systems, but a wholesale evolution in the way government agencies and departments work together. The absence of an ethic of information sharing and collaboration among agencies of government is a major barrier for national data and statistics generation and for inter-agency/sectoral collaboration and planning. As part of the monitoring and evaluation programme for the *Green State*

Development Strategy: Vision 2040, Government will identify obstacles to information sharing of a systemic and practical nature and issue new guidance to remove these barriers.

H5.3 Strengthen the capacity of the National Data Management Authority (NDMA). The NDMA is the catalyst for e-Service introduction, but also serves the role of gatekeeper and organiser of inter-agency cooperation. It will oversee, steer and streamline all efforts related to e-Services, while leaving space for individual agencies to innovate and pursue special projects. All applications will be hosted by NDMA with some exceptions. As an indicative guide, 80% of the e-Services offered online should be operationally managed by NDMA with up to 20% by individual ministries and agencies. The capacity of the NDMA will need strengthening at institutional and personnel levels for this new role if not, reoriented. Capacity building will also be extended via a national training center to other government personnel (e.g. teachers, health professionals and administrative staff, especially in hinterland and remote areas) to ensure optimised use of the e-Services. Government will put in place the legal framework to facilitate digital cooperation between different public entities and address legal issues related to specific e-Services (e.g. health e-Services).

In the medium term, Government will advance its open government agenda through legislative reform (public records act, Access to Information Act reform) to ensure that all data, which is not expressly categorised as confidential, is proactively published and made accessible to other government agencies and the public. Information in the extractive and natural resources and environment sectors will be a priority, consistent with the 'green state' agenda and Guyana's obligations under the Extractive Industries Transparency Initiative. The Ministry of Telecommunications will lead and oversee the effort in consultation with stakeholders in the business community and civil society.

Chapter 5: Financial Mechanism and Implementation

5.1 Financial Mechanism

5.1.1 Introduction

The financial mechanism of the *Green State Development Strategy: Vision 2040* provides information and direction on resource mobilisation in order to obtain the funding required for the Strategy's implementation. Given the scale and cross-cutting nature of the Strategy and the UN Sustainable Development Goals (SDGs) and 2030 Agenda, its implementation requires a new approach for funding and resource mobilization. The UN Addis Ababa Action Agenda commits the world's nations to mobilising finance from a variety of sources, including traditional aid flows, but also private sector finance. With the Strategy's priorities in mind, this financial mechanism examines the wide pool of public and private, national and international funding available to Guyana.

The first step to accessing finance requires robustly costing the policy recommendations of the *Green State Development Strategy: Vision 2040*. Within the Strategy, estimated costs are presented for hard investments in transport infrastructure and coastal defence totaling USD 1.9 billion and USD 78 million respectively, drawing from previously published sector strategies. The green economy modelling also provides indicative costs for activities in the priority sectors (see Chapter 1). As the priorities laid out in the Strategy are taken forward for development, the implementing Ministries must work to develop specific and detailed costings for key projects. A clear understanding of aggregate financing needs will help the Government of Guyana to better select the most appropriate funding sources from those explored below.

The remainder of this chapter explores how to unlock finance from various sources, describing, for example, domestic and international sources of public finance, and private sources of finance.

5.1.2 Domestic Public Finance

5.1.2.1 Overview

Like much of Latin America, Guyana struggled with falling commodity prices, budget deficits and high external debt throughout the 1980s. Guyana suffered large public sector deficits and a ballooning debt-GDP ratio (over 700% in 1987). This culminated in an IMF-led austerity and restructuring package introduced in 1988, the Economic Recovery Program (ERP), which combined fiscal reforms with international support. The ERP stabilised the economy and external debt levels. It was not until the Inter-American Development Bank (IDB) cancelled USD 470 million of debt in 2007, however, that the net debt-to-GDP ratio fell significantly, from around 80% to under 50%, as shown in 0.

In the short term, Guyana has little flexibility to finance increased spending from tax receipts. The Government has experienced a primary budget deficit for the last 20 years. Expenditure has risen steadily since 2015, from 29% of GDP to a projected 35% in 2019. Capital expenditure is taking an increasing share of Government expenditure, reaching 22% of overall public spending in 2018.

Figure 1. Guyana's debt has significantly declined

Note: Net debt is equal to gross debt minus central Government deposits in the banking system. In 2016, central Government was borrowing from the central bank, therefore, central Government had no deposit and the net debt is equal to gross debt.

Source: IMF World Economic Outlook Database, April 2017

However, the Government has some fiscal space to use borrowing as a financing strategy for additional public expenditures. IMF sets Guyana's external debt ceiling at 40% of GDP and 150% of exports in present value terms and recommends a 'prudent debt level' of 10-11% below this ceiling.[86] The present value of external debt was 23% of GDP in 2017. This indicates that external debt could rise by 6-7% before breaching levels considered prudent by the IMF.

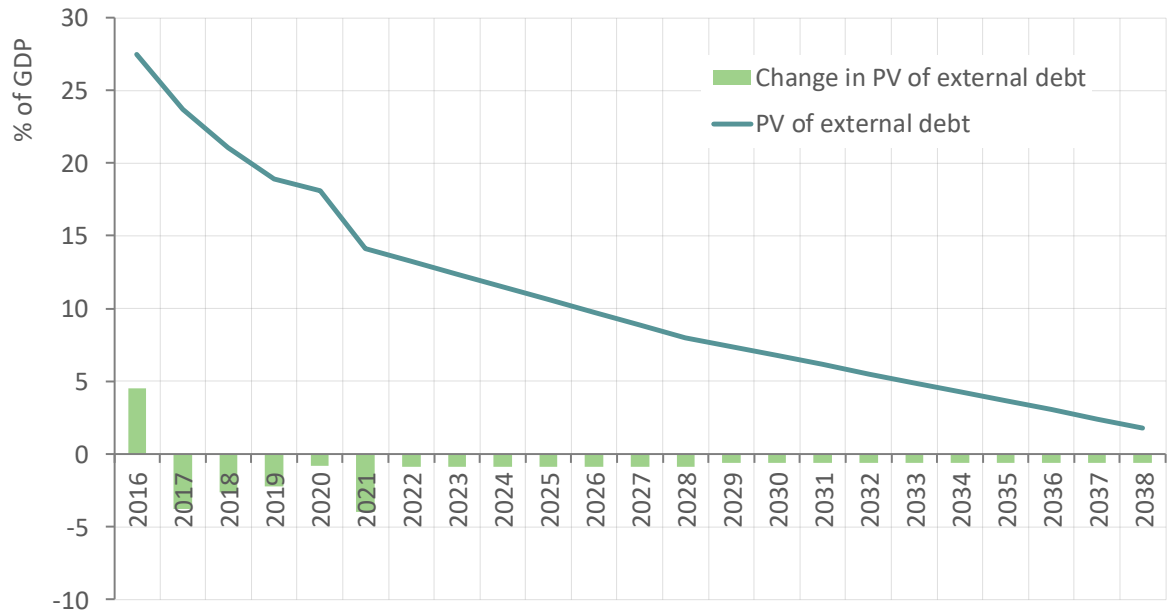
Guyana has limited options in raising public debt. The country lacks a sovereign risk rating by major international credit rating agencies, though this is not unusual for a country of its size and income level. The majority of its debt is short term treasury bills held by the domestic banking sector. This leaves it vulnerable to short term changes in interest rates and the IMF has recommended exploring longer term bonds as an alternative which would be more conducive to longer term infrastructure investments. Commercial banks have indicated that they would be interested in purchasing a wider range of domestic public debt instruments, including medium and long-term Government bonds. Such bonds could be a significant source of reimbursable finance for the *Green State Development Strategy: Vision 2040* but would come at a higher interest rate than existing short-term treasury bills.

In the medium term, oil production will dramatically change the fiscal landscape and ease pressures on the budget and debt burden. Estimates of oil reserves and expected daily production vary and the Government has as yet signed only one production sharing agreement. Oil production is expected to commence in mid-2020 at an output of 100,000

[86] IMF (2018). Guyana: 2018 Article IV Consultation.

barrels/day and to increase to 300,000 barrels/day by 2025.[ibid] The Government's share is initially 14.5% of gross oil revenues but increases after the oil companies recover their initial investment, peaking at 70% of gross revenues, before tapering off. If the Government maintains a long term primary deficit of 4.7% of GDP, the IMF projects that oil revenues will lead to a net deficit of 0.2% by 2023, before turning to a sustained surplus.[87] Figure 2 demonstrates the impact on external debt levels; in present value terms, these fall sharply to reach 13.2% of GDP by 2022 and decline more gradually thereafter.

Figure 2. Impact of oil revenues on external debt levels



Note: *Figures for 2018 and beyond are projections. PV: present value.*
Source: IMF (2018). Guyana: Debt Sustainability Analysis.

5.1.2.2 Fiscal revenue and public debt

Oil revenues will form a primary source of revenue for implementation of the *Green State Development Strategy: Vision 2040* but may not be able to provide large flows of finance in the short term. Public oil revenues will be channeled to a sovereign wealth fund (the Natural Resources Fund) with clear fiscal rules on how much money can be withdrawn from the Fund and for what purpose. These rules will ensure the money is managed transparently and withdrawals stay below levels considered at risk of creating dangerous inflationary pressure on Guyana's currency. In the short term, funding available for implementing the Strategy will be limited while revenues are used to recover oil companies' exploration costs and capitalise the Fund. In the longer term, withdrawals from the Fund will form a large and critical source for financing the Strategy. The Natural Resource Fund Bill 2018 makes explicit mention that withdrawals may only be used to "finance national development priorities including any

[87] IMF (2018). Guyana: Debt Sustainability Analysis.

initiative aimed at realising an inclusive green economy" or to mitigate the impacts of a natural disaster.

International and private investment will remain important sources of capacity. Despite the large amount of finance available through Guyana's Natural Resource Fund, international and private participation will be key to ensuring the efficiency of investment. Primarily, these sources of finance will help identify, screen and develop suitable investment opportunities. The expertise and diligence of private investors will ensure that reimbursable investments are financially sound. International public sources also have comparative strengths in identifying projects with sizeable development and environmental benefit. Blending public finance with private finance helps the Government share risk and leverage the largest possible development impact from its funding. Foreign direct investment (FDI) is also an important channel for technology dissemination and entrepreneurship, both important drivers of growth in knowledge-based economies.

Guyana should continue to strengthen its capacity to collect tax revenues. Over the last decade, Guyana has implemented a series of tax reforms helping to increase public funding for vital public services and investments. These include a comprehensive reform of inefficient exemptions, introduction of VAT, computerisation of taxes and customs, taxpayer identification and income tax withholding systems. These have helped raise Guyana's non-commodity tax revenue from 12% of GDP in 2000 to 25% in 2015, compared to an average of 40% in advanced economies.[88] To further bolster finance for implementing the Green State Development Strategy: Vision 2040, Guyana should continue to strengthen its tax administration, improve efficiency and raise compliance.

Recommendations from the IMF Tax Administration Diagnostic and Assessment Tool (TADAT) include:[89]

- "Developing a three to five-year strategic plan as a roadmap to guide operational delivery;
- Establishing a dedicated reform unit to coordinate the implementation of reforms and improve management control through performance targets;
- Improving information technology, particularly in the use of third-party data, business process simplification, and data analytics to build an evidence-driven compliance strategy;
- Addressing inadequacies in the integrity of the taxpayer register and accounts;
- Institutionalising a compliance risk management program to enable risk profiling and assessment;
- Reorganising the Guyana Revenue Authority's (GRA) structure to place all core specialised functional areas of Customs under the full purview of the Head of Customs;
- Reorganising field offices along segmentation principles; and

[88] https://www.imf.org/external/pubs/ft/fandd/2018/03/akitoby.htm

[89] IMF (2018). Guyana: 2018 Article IV Consultation.

- Establishing the GRA as the single revenue collection agency for the petroleum sector and creating a specialised petroleum revenue team within the Large Taxpayers Unit."

In addition to the above, the Government should consider developing environmental finance tools. This will require developing and implementing commonly used, widely applicable, and potentially high-impact environmental finance tools that are already in use. The tools include fees, loans, payment for ecosystem services; market-based mechanisms; clean development mechanisms; and voluntary emission reductions, subsidies, and taxes that have been successfully applied to protect the environment and promote pro-poor and predominantly rural development. Importantly, environmental finance tools can help support the implementation of the *Green State Development Strategy: Vision 2040* not only by raising finance but also by influencing private sector production and consumption decisions to better reflect their environmental impacts. The economic boost from oil production provides a good opportunity to introduce such policies.

5.1.2.3 Public financial management

Development objective A (section 2.2. above) of the *Green State Development Strategy: Vision 2040* presents a series of recommendations on how to ensure oil wealth is managed sustainably and how public investment management can be improved. These recommendations call for the rapid finalisation and implementation of clear policy and legislation, including to:

- Fully implement the Natural Resource Fund Act (NRFA) and establish the institutional arrangements required for the full operation of the Fund;
- Prepare national budget operations for the integration of an extensive and long term social investment program, including transitioning to a Medium-Term Expenditure Framework (MTEF);
- Strengthen the ability to design, procure, manage and evaluate large investment projects, and establish a delivery unit for the design and management of critical projects;
- Implement the Public-Private Partnership (PPP) legislative framework with institutional designs and guidelines for the establishment of a PPP unit.

A medium-term expenditure framework (MTEF) is essential to accurately manage public resource and sustainably fund multi-year investment programmes. An MTEF must be established either in law or as an officially adopted policy, and detail over what length of time expenditure ceilings are set, and how frequently these are revised. MTEFs strengthen the ability of the Government collectively, and the Ministry of Finance in particular, to plan and enforce a sustainable fiscal path. If properly designed, an MTEF should force stakeholders to deal with the medium-term perspective of budgeting and budgetary policies rather than adopt an exclusively year-by-year approach.[90] 88% of OECD countries are reported to have MTEFs in place.

To be effective, an MTEF must translate medium-term high-level fiscal objectives into actionable year-by-year spending targets. MTEFs typically cover a period of three to four years and aim to improve the quality and certainty of multi-annual fiscal planning by combining prescriptive yearly expenditure targets or ceilings with projections of expenditure, revenue

[90] OECD (2014). Budgeting Practices and Procedures in OECD Countries.

and the aggregate fiscal position.[ibid] Some MTEFs set targets or ceilings on a sectoral or policy area basis while others set aggregate government-wide ceilings. These may typically cover each year of the MTEF and can be updated annually or remain fixed for a specified period. An effective MTEF ensures that yearly ceilings or targets are consistent with the Government's broader medium-term fiscal objectives for aggregate revenue, expenditure, the primary budget deficit and total public debt dynamics.

The OECD identifies six key factors for the success of an MTEF: [ibid]

- "Conservative forecasting of expenditure and revenue (better to have more good surprises).
- Provide ministers with incentives to under-spend.
- Complete coverage of the MTEF increases its credibility.
- Keep it simple: the public (and Parliament) need to understand the MTEF to support it.
- Compliance with the MTEF needs to be a binding consideration in the design of sectoral policies.
- Deviations from previously-set ceilings should be reconciled transparently each year."

This is also endorsed by the IMF and the Ministry of Finance, as highlighted in the 2018 budget speech, and should be seen as a priority to ensure the successful implementation of the Green State Development Strategy: Vision 2040. Guyana's 2017 Public Investment Management Assessment (PIMA) evaluated infrastructure governance using 15 key institutional features across the three stages of the planning investment cycle (see Figure 3 below): (i) planning public investment; (ii) allocating public resources to sectors and projects; and (iii) implementing productive public assets. Guyana's PIMA identified several strengths such as the preparation of separate capital and recurrent budgets, but also identified particular weaknesses in the planning, budgeting, appraisal, procurement and implementation of capital projects.[91] As an initial step, it called for a medium-term fiscal framework which integrated project-specific cash flow models covering at least soon to be active oil wells and the two large gold mines.

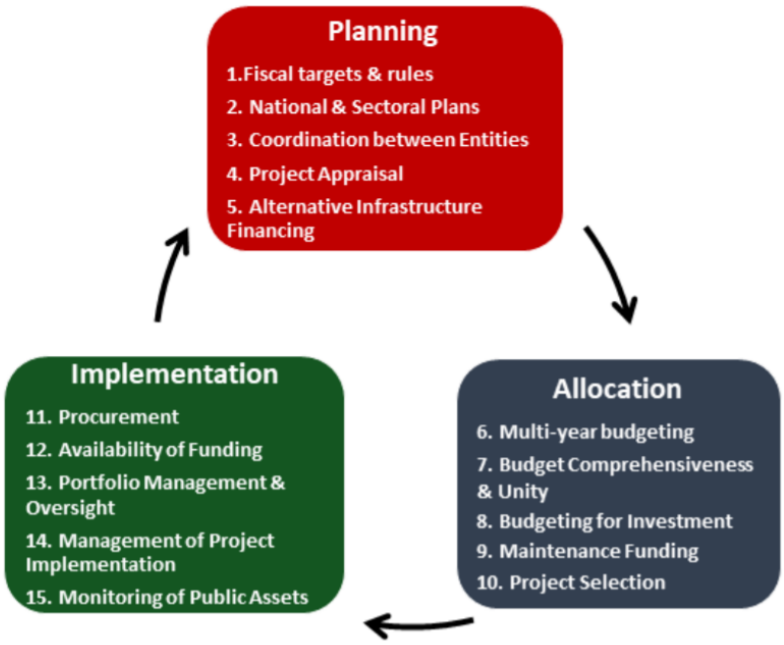
Additional recommendations for reform from Guyana's PIMA include:

- Identifying key strategic public investment projects to guide medium-term budgeting;
- Completing and publishing the policy framework on PPPs;
- Improving the monitoring of state-owned enterprises to coordinate their public investments and to monitor fiscal risks;
- Preparing and disseminating detailed guidance on project preparation and appraisal, allocating sufficient resources to pre-investment planning, and increasing the budget agencies' capacity to undertake appraisals;

[91] IMF (2018). Guyana: 2018 Article IV Consultation.

- Enhancing access to public procurement information and updating regulatory framework international standards, including the requirement for procurement planning;
- Issuing detailed guideline on project management, enforcing ex-post reviews for major projects, and building a database for monitoring project implementation; and
- Taking small but gradual steps in monitoring public assets by conducting regular surveys, keeping record of value, condition, and location of non-financial assets.

Figure 3. Guyana's PIMA focused on 15 key institutional features



Source: IMF (2018). Public Investment Management Assessment— Review and Update

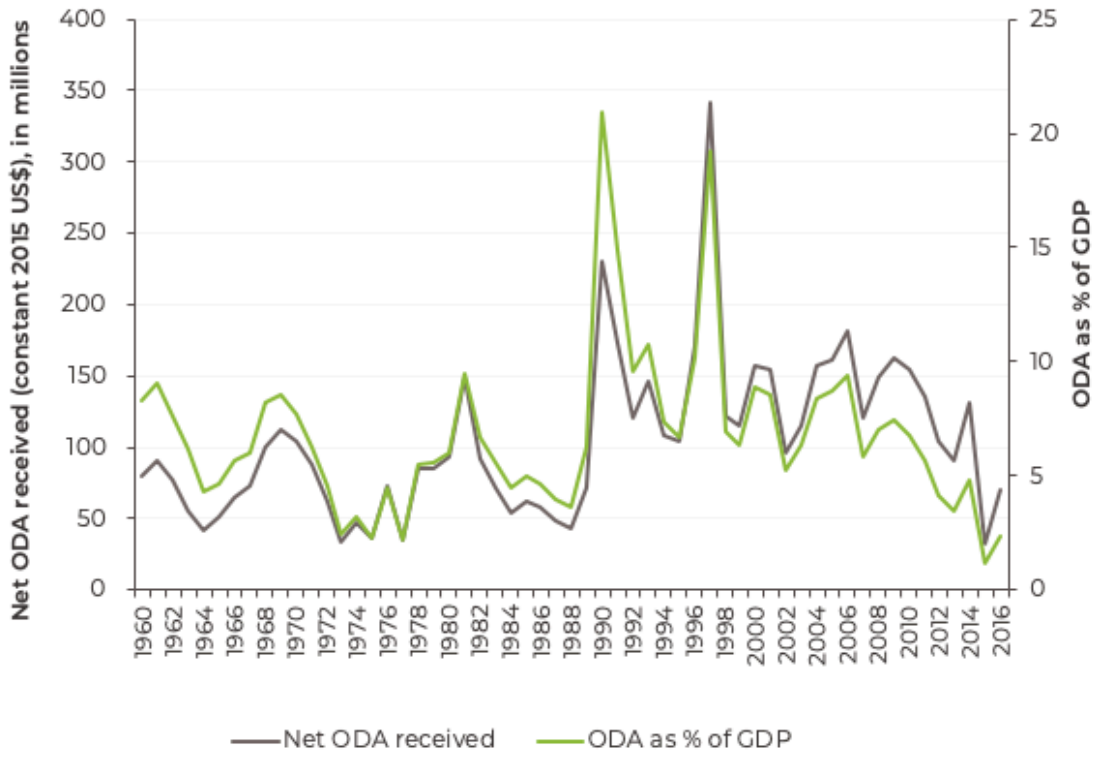
Many of the recommendations above will help facilitate access to both public and private finance. Public and private investors alike will look for credible fiduciary and project management capacity in selecting and approving investments. These skills are central to demonstrating that the Government is able to effectively plan, structure and deliver large-scale projects. In this regard, the Ministry of Finance (or a Strategy Delivery Unit, as discussed under Development Objective A in section 2.2 above) could provide broad funding support to the rest of the Government such as coordination across different Ministries; assistance in identifying viable project opportunities; proposal development; techniques and processes to demonstrate fiduciary capacity; and securing suppliers or viable partners. In doing so, it also builds this capacity in implementing Ministries, strengthening the capacity of the Government as a whole to raise finance and reducing dependence on a central institution in the long term. The Planning Institute of Jamaica is a successful example of a coordinating public agency. It takes responsibility for collaborating with external funding agencies in the identification and development of projects, supports other public agencies in project and proposal preparation, and in some cases takes on a formal coordination role, for example, as a National Implementing Entity of the Adaptation Fund.

5.1.3 International public finance

5.1.3.1 Overview

Official development assistance (ODA) has made an important contribution to Guyana's economy over the past three decades but has declined in significance. ODA has supported the provision of public goods and services in Guyana, such as infrastructure, health and education, relieving pressure on Government budgets. Figure 4 shows that for most of 1990-2010, ODA accounted for over 5% of GDP. However, as the economy has grown, ODA has declined in both absolute and relative terms, to less than 3% of GDP in recent years.

Figure 4. Official development assistance has been declining in significance



Source: World Bank (2018). World Development Indicators

The major limiting factor for the future of ODA financing is Guyana's reclassification as an upper middle-income country in July 2016. Guyana's ODA has mostly been granted on highly concessional terms through grants and low-interest loans; finance must have a grant component of at least 25% to be classified as ODA. With its reclassification, Guyana will no longer be eligible for concessional financing from many creditors. Traditional aid flows are unlikely to provide a significant share of new, additional funding to deliver the Green State Development Strategy: Vision 2040. Although donors are shifting aid to include More

Advanced Developing Countries (MADCs) which offer significant trade benefits, these flows do not generally increase as countries move from LDC to Middle Income Country status.[92]

5.1.3.2 Development finance

The Inter-American Development Bank (IDB), the Caribbean Development Bank (CDB) the World Bank (WB) and the International Fund for Agriculture and Development (IFAD) are Guyana's key multilateral creditors. Through activity programming and renewal of Guyana's country strategy, the Government must ensure donor activities are aligned with the priorities of the GSDS. In turn, this will increase the chances of accessing additional resources to secure its implementation. These multilateral development banks and development funds provide finance for projects on a concessional reimbursable basis.

- Inter-American Development Bank (IDB): The IDB is the most active development bank in Guyana and has an active national loan portfolio of USD 244 million, the majority of which addresses transport and energy needs.[93] IDB released a new Country Strategy program for Guyana for 2017-2021 with an explicit aim to "respond to developing Government priorities in the new Green State Development Strategy." This represents one of the most promising pools of finance for the Strategy and the Government should work closely with the IDB to identify what activities could be delivered or supported. In the past, IDB loans have supported large-scale infrastructure projects and so could be well suited to recommendations under the Strategy's Development Objectives D and E.
- Caribbean Development Bank (CDB): The CDB Country Strategy Paper covers the 2017-2021 period and features a programme of assistance that is designed to help achieve the following development outcomes[94]: increased competitiveness and productivity; improved quality of, and access to, education and training; strengthened social protection; reduced vulnerability to natural disasters; and improved governance and development planning. Accordingly, CDB funds are best suited to Development Objectives C, E and G of the Green State Development Strategy: Vision 2040. CDB has identified an indicative resource envelope of USD 194 million to support this programme.
- World Bank (WB): Guyana's Country Engagement Note covered the period 2016-2018 and continued the strategic objectives set out in the previous Country Assistance Strategy of enhancing resilience of selected infrastructure and building disaster risk management (DRM) capacities; setting up the foundations for high quality education; and laying the ground for private sector development.[95] The WB´s financing to Guyana is channeled through interest-free loans and grants from the International Development Association (IDA). In 2018, the WB approved a USD 35 million Development Policy Credit to support Guyana's efforts to strengthen financial sector development and fiscal management to better prepare the country to benefit from its

[92] OECD. (2017). Development finance and policy trends.

[93] http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=EZSHARE-288779090-4.

[94] https://www.caribank.org/publications-and-resources/resource-library/country-strategies/country-strategy-paper-guyana-2017-2021.

[95] http://documents.worldbank.org/curated/en/945941467999118138/pdf/94017-REVISED-Box394888B-OUO-9-IDA-R2016-0055-2.pdf.

newly discovered oil and gas reserves and transform its oil wealth into human capital.[96] This Credit is expected to be the first of a series of two, both focused on financial and fiscal development, providing an important potential financing line for Development Objectives A, F and H of the Green State Development Strategy: Vision 2040.

- International Fund for Agricultural Development (IFAD): IFAD has worked in Guyana since 1987, providing over USD 30 million in financing for four rural development initiatives that have benefited 16,000 poor rural households.[97] Current IFAD loans support market opportunities for small-scale rural producers and strengthen their capacity to develop small-scale enterprises. The ongoing Hinterland Environmentally Sustainable Agricultural Development (HEAD) Project provides over USD 11 million to improve smallholder farmers' access to public services, knowledge and technologies through training and technical assistance in the areas of planning and natural resources (water, soil, renewable energy, agro-diversity) management. IFAD funding could help support agricultural interventions under the Strategy's Development Objectives B and C.

A number of innovative sources of development finance are emerging which could offer new sources of funding for the Green State Development Strategy: Vision 2040, including both grants and concessional loans, such as:

- **SDG bonds for health and nutrition:** the World Bank has launched a USD 47 million bond to encourage investors to support delivery of the SDGs;[98]
- **Partnership fund for the Sustainable Development Goals:** the World Bank and the Government of Sweden launched a USD 7 million fund to support catalytic high-impact interventions focused on monitoring, refugees and the poverty reduction impact of private sector interventions.[99]

There are also several other financing sources to assist countries in mobilising resources for meeting the SDGs, including:

- **UNDP – "Financing Solutions for Sustainable Development Toolkit (FSSD)":** a searchable database on financing the SDGs to help with reviewing and mobilizing resources to fund national or sectoral development plans and SDG accelerators.
- **UNCTAD - Financing for SDGs:** "Breaking the Bottlenecks of Investment, G28 from Policy to Impact": a web-based portal with examples of best practice and other initiatives of (i) providing leadership; (ii) mobilizing investment; (iii) channeling investment; and (iv) maximizing investment impact.
- **ADB – "Green Finance Catalyzing Facility (GFCF)":** provides guidance from an analysis of the green finance literature and infrastructure financing experience from Asia and the Pacific covering how countries can design financially bankable and

[96] https://www.worldbank.org/en/news/press-release/2018/06/24/world-bank-supports-financial-and-fiscal-resilience-in-guyana.

[97] https://www.ifad.org/en/web/operations/country/id/guyana.

[98] World Bank Group. (2018a). World Bank Group launches new multi-donor fund in support of SDG implementation.

[99] World Bank Group. (2018b). World Bank issues sustainable development bond to raise awareness of health and nutrition of women, children and adolescents.

environmentally sustainable projects, and how private sector finance can be crowded in to support investment.

5.1.3.3 Climate finance

Globally, it is estimated that an average of USD 463 billion per year was spent on climate related activities in 2015/16.[100] This sum has grown by roughly 30%, or USD 112 billion, in the last 3 years. Of this total spend, 46% was from the public sector and 54% from private finance. At USD 272 billion, the majority of funding flowed to purely private recipients, though public recipients also received a sizeable USD 54 billion. Flows to private and public recipients are important streams of potential income to support the implementation of the Green State Development Strategy: Vision 2040, either through direct access from the Government of Guyana or by facilitating access for Guyana's private sector. Grants and concessional debt accounted for 4% and 44% of this total respectively; Guyana would ideally target these financial instruments, through mechanisms explained further below.

Climate financing primarily originates from domestic sources, though international flows from public sources are likely to remain particularly important for Guyana. Of the USD 463 billion, roughly 81% of flows were raised and spent within the same country. The public climate finance that is most likely to be cross-national can be disaggregated across several sources: (i) direct flows from Governments and aid agencies (USD 18 billion); (ii) dedicated climate funds (USD 2 billion); (iii) bilateral development finance institutions (USD 16 billion); (iv) multilateral development finance institutions (USD 46 billion).

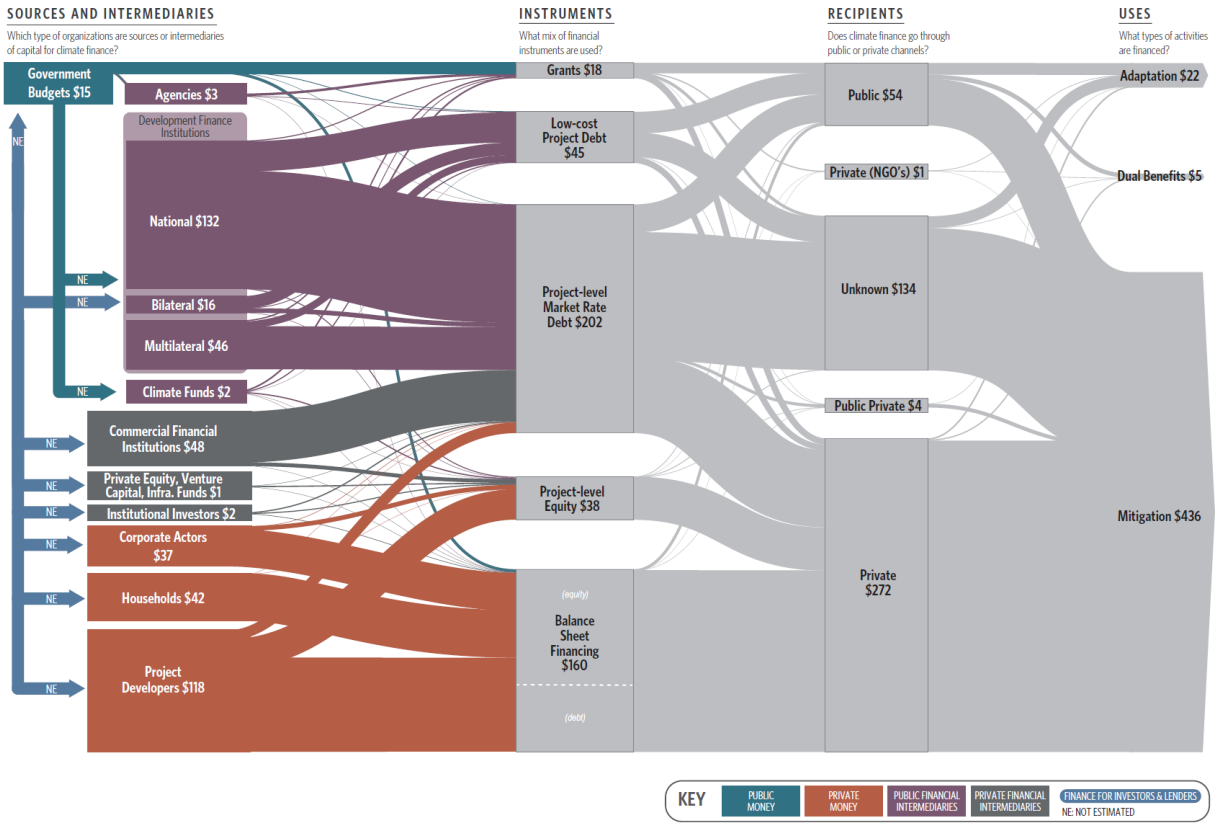
Much more is spent on mitigation than adaptation. Of the USD 463 billion in total climate finance provided, around 94% (USD 436 billion) was spent on mitigation activities, around 5% (USD 22 billion) on adaptation activities, and the remaining USD 5 billion on activities supporting both mitigation and adaptation. The share of adaptation spending has steadily decreased over the last few years.

To date, just over USD 173 million of climate finance has been approved for activities in Guyana.[101] 10% of this funding is from five multilateral climate funds and the remaining 90% from a bilateral agreement with the Government of Norway (see Figure 6). All of this funding has been allocated on a grant basis, though these sources do also provide concessional debt.

[100] All figures in this section based on Global Climate Finance: An Updated View 2018. Climate Policy Initiative. Note that development finance and climate finance are not mutually exclusive. A significant share of climate finance, including that from dedicated climate funds, is classified as official development assistance (ODA).

[101] https://climatefundsupdate.org/data-dashboard/

Figure 5. Global flows of climate finance are dominated by private sector funds flowing to mitigation

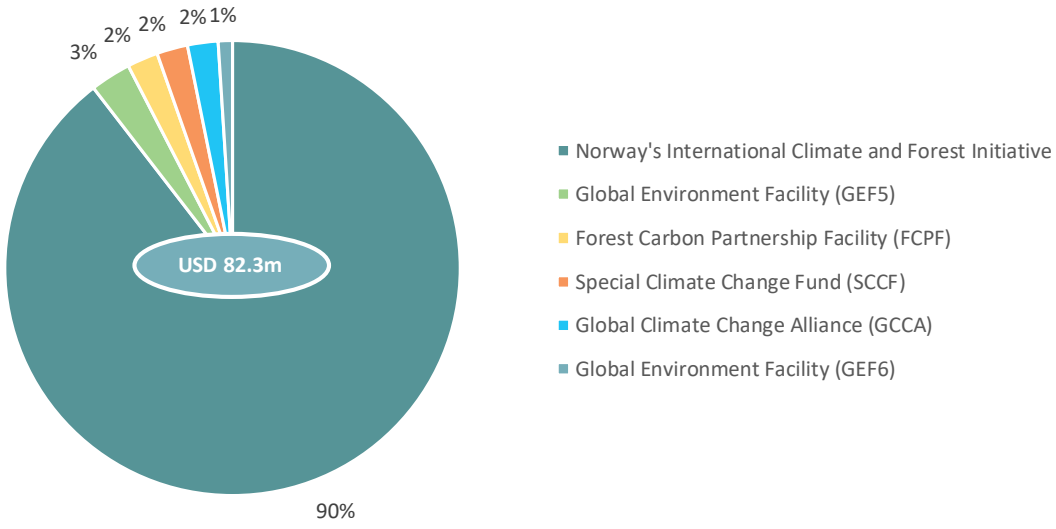


Source: Global Climate Finance: An Updated View 2018. Climate Policy Initiative, values are averages for 2015 and 2016.

This funding is earmarked to support a range of mitigation and adaptation activities spanning forestry, water, sanitation, flood protection and renewable energy and hence, is well aligned with priorities of the Green State Development Strategy: Vision 2040.[ibid] The largest contribution of USD 155 million, from Norway, has capitalised the Guyana REDD+ Investment Fund (GRIF).[102] This contribution was fundamental to the implementation of activities under the Low Carbon Development Strategy (LCDS). A significant portion of the funds remains yet to be allocated and is one of the most readily available sources of finance for the Green State Development Strategy: Vision 2040. The GRIF Secretariat has previously explored a utility-scale solar PV plant, for example. The Government of Norway has indicated the possibility of additional funding depending on progress on Guyana's REDD+ enabling activities and the independent verification of reductions in deforestation and forest degradation.

[102] http://www.guyanareddfund.org/index.php

Figure 6. Norway's International Climate and Forest Initiative has provided 90% of Guyana's climate finance



Note: *Figures relate to approved funding, not disbursed funding.*
Source: *Climate Funds Update (2018).*

Looking beyond this, the *Green State Development Strategy: Vision 2040* could draw on several international sources of climate finance, as set out in Table 3 below. A large share of public sources of climate finance will only be willing to support specific types of activities within the Strategy. 0 maps the strategic areas of the Strategy to a selection of the most relevant and best capitalised multilateral climate funds. This demonstrates some climate funds, such as the Forest Carbon Partnership Facility and the Scaling Up Renewable Energy Program, have a narrow sectoral focus and are applicable to only a few development objectives. Whereas others, such as the Green Climate Fund and Global Environment Facility Trust Fund, provide funding for activities across the majority of development objectives. This mapping should serve as an initial filter for implementing Ministries to identify appropriate funding sources in the process of developing more detailed project proposals.

The Green Climate Fund (GCF) represents the best opportunity for accessing climate finance for the *Green State Development Strategy: Vision 2040*. The GCF is by far the best capitalised of any of the funds considered and still has USD 5.7 billion of its USD 10.3 billion in contributions available to finance future projects. In the past, it has received criticism of its capacity and pace of approval, though this has considerably improved in recent years with approvals rising from USD 1.1 billion in 2017 to USD 2 billion in 2018.[103]

The geographic distribution of GCF funding to date is promising for Guyana. The GCF aims for a 50:50 split between mitigation and adaptation and of the adaptation funding, a minimum of

[103]https://www.greenclimate.fund/documents/20182/194568/GCF_in_Brief__About_the_Fund.pdf/280fa565-334f-4d0a-9f93-ab4034403918

50% approved in either small-island developing states (SIDs), least developed countries or African states. Of its 93-project portfolio, 20 GCF projects are in SIDS.[104]

The GCF's eight impact areas collectively cover almost all of the *Green State Development Strategy: Vision 2040* development objectives:

- Shifting to low-emission sustainable development pathways through:
    - Low-emission energy access and power generation
    - Low-emission transport
    - Energy efficient buildings, cities and industries
    - Sustainable land use and forest management
- Increasing climate-resilient sustainable development for:
    - Enhanced livelihoods of the most vulnerable people, communities, and regions
    - Increased health and well-being, and food and water security
    - Resilient infrastructure and built environment to climate change threats
    - Resilient ecosystems

However, direct access by countries to GCF funding is subject to an accreditation process. Guyana has not yet accredited a national body to the GCF. The primary benefit of direct access is to allow recipient countries greater ownership over funding and to facilitate better integration with national development priorities. This may also increase the chances of approval (national ownership is an explicit investment criteria), reduce bureaucracy and speed up the application procedure. The accreditation process involves four stages (online registration, an initial submission, a review by the accreditation board, and approval by the GCF board), and has taken between two and fourteen months for other national implementing entities.[105] The alternative to direct access is applying for funding through an international or multilateral accredited entity, such as the Inter-American Development Bank (IDB).

The Ministry of Finance can play a lead role in facilitating access to climate finance, and broader green finance, for the rest of the Government. First, the Ministry of Finance could advance its application to become an accredited entity of the GCF or select and support another institution to do so. Five countries in Latin America and two in the Caribbean have accredited national entities, including the Department of Environment of Antigua and Barbuda and the Protected Areas Conservation Trust in Belize.[106] Second, as discussed under domestic public finance, the Ministry of Finance (or another accredited entity) could provide broad support to the rest of the Government to facilitate access to finance such as coordination across different Ministries; assistance in identifying viable project opportunities; proposal development; demonstrating fiduciary capacity; and securing suppliers or viable partners.

[104] https://www.greenclimate.fund/how-we-work/funding-projects

[105] Green Climate Fund (2016b) Consideration of accreditation proposals - overview of accreditation

[106] https://www.greenclimate.fund/how-we-work/tools/entity-directory

5.1.4 Private finance

5.1.4.1 Overview

Foreign direct investment (FDI) will be a critical source of reimbursable finance for Guyana to fund the Green State Development Strategy: Vision 2040. In 2016/17, USD 250 billion of climate finance flows were from private sources (see Figure 5).[107] Though it is not just private climate finance that is rising. A wide range of investors including companies, foundations, impact investors, institutional investors and private equity funds are increasingly demanding reimbursable investment opportunities that demonstrably contribute to socio-economic development such as attainment of the SDGs. Foundations are estimated to have contributed just over USD 100 billion in SDG-aligned finance since 2016.[108]

Historically, Guyana's investment performance has been volatile, underlining the importance of a stable political and business environment and supportive foreign investment policy. Figure 7 examines trends in inward FDI as a share of GDP over the last 20 years. There is considerable variation around the average of 7% across the period. FDI declined in the early 2000s amid political unrest and riots. It doubled between 2004 and 2005, following the passing of the 2004 Investment Act, and remained at 8-10% of GDP for the next 7 years as commodity export industries benefited from rising global demand and falling oil prices. FDI then fell to 1% of GDP in 2016, as Guyana experienced the first change in Government in 20 years, gold prices steadily fell and the Amaila Falls project faced several delays. FDI has since recovered, in part due to rising infrastructure demand from the oil and gas sector. This sensitivity illustrates that a stable business environment, underpinned by effective legislation, is critical to maintaining investor confidence and stabilising FDI levels through geopolitical and market events.

[107] Global Climate Finance: An Updated View 2018. Climate Policy Initiative.

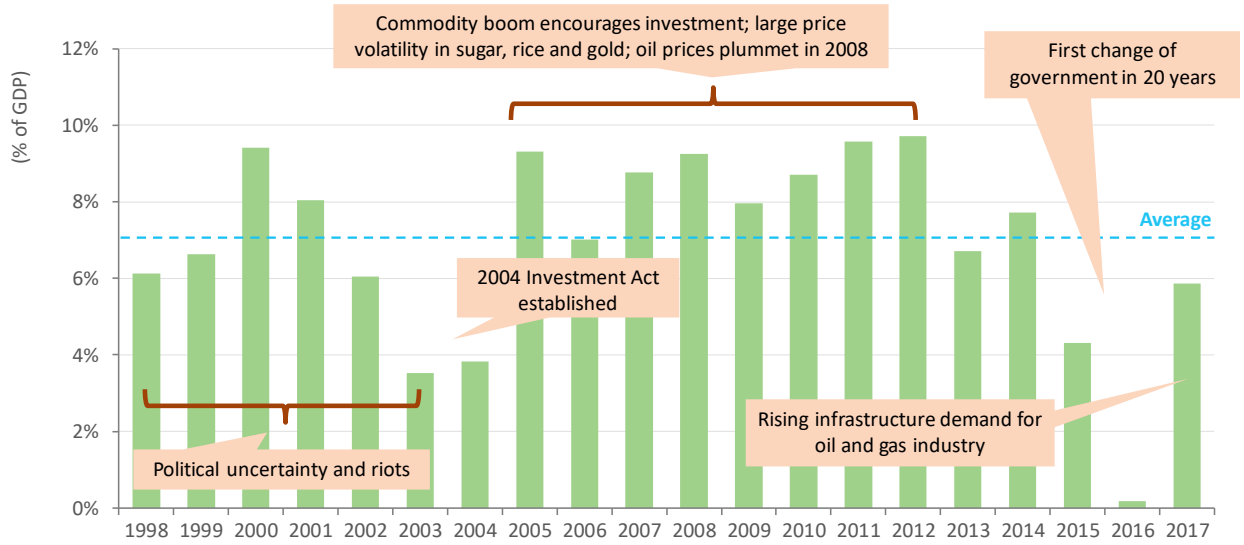
[108] http://sdgfunders.org/sdgs/

Table 3: *Green State Development Strategy: Vision 2040* Objectives B, C, D, E and F are particularly well aligned with multilateral climate funds' investment priorities

		Multilateral climate funds													
		Adaptation Fund	Adaptation for Smallholder	Clean Technology Fund	Forest Carbon Partnership	Forest Investment Program	Global Climate Change Alliance	Global EE and Renewable Energy	Green Climate Fund	GEF Trust Fund (GEF 6)	Partnership for Market Readiness	Pilot Program for Climate Resilience	Scaling Up Renewable Energy	Special Climate Change Fund	UN-REDD
	Unallocated funding (USD mns)	188	-	312	740	303	877	58	5,700	454	76	153	289	75	2
Green State Development Strategy Objectives (DO)	DO A: Sound fiscal and monetary policy	-	×	×	×	×	-	×	-	-	✓	-	×	-	×
	DO B: Sustainable management of natural resources	✓	✓	×	✓	✓	✓	×	✓	✓	-	✓	×	✓	✓
	DO C: Green, Inclusive and Climate Resilient Economic Diversification	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	✓	✓	✓	✓
	DO D: Transition to Renewable Energy	×	×	✓	×	×	✓	✓	✓	✓	✓	×	✓	✓	×
	DO E: Resilient Infrastructure, Green Towns and Urban Public Spaces	✓	✓	✓	×	×	✓	✓	✓	✓	-	✓	✓	✓	×
	DO F: Trade, Investment and International Cooperation	×	×	×	×	×	×	×	-	-	×	×	×	-	×
	DO G: Healthy, Educated and Socially Cohesive Population	✓	×	×	×	×	✓	×	✓	✓	✓	✓	×	✓	×
	DO H: Good Governance and Strong Institutions	-	×	×	×	×	-	×	-	-	✓	-	×	-	×

Note: Unallocated funding is calculated as pledged minus approved funding.
Source: Climate Funds Update (2018); Green Climate Fund (2018)

Figure 7. Foreign direct investment (FDI) has been highly volatile over the past 20 years



Note: *Data from 1998-2015 is from the World Bank and 2016 onwards from the Bank of Guyana.*
Source: *World Bank World Development Indicators; Bank of Guyana Annual Reports 2016, 2017*

5.1.4.2 Investment environment, promotion and facilitation

Efforts to improve investment promotion and facilitation are ongoing. Under the National Competitiveness Strategy (2006), the Guyana Office for Investment (GO-INVEST) is being reformed to improve its efficiency and effectiveness. The reform includes a review of the Investment Act to reduce outstanding discretionary loopholes and revise GO-INVEST's mandate. GO-INVEST is currently drafting a new internal strategy which will guide the development of investment promotion and facilitation in the future.

However, this must be underpinned by a supportive investment environment. The Hubs and Spokes Programme, a joint initiative of the EU, ACP Group Secretariat, Commonwealth Secretariat and Organisation Internationale de la Francophonie, provided a National Trade Advisor to Guyana to evaluate the success of its trade agreements.[109] The assessment concluded Guyana was not realising the full potential of existing agreements due to:

- a severe lack of infrastructure necessary to facilitate trade, especially in communications, financial services and research and development;
- socio-political issues and a perception of low and inefficient policy-making capacity, particularly concerning labour supply;
- high logistical costs, most notably from excessively high electricity prices;
- poor local investor sentiment and a lack of domestic entrepreneurship.

Guyana's performance against Ease of Doing Business indicators is key to attracting FDI; the *Green State Development Strategy: Vision 2040* itself makes several recommendations to

[109] https://europa.eu/capacity4dev/hubandspokes/news/raising-understanding-how-improve-guyanas-trade-agreements

address this. Private investors with an interest in environmental, social and governance (ESG) impacts will find many of the activities under the Strategy attractive, but ESG standards come in addition to, not instead of, financial investment criteria. The Strategy's Development Objectives C, E and F cover the business environment, infrastructure and investment policy respectively. These include recommendations to:

- Modernise and improve the judicial system by fully digitising record keeping in courts and hiring additional magistrates and judges to relieve bottlenecks;
- Develop a transition plan towards a market-based allocation and pricing mechanism for land lots, with clear support mechanisms for low-income families;
- Review the potential to consolidate tax payments from businesses, in particular corporate income tax;
- Undertake wide-scale investments in the road network to better connect the coastal area with the Hinterlands and Guyana's neighbours.

International initiatives such as SDG Impact can help promote investment opportunities under the *Green State Development Strategy: Vision 2040* to ESG investors. SDG Impact is a UNDP initiative aimed at channelling private investment and capital to help achieve the SDGs.[110] It will provide investors and businesses with country-level data and SDG investment road maps with the aim of enabling the use the SDGs as a platform for making investments in developing countries. It will develop SDG impact standards and certification processes, alongside investor matchmaking services. Guyana must capitalise on initiatives like SDG Impact and the emerging support network for financing SDG implementation to better access the increasing amounts of SDG-aligned finance available globally.

5.1.4.3 Climate-aligned bonds

Climate-aligned bonds are a specific type of financial instrument that could offer a new and growing source of funding for the GSDS. Climate aligned bonds are bonds used to finance low carbon and climate-resilient infrastructure. They provide financing to a wide range of sectors including transport, energy, buildings and industry, water, waste and pollution control, agriculture and forestry. In 2018, the climate-aligned bond universe was worth USD 1.2 trillion, made up of 5,730 bonds from 869 issuers.[111] This includes specially labelled green bonds, as well as bonds that are issued by institutions that derive a high proportion of their revenue from climate-aligned assets or green business lines but are not labelled as green bonds.

Although still a small portion of the bond market, green and climate-aligned bond issuances have grown exponentially. Well-defined standards of what constitutes the label "green bond" are still emerging.[112] Generally, they are bonds which earmark proceeds for projects that have environmental benefits. Since the first issuance of a "Climate Awareness Bond" in 2007 by the European Investment Bank, and the first explicitly labelled Green Bond issued in 2008 by the World Bank, the green bond market has grown significantly. In 2013, labelled green bonds and climate-aligned bonds accounted for USD 15 billion and USD 420 billion respectively. In just 5 years, this has grown to USD 390 billion and USD 1.2 trillion (see Figure 8). Green bond indices

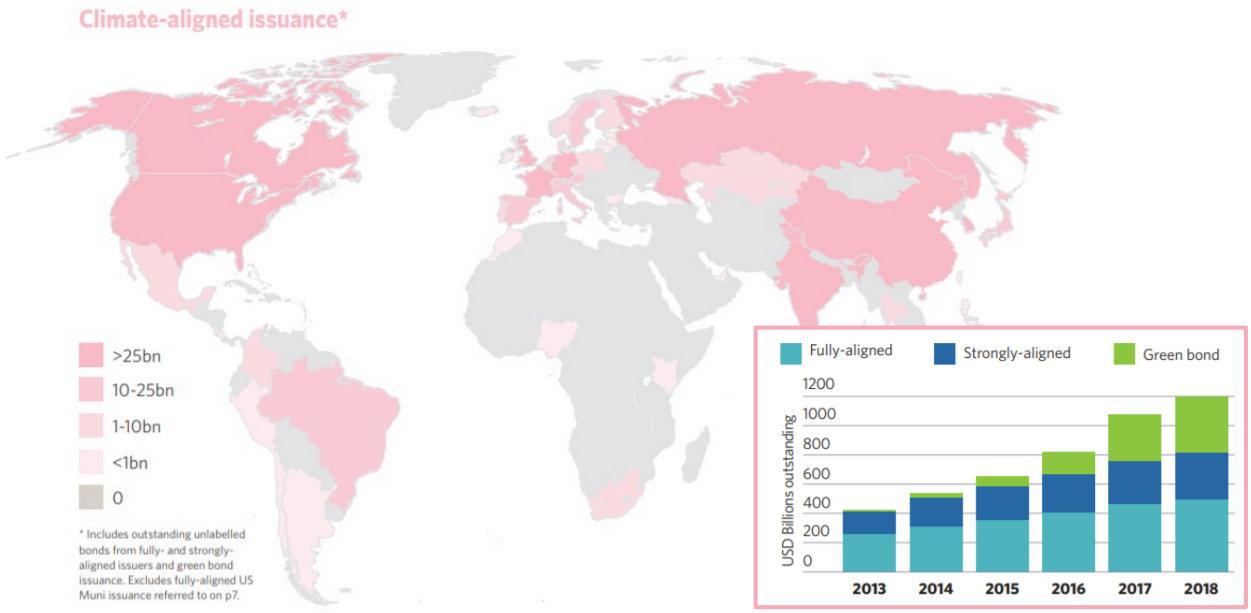
[110] https://sdgimpact.undp.org/

[111] Climate Bonds Initiative (2018). Bonds and Climate Change: The State of the Market in 2018

[112] OECD (2015) Infrastructure Financing Instruments and Incentives

have also emerged to provide investors with a means to evaluate performance and assess risk.[113]

Figure 8. The climate-aligned market has tripled in 5 years, though Latin America and the Caribbean lags behind



Source: Climate Bonds Initiative (2018). Bonds and Climate Change: The State of the Market in 2018

A variety of issuers now support green bonds. Prior to 2011, all labelled green bonds were issued by development banks. Now a range of corporate entities, commercial banks, municipal Governments and Government agencies issue green bonds. Specialised green bond funds support the market with asset managers such as Nikko Asset Management, BlackRock, Calvert and State Street developing their own funds. 84% of the climate-aligned bond market is considered investment grade.[114]

The transport and energy sectors dominate the climate-aligned market, though this has become more evenly distributed over time. In 2013, the transport sector accounted for over 60% of outstanding climate-aligned bonds though this has fallen to 44% in 2018.[ibid] The energy sector now accounts for 23% and the water sector, 8%. In Latin America and the Caribbean, the vast majority of issuances focus on energy, followed by land use, waste and transport.

Climate-aligned bonds have been issued in seven Latin American countries but not yet in a Caribbean country. 8 bonds have been issued in both Brazil and Mexico, and 3 or less in Argentina, Chile, Colombia, Costa Rica and Peru.[115] Over 50% of these were issued by

[113] Labelled green bond indices include S&P Dow Jones, Solactive, Barclays MSCI and Bank of America Merrill Lynch.

[114] Climate Bonds Initiative (2018). Bonds and Climate Change: The State of the Market in 2018

[115] Economic Commission for Latin America and the Caribbean (2017). The rise of green bonds: Financing for development in Latin America and the Caribbean.

development banks or supranational institutions, and over 40% by corporates or banks. To date, a climate-aligned bond has not been issued in a Caribbean country.

This may reflect the need for a higher level of capacity among financial institutions and uncertainty over the relative benefits. Climate-aligned bonds are by nature a vanilla bond with additional restrictions and verification requirements. This implies issuing a climate-aligned bond requires two things: (i) financial institutions active in the domestic market have the technical and financial capacity to issue vanilla bonds and (ii) they judge the benefits to outweigh the additional transaction costs relative to a vanilla bond. The literature has struggled to consistently identify a 'premium' in terms of a lower coupon rate[116] and many financial institutions remain unconvinced this would outweigh the cost of certification (which is typically purchased from a third-party agency).

As Guyana's financial sector develops, it should assess whether climate-aligned bonds could be used as a tool to tap into large-scale environmentally-aware investors. Guyana must first work to develop its financial sector. The Government and financial institutions should continually assess whether climate-aligned bond issuance is worth the additional transaction costs and the best use of limited technical capacity in the sector. In the short term, a multilateral institution such as the IDB is the clearest way for a climate-aligned bond to be issued. In the longer term, the Ministry of Finance and Bank of Guyana should support increased sophistication in the domestic financial sector, including an emerging bond market.

5.1.4.4 Green investment bank operations

A Green Investment Bank (GIB) is an entity established specifically to facilitate private investment into domestic low-carbon and climate resilient (LCR) infrastructure and other green sectors such as agriculture, forestry, water and waste management. GIBs have been established at national level (Australia, Japan, Malaysia, Switzerland, United Kingdom), state level (California, Connecticut, Hawaii, New Jersey, New York and Rhode Island in the United States), county level (Montgomery County, Maryland, United States) and city level (Masdar, United Arab Emirates).

The core objective of a GIB is to catalyse private capital through publicly funded investment and specialised financing capabilities, within sectors that would otherwise not receive sufficient private investment. For Guyana, a GIB would channel investment and capabilities into GSDS-relevant sectors and activities that are 'close to' commercial but struggling to attract private finance. Therefore, the GIB is a tool that can facilitate implementation of the *Green State Development Strategy: Vision 2040* and help attain its low carbon and climate resilience (LCR) targets.

The design and scope of GIBs have depended on the country's context and development priorities. However, they generally share three core characteristics: a) A strict mandate of mobilising private funding for LCR investments using mechanisms to mitigate risk and facilitate transactions, using limited public funds; b) Being an independent authority with regards to investment and intervention decisions, and c) A focus on demonstrating cost-effectiveness and performance reports.

[116] Climate Bonds Initiative (2017). GREEN BOND PRICING IN THE PRIMARY MARKET: October - December 2017

GIBs can use a range of hard and soft tools to address public and private financing challenges. Hard tools involve the GIB providing some form of financing or guarantee whereas soft tools involve the GIB providing an investment facilitation service. These tools address two specific types of challenges, to varying degrees: (i) insufficient project developer participation, where projects are fundamentally unable to make commercial returns or developers are not aware they can; and (ii) insufficient private financing participation, where markets are too immature and information is too sparse to satisfy private investors. Examples of these tools include:

- Hard tools:
    - **Grants:** Non-reimbursable grants to support project viability, usually in return for public good;
    - **Concessional loans/credit lines:** Loans at below-market rates that don't reflect the full risk or transaction cost;
    - **Credit enhancement:** Assurance to repay via collateral, insurance or third-party guarantee;
    - **Subordinate or hybrid debt:** Funding that ranks after other sources of finance if a company falls into liquidation;
    - **Aggregation and securitisation:** Financial engineering to match ticket size requirements of institutional investors;
- Soft tools:
    - **Project technical assistance to developers:** Technical assistance to project developers to identify, assess risks, structure green projects;
    - **Due diligence:** Project technical and financial appraisal to better assess expected return on investment and ex ante risks;
    - **Investor liaison:** Roadshows, one-on-one meetings, presentations, workshops to bring private sector participants around the table to co-invest.

In the context of Guyana, a GIB could be a powerful tool to finance the *Green State Development Strategy: Vision 2040* and long term development ambitions well into the future, though there are considerable set-up costs. Guyana does not currently have a national development bank or a central public financial institution. Given the current structure of Guyana's economy and the scale of its development ambitions, a national development bank or GIB could provide a framework to develop considerable capacity in channeling private sector investment into priority sectors. This is especially pertinent as Guyana enters an important phase of large-scale long term programmatic infrastructure investments. However, development banks and GIBs are not easy to set up and capitalise. On top of considerable initial public funding, the institution would need to credibly demonstrate the ability to responsibly manage large sums of money and programme effective investment pipelines, aligned with the bank's objectives. This would require the implementation of many of the recommendations made under Section 5.1.2.3 on public financial management.

A GIB need not be a new, dedicated institution; GIB mandates, approaches and operations can be embodied within other financial institutions. Many countries have embodied GIBs as independent organisations to promote green-focused investment. However, the objectives of

GIBs and their approaches and methods can also be incorporated within other public financial institutions. Therefore, if Guyana established a national development bank or another central public financial institution, it could look to incorporate GIB operations into its remit, rather than establish a separate GIB. There may be significant economies of scale to this approach given the size of Guyana's government and economy.

5.1.5 Main recommendations

The first step to accessing finance requires robustly costing the policy recommendations. As the priorities laid out in the *Green State Development Strategy: Vision 2040* are taken forward for development, implementing Ministries must work to develop transparent and robust costings for key projects. A clear understanding of the aggregate financing needs will help the Government of Guyana to better select the most appropriate funding sources from those explored in this chapter.

Oil will transform the fiscal landscape easing budget pressures; it is critical the Government immediately acts to strengthen public financial management to use this effectively. In the medium term, oil production will dramatically change the fiscal landscape and ease pressures on the budget and debt burden. Oil revenues will form a critical source of revenue for implementing the Strategy, though international and private participation will remain key to building domestic capacity. A medium-term expenditure framework, and broader fiscal planning reforms, are essential to accurately manage public resource and sustainably fund multi-year investment programmes under the Strategy. Alongside this, Guyana must continue to improve its capacity to collect tax revenue and consider developing environmental finance tools.

While aggregate official development assistance flows are expected to fall, the Government can play a critical role in facilitating access to both development and climate finance. The major limiting factor for the future of ODA financing is Guyana's reclassification as an upper middle-income country. The most promising public sources of funding are the Inter-American Development Bank, the Caribbean Development Bank, the Guyana REDD+ Investment Fund and the Green Climate Fund. These sources of finance will remain critical in helping improve capacity to build feasible project pipelines with credible development and environmental impact. The Ministry of Finance (or another institution) could support coordination of application efforts across the Government and increase national ownership by pursuing accreditation to the GCF and other funds.

The scale of private finance available far outweighs other sources but is the hardest to unlock; the Government must work to improve the investment environment and consider the case for a development or green investment bank (GIB) to catalyse private sector investment in the Green State Development Strategy: Vision 2040. Guyana's performance against Ease of Doing Business indicators is key to attracting FDI; the Strategy itself makes several recommendations to address this. Guyana must capitalise on initiatives like SDG Impact and the emerging support network for financing SDG implementation to better access the large amounts of SDG-aligned private finance available globally. In the longer term, Guyana should look to establish a public financial institution with the capacity to catalyse private investment in GSDS activities through GIB operations and support the development of the domestic financial sector, including potential bond issuance.

As highlighted above, different public institutions have different roles to play in securing finance for the implementation of the Green State Development Strategy: Vision 2040. Implementing Ministries must take responsibility for identifying and pursuing public funding opportunities aligned with their recommendations. The Ministry of Finance must at a minimum work to improve tax revenue administration and public financial management. Finally, there is an opportunity for a public institution to play a leading role in coordinating public funding access efforts and developing private sector investment policy. The Ministry of Finance and Ministry of the Presidency must work together to assess whether this is best housed within an existing public agency or a new institution such as a national development or green investment bank.

5.2 Implementation

5.2.1 Introduction

The *Green State Development Strategy: Vision 2040* presents an ambitious development agenda that will require adjustments in attitude and action across all levels of Guyanese society, in order to fully implement the development outcomes and provide benefits to all. Business-as-usual approaches must be replaced by new and better ways of thinking and doing routine tasks, project actions and investment decisions, and in more coordinated and cost-effective ways, to arrive at the outcomes. This means being willing to move past 'silo-ed' working practices towards deeper and more meaningful collaboration across and within sectors. It means working via inter-ministerial, multi-stakeholder task force teams or public-private partnership mechanisms, with a shared purpose and common understanding of expected outcomes.

Given the number of national strategies that were not fully achieved, implementation of the *Green State Development Strategy: Vision 2040* is essential for the country's future development and to avoid stagnation and continued frustration on the part of the general public. Successful implementation requires a clear understanding of the eight development objectives, and how these devolve to sectors, agencies and regions. It requires clear action on the part of public sector and business leadership, the marshalling of resources (human, financial, equipment), skilled and capable personnel, all applied to and working through processes that yield the anticipated results. Implementation also requires systematic tracking of results to ensure that the budgeted expenditures and investments made are providing the expected returns.

This section explains the implementation process developed for the Strategy based on theories of change that inform the sequencing of actions and a monitoring and evaluation (M&E) framework with indicators and targets that define the expected accomplishments and provide a system for tracking progress. Taken together, these elements elaborate the Strategy's logical framework.

It is, however, timely to reiterate, the Strategy's *Vision 2040* and ultimate 20-year goal:

> *"An inclusive and prosperous Guyana that provides a good quality of life for all its citizens based on sound education and social protection, low carbon and resilient development, providing new economic opportunities, justice and political empowerment".*

Achieving the vision requires agencies to align or realign sector and business plans, to agree on goals and assign measurable targets and indicators to planned actions that can demonstrate progress.

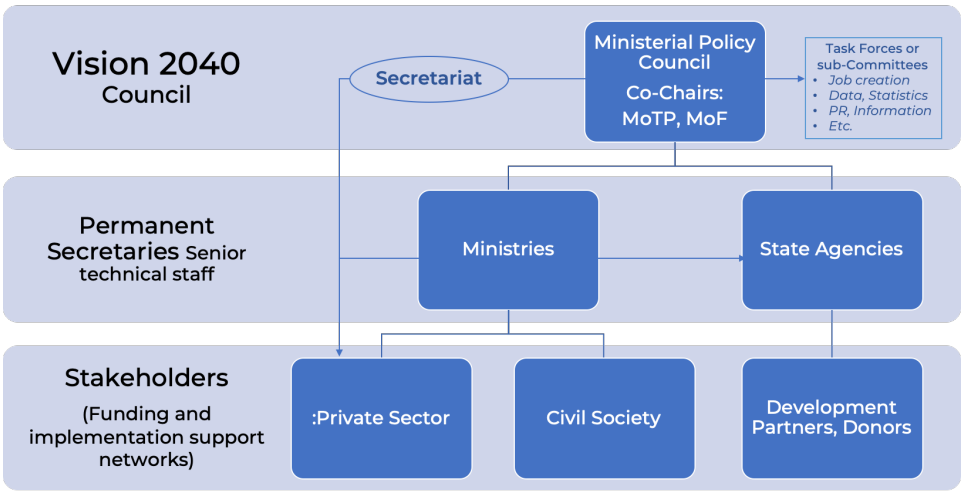
5.2.2 Vision 2040 Monitoring and Support Structure

All ministries/sectors must align their strategic plans to meet the objectives of the *Green State Development Strategy: Vision 2040*. The Strategy evolved from an intense, nationwide multi-stakeholder consultation process begun in 2017 that first identified strategic priorities and themes, then formulated the policy recommendations into development objectives. As described in the chapters above, the suite of policies has also reprised provisions of several national development strategies that are yet to be implemented, or continued those, such as of the Low Carbon Development Strategy, with its ongoing work programme coordinated by its dedicated secretariat, allocated resources, monitoring and verification framework. The focus of all sectors must now shift to implementation without delay. With the policy recommendations in place, resources are now best allocated to formulating five-to-ten year action or business plans, realigning or updating existing plans, with associated targets and indicators that are consistent with the *Vision 2040* monitoring and verification framework.

The implementation of Vision 2040 requires a long term monitoring and support structure. This could involve an inter-ministerial policy council with co-chairs appointed by the President or Cabinet and represented by two senior ministers that represent the powers of the Presidency and Finance at the highest levels. The council and its members will be tasked to oversee and ensure results and is supported by a secretariat (see Figure 9), comprising dedicated and competent technical staff with the mandate to monitor implementation of the Strategy over its lifetime. The operations of the secretariat would be governed by a clear mandate established by the President or Cabinet. The secretariat would be tasked to collaborate with three major stakeholder groups: government ministries and agencies, the private sector and development partners. It would provide advice and support to these groups, where needed, review sector reports and submit periodic national reports to the Vision 2040 Council chairs on the progress of implementation. The reporting process will also be integrated with national reporting obligations under the 2030 Sustainable Development Agenda, the Paris Agreement and other multi-lateral agreements and conventions, for which Guyana is a signatory.

Task force teams or sub-committees can be appointed for more specialised support. The work of the secretariat could be reinforced through technical task force teams or sub-committees appointed by the Cabinet to research and study critical topics such as job creation that would ensure successful labour market reforms; data, statistics and information, which are essential for accurate monitoring and reporting and which is a current weakness of the public sector; sharing information through campaigns that promote the Government's development agenda.

Figure 9. Proposed hierarchical structure for the Monitoring and Evaluation System of the *Green State Development Strategy: Vision 2040*



Data collection, statistics and knowledge sharing is everyone's task. Data assembly, collation and analysis are pervasive weaknesses across sectors and present barriers to national reporting and policy implementation. This may only be remedied by making data collection and analysis part of every employee's job in the public sector, supported by private sector and civil society. Progress can be measured vertically and horizontally but needs 'whole-of-government' approaches and participation at the lowest levels of the organisational hierarchy. This is a shared responsibility that must be enshrined in all contracts and job descriptions, to lay the foundation for effective monitoring and reporting.

The first five years of implementation must ensure execution of the medium term expenditure framework, conduct of feasibility studies, strengthening of development and investment guidelines and tax incentive schemes. The implementing schedule is included at Appendix I hereto. The first five years of implementation is expected to lay the foundation for success through succeeding decades. The Ministry of Finance would lead the way in instituting a medium term expenditure framework that will drive change across all sectors for planning and budgeting of capital and recurrent expenditures. Sector strategies should be duly aligned with Strategy outcomes and SDG goals and targets. All feasibility studies for investing in civil works (roads, bridges, ports, airports, energy generation) should be developed and executed for timely implementation. Procurement guidelines must be strengthened, and institutional processes tightened to ensure equity, fairness, transparency and value for money. A review of tax incentives schemes would also be necessary to ensure that the right drivers are in place to foster true economic diversification and transformation to a 'green agenda'.

The first five years of Strategy implementation would also ensure that the "Vision 2040" M&E Council and its secretariat are appointed, well-resourced and functional and that the jobs, data/information and/or communications task forces/sub-committees are commensurately staffed and serving their important advisory roles. Across all sectors, investment must be prioritised for strengthening regulatory and business enabling actions in line with above policies. It is also important to review and/or upgrade, where relevant, the skills of key agencies

such as the Environmental Protection Agency that is responsible for safeguarding environmental protections and monitor projects with dispatch.

5.2.3 Monitoring, Verifying & Evaluation Reporting Framework

5.2.3.1 Key Outcomes

The principles and development objectives of the *Green State Development Strategy: Vision 2040* allow the country to meet its Constitutional responsibility and provide inclusive development opportunities for the people of Guyana. Section 14 of Guyana's Constitution[117] establishes the goal of economic development as "…the objective of creating, promoting and encouraging an economic system capable of achieving and maintaining sustainable competitive advantage in the context of a global competitive environment, by fostering entrepreneurship, individual and group initiative and creativity, and strategic alliances with domestic and global business partners in the private sector." Guyanese also enjoy protections by the Constitution in relation to, *inter alia,* the right to work, equality between men and women and freedom from discrimination based on gender, ethnicity or creed. Reporting on *Vision 2040* results and outcomes will also allow the country to honour its commitments to the international development community on the progress of implementation of the 2030 Sustainable Development Goals (SDGs), the first of which, is to "End poverty in all its forms everywhere".

In that context, the *Green State Development Strategy: Vision 2040* has ascribed the following outcomes to its eight development objectives:

- **Sound Fiscal and Monetary Policy.** Oil wealth and revenues are transparently managed into productive public investments that ensure stable prices in the economy and inspire confidence among citizens, businesses and investors.
- **Sustainable management of natural resources**. The population is aware of the value of the country's natural resources and supports its prudent management and conservation, to safeguard food security, traditional livelihoods and knowledge.
- **Green and Inclusive Economic diversification**. A green, inclusive and diversified economy that allows access to new markets and creates decent jobs for all its citizens.
- **Transition to Renewable Energy**. Clean sources of power provided at lower cost to households and businesses, stimulate more energy efficient public and commercial buildings and increased use of high fuel-efficiency vehicles.
- **Resilient Infrastructure, Green Towns and Urban Spaces**. Good quality and resilient infrastructure networks and services effectively serve the needs of coastal and hinterland regions, urban areas and communities, and foster higher urban standards, clean and safer communities.
- **Trade, Investment and International Cooperation**. A strong, diversified and competitive export industry characterised by excellent relations with neighbours and other countries and provides good opportunities for trade and investment.

[117] Part 1, Chapter 2; "Constitution of the Cooperative Republic of Guyana", Laws of Guyana, Cap. 1:01.

- **Healthy, Educated and Socially Cohesive Population**. A population with universal access to good standards of healthcare, social services and education, shares and takes pride in its identity, creativity, diversity, culture and heritage.
- **Good Governance, Transparency and Knowledge Management**. The country's institutions are transparent in their decision-making, enforce the rule of law and effectively serve the citizenry in its public administration services.

5.2.3.2 Vision 2040 Theory of Change

The *Green State Development Strategy: Vision 2040* was built upon core 'principles' of integrated human values that must permeate all implementation activities. These values are enshrined in Guyana's Constitution and may be summarised as:

- *Social Cohesion:* A social construct that promotes dialogue, inclusion, fights against discriminatory practices and creates a sense of belonging and trust, while providing citizens opportunities for upward social mobility. It also refers to the accepted rules and behaviors that individuals, communities or society as a whole can adopt because of normative expectations, social rewards or sanctions. These norms are particularly influential on vulnerable individuals and communities.
- *Sustainable livelihoods:* Ensuring that individuals and communities can survive over time and through complex interdependencies, with an adequate standard of living, and the capacity to overcome external stress and shocks.
- *Quality of Life*: Associated with overall well-being, it is multi-faceted and relates to the ways that make an individual, group or community satisfied and content with their lives.
- *Democratic Governance:* Tied to the concept of democracy and the rule of law, including equality before the law, transparency and access to information, participation in public affairs, political plurality and freedom of expression, among other factors.
- *Effective Public Administration:* Refers to the aggregate system of policies, rules, practices, structures and relationships used at every level of government for the execution of mandates. Accessible, affordable, effective and transparent delivery of public services are key determinants for the achievement of any development goals.

These principles must be enshrined in methods of execution and protocols, in terms of stakeholder rules of engagement, operating procedures and/or codes of behaviour and ethics, and at all institutional levels: public, private and civil society.

A theory of change describes the sequence of changes expected to occur and changes come from achievement of the desired results and outcomes. The theory of change evolved from workshop exercises and analyses[118] using the problem tree/objective tree approach that identified intermediate results and outcomes (see Annex F), as discussed below. The results

[118] Two workshops were convened for GSDS stakeholders in 2018 by UN Environment/GSDS Coordination Office and UNDP, in collaboration with the Government of Guyana. The first of March 15th-16th 2018 focused on integrating the SDGs into the Green State Development Strategy priority themes. This was followed by a second workshop on Theory of Change on May 22-24 2018. The challenge of arriving at a single theory of change for the Strategy became evident over the 3-day exercise. The workshop therefore developed integrated theories of change across key development themes, which are summarised in this section. The full Theory of Change report is provided in Annex F.

chain that explains the theory of change is presented in Figure 10 below. The vertical, upward facing arrows (bottom of page to the top) indicate the direction or progress of change. Development Objective H: "Good Governance, Transparency and Knowledge Management" cuts across all sectors. Figure 10 demonstrates the interconnectedness of the Strategy's development objectives, which therefore means that the Strategy needs integrated or cross-sectoral, partnership approaches to implementation.

The importance of infrastructure development to economic transformation (evidenced by the pervasive flow of arrows cutting across development objectives) is the surest indicator of its driving force in the economy, as it emanates from the lowest activity levels of the results chain. Infrastructure relates to both roads/ports/airports and renewable energy/power generation systems. These are essential enablers of economic diversification and growth and the levels of complexity and management requirements should not be underestimated when packaging technical services and project activities for investment and procurement.

A second key driver of economic development is an effective labour force, determined by a healthy, educated and socially secure population. In the results chain these determinants cut across all outcomes at the highest levels as indicated in Figure 10. The economy will need a capable and skilled labour force to drive the transformation, which in turn influences the development of better paying jobs, access to affordable healthcare and services and ultimately a healthy, well-educated population.

Achieving a green, inclusive and diversified economy allows access to new markets and creates decent jobs for all its citizens (Development Objectives C & F). Guyana's economy and trade characteristics are heavily associated with the predominance of the extractive industry sector. The low level of economic 'complexity' – with an unbalanced predominance of low-skilled labor over high-skilled and technologically intensive activities – create conditions for increasing inequality and inefficiency (see Figure 10).

The aim is diversification of the economy for the overall purpose of improving human well-being and social equity, by adopting low carbon and resource efficient processes. The transition will involve a heavier reliance on sectors with technology intensive activities, increased resource productivity and environmental services, as well as the implementation of social and environmental considerations towards a more inclusive and equitable economy.

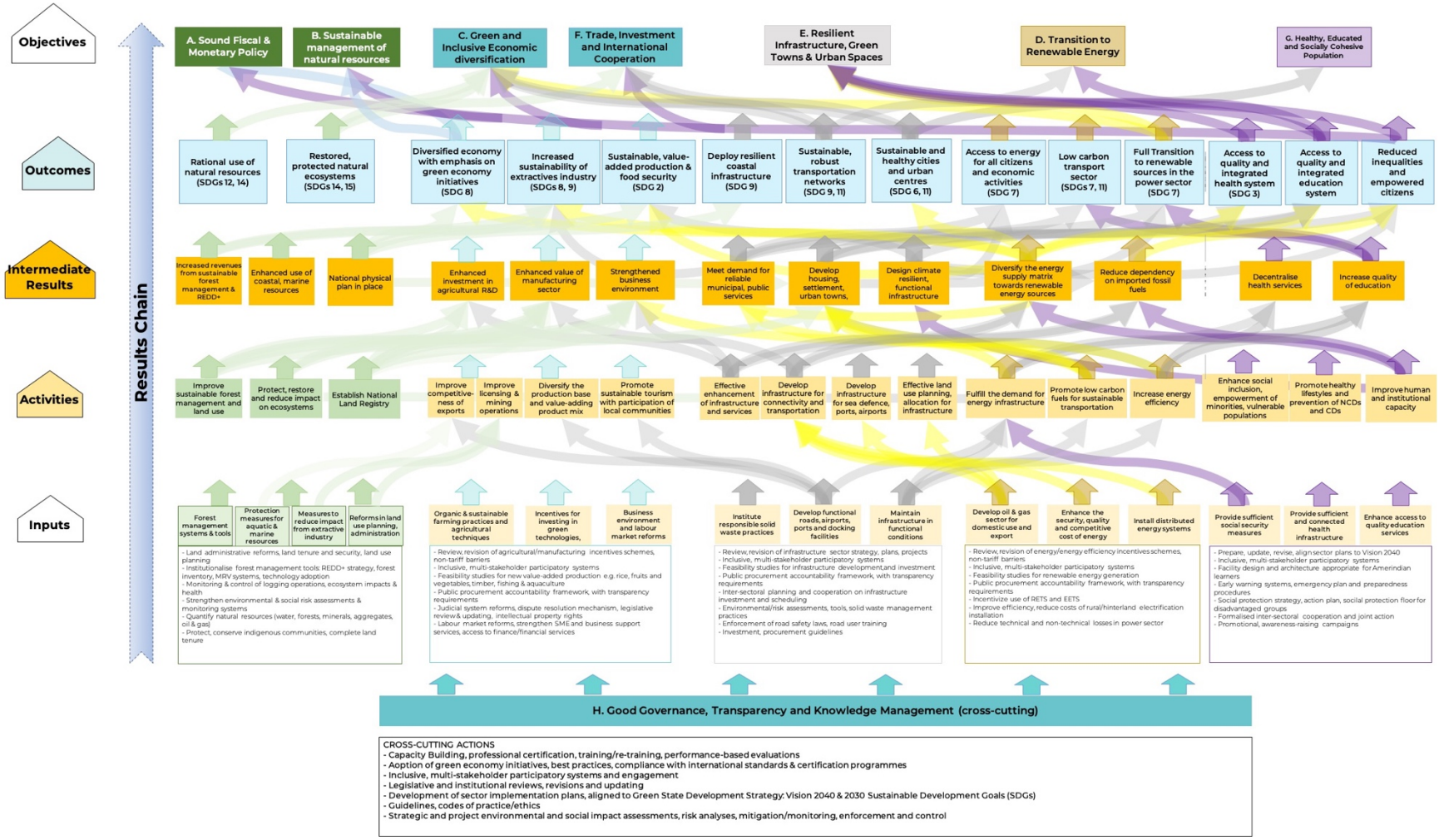
- *Diversification of the economy with emphasis on "green economy" initiatives:* A diversified economy will be coupled with strong emphasis on deployment of "green" initiatives, and businesses that are able to decouple economic growth from environmental impacts generated by productive processes. Some of the outputs associated with this outcome involve: improving the competitiveness of existing and potential exports, developing the manufacturing sector; promoting sustainable and participatory tourism as a significant growth sector of the economy; establishing incentives for investing in green technologies; and increasing the relevance of forestry-related activities. These results are in turn significantly affected by others, such as the development of infrastructure for improved connectivity and transportation, which would help to support exporter access to new markets, improve adherence to international standards, and as a result, increase competitiveness of exports. Other results are heavily related to building institutional capacity, for example, in the forestry sector. This could lead to the creation of more effective tools for forest management

and land use planning, which in turn would enhance the sustainable management of forests, increase conservation opportunities – such as REDD+ – ultimately increasing the revenue contribution to the economy.

- *Increased sustainability of extractive industries:* Because of its relevance to the country's economy, strengthening and promoting the sustainability and governance of extractive industries – gold, bauxite, minerals, oil and forestry – will be indispensable to achieving this objective. The outcome is linked to an increase in the sustainability of the extractive industries sector, which can be achieved through provision of incentives to adopt cleaner technology, increased enforcement of existing regulations to avoid pollution and land degradation, and effective and transparent mining licensing which can reduce informality and enhance access to resources to improve sustainable operations. In addition, this outcome also involves an element of higher levels of transparency for local stakeholders in relation to the decision-making process in extractive activities and their participation in the operations. This outcome is also closely associated with the forestry sector, as in many cases activities are located in the same areas. As a result, the importance of forestry regulation and promotion will provide added benefits for transparent operations and increase the sustainability of these industries. For example, effective land use planning could also more effectively zone forestry and extractive activities, enhance their contribution to Guyana's economy and avoid conflicts in land use, degradation or pollution.
- *Increased productivity of sustainable agriculture:* This is a key economic sector of Guyana's economy with associated benefits for employment and food security. Strengthening both the productivity and sustainability practices of this sector could have important effects towards achieving a green and diverse economy. The most relevant results for this outcome involve the promotion of sustainable farming practices, such as the use of resource efficient technologies according to region and type of crop. Enhancing R&D in agriculture through access to increased financial resources, as well as improved capacity to translate research into results; and promote production diversification, which would be achieved through better economies of scale for small farmers, increased access to finance through clear and secure land tenure, and the development of infrastructure to increase connectivity and transportation capacity.

These results and outcomes have significant interlinkages with other Development Objectives, such as improved human capacity built through vocational, technical and tertiary education (Development Objective G). Enhancing human capacity will translate to institutional capacity improvement with efficiency benefits in the public sector. The private sector also stands to benefit by taking advantage of more suitable conditions to actively invest in green initiatives.

Figure 10. Theory of Change – Green State Development Strategy: Vision 2040



Achieving sustainable and soundly-governed management of natural resources, for effective conservation and restoration and use by future generations. Guyana has vast, relatively intact, diverse ecosystems and habitats including montane rainforests, savannahs, aquatic environments, wetlands, freshwater and marine resources, among others. While these play a key role in sustaining livelihoods, many are also threatened by extractive industry exploitation and climate risks. However, there are significant opportunities for leveraging the use of these resources e.g. in enhancing critical ecosystem services and for elevating the relevance of conservation and protection to the generation of international benefits from mechanisms such as REDD+ and EU-FLEGT (see section 2.3.5).

The theory of change anticipates a sustainable and inclusive system that can both strengthen the conservation and restoration of natural environments, and the sustainable use of Guyana's natural capital as the basis for its economic growth and diversification (Development Objectives A, B & H). It also incorporates having a participatory and strong governance component that can empower local stakeholders, particularly indigenous people, as a way to achieve broader engagement in the process and equitable distribution of the outcomes.

- *Protect and restore natural ecosystems:* Due to potentially increasing pressures of industrialization from a diversified economy and from the extractive industries, the reinforcement of initiatives associated with protection and restoration of the natural environment will be a necessary balancing mechanism to counter the rapid economic expansion and associated environmental impacts. The most relevant areas of action include the protection and restoration of coastal and marine ecosystems – through effective management and protection – development of resilient and functional coastal infrastructure that can help to sustain these services; effective management of fisheries and other marine resources. Similarly, the protection of land-based natural resources will be tightly coupled with effective land use planning, the improvement of forest management, which will have positive impacts on related economic and conservation efforts and the protection of fresh water resources.
- *More sustainable use of Natural Resources:* Taking action to ensure and strengthen the sustainability (with increased economic benefits, reduction of environmental pressures, and reduction of inequalities) of the nature-based economy will be of great relevance to achieving this outcome. It is closely linked to the outcome for diversifying the economy. In that sense, the focus is centered around increasing the economic contribution of natural resource-based sectors such as forestry and mining through more effective land use planning, better management practices and enhanced REDD+ opportunities as a relevant source of revenue from the sector. Similarly, increasing the contribution of fisheries by improving its management spurs manufacturing capacity, along with better transportation infrastructure function and connectivity, which is an important outcome for achieving this objective.

As in previous outcomes, achieving the above assumes an important improvement to the institutional capacities of the public sector, to update relevant regulations and to effectively implement, coordinate and monitor initiatives. The enhancement of institutional capacity is rooted in the development of Guyana's human capital, an element heavily linked to the quality and scope of education.

Achieving the transition of the energy sector and provision of renewable, affordable and reliable energy for economic growth and better standards of living. The provision of renewable and cleaner energy heavily considers increasing access and affordability particularly in underserved areas of the country and is an enabler of increased economic growth. Despite its diverse energy source potential – including hydropower, wind, biomass, solar and natural gas – Guyana's primary energy source is still imported fossil fuels (see section 3.4) with the corresponding impact on environmental quality and greenhouse gas emissions. In addition, energy access is heavily concentrated in urban areas, with about 12% of the population without access to energy (hinterland and rural areas), even though the energy potential of the country is well above current demand. The theory of change considers issues of the sector's structure and leverages natural and cleaner energy sources that are abundantly available.

- *Achieve a low carbon, energy efficient sector:* Increasing sustainability in and reducing greenhouse gas emissions of the power sector is an outcome of great relevance and significant for the achievement of a truly green economy. The use of renewable energy sources for power is an enabling factor in the economic transformation. The transition requires diversification of the energy supply mix, particularly away from dirty, imported fossil fuels. In addition, increasing energy efficiency in the country – through adoption of high-efficiency technology and by raising awareness of its benefits – are important results for maintaining a low carbon footprint.
- *Ensure access and affordability to energy for households and business activities:* While maintaining a low carbon footprint is key to securing the transition, the aspects of affordability and access to energy also need to be addressed. This is particularly relevant for citizens in remote and underserved areas requiring more cost-effective distributed systems. Some of the most relevant results for achieving the outcome involve: the provision of sufficient energy infrastructure, leading to a reduction of losses in the energy system and increased security and quality in the provision of energy at competitive cost. The Installation of distributed energy systems in remote, hinterland regions need to be properly incentivised and maintained for quality service to consumers. Using natural gas as a transition fuel to provide a secure and domestic energy source is an investment in a cleaner fuel, while increasingly transitioning away from the more polluting fossil fuels.
- *Achieving a low carbon transportation sector:* While the previous outcomes were more related the provision of clean and affordable electricity for all citizens, this outcome is directly related to the fuels used in the transportation sector, and important efforts to reduce present and future sources of GHG emissions in the fast-growing vehicular fleets. The most relevant results associated with this outcome involve identification and use of alternative fuels in the transportation sector and ensuring market reforms to stimulate the sector's transition.

These outcomes are strongly linked to education outcomes and building human and institutional capacity in this sector. In addition, the provision of functional infrastructure is also a key aspect to achieve these objectives, since a properly planned infrastructure network will reduce the costs of installing energy infrastructure in remote areas and transmission lines in general.

Achieving resilient and sustainable infrastructure that can sustain increased economic activity, improved livelihoods and better quality of life. As evidenced by its link to the previous objectives, infrastructure is a key factor for achieving economic development, diversification and transformation. At the same time, it can also become an increasingly important cause of environmental degradation, conflict and risk, which speaks to the relevance of including a rigorous assessment the national infrastructure deployment plan. In addition, the growing risks from climate impact and the spread of urbanization have increased demand for more resilient, high-quality infrastructure in order to attract investment, sustain business growth and enhance quality of life (Development Objective E). Infrastructure development will also enable trade through better transport connectivity and growth, as well as public health and education, safety and security of communities, towns and the population, writ large.

- *Deploy resilient coastal infrastructure:* Guyana's climate risk exposure already has an impact on urban areas and infrastructure. As a result, the design and deployment of resilient coastal infrastructure, as well as ensuring active involvement of stakeholders, is imperative, particularly at critical locations. Consideration should be given to maximising mangrove ecosystem integrity as a cost-effective solution against climate impacts along the coast. Some of the most relevant results for this outcome are associated with well-planned development of ports and docking facilities which incorporate planning standards to maximize their function, but also to ensure integration of elements of adaptation and resilience to increase their own sustainability. In fact, this outcome is heavily associated with the sustainable management of natural resources (Development Objective B), as the development of sustainable coastal infrastructure will serve as a catalyst for other interventions that can enhance coastal protection and restoration as part of large infrastructure development.
- *Establish a sustainable and robust transportation network:* Physical connectivity of national and regional networks of roads enable economic growth. Simultaneously, road infrastructure deployment will likely cause environmental damage and conflict – particularly outside urban areas in the absence of proper land use planning. Achieving this outcome includes monitoring and maintenance of the existing infrastructure. As was mentioned before, this outcome is heavily related to the previous development objectives, benefits for access to new markets, enhance regional economic activities and lower cost in the provision of other public services.
- *Develop sustainable, secure and healthy urban centers:* The development of urban infrastructure is critical for economic development as they shape the experience, comfort and well-being of its citizens. This ranges from the provision of essential public services such as water and sanitation, to the parks and recreational centers. In this sense, some of the most relevant results relate to: enhancing the provision of reliable municipal centers in urban areas; meeting the demand for public services; and developing building codes and regulation and properly enforcing them. Most of the mentioned results rely heavily on sufficient levels of institutional and human capacity, which can lead to increased levels of institutional coordination and more effective development of norms and regulations in the public sector, as well as properly trained

professionals involved in the actual design, procurement, construction and delivery of the required infrastructure.

Achieving an appropriate standard of living and well-being through inclusive education, health, security and social protection and social empowerment of women, youth, indigenous communities and vulnerable groups. Public services such as health, education and social protection are of paramount importance for personal development of every citizen of Guyana, as well as the future labour force and labour market for economic growth. These are of great relevance for vulnerable populations such as women, youth, indigenous communities and other disadvantaged groups, that are exposed to higher levels of risk and barriers to markets, education and health services. The outcome addresses these challenges by raising standards of living and well-being through access to quality public services – education, health, social protection, safety and security – during their periods of need and vulnerability. In addition, empowerment and social integration of minorities and the vulnerable populations contribute positive outcomes in social cohesion and well-being across ethnic groups in Guyana.

- *Provide access to quality and integrated health system services*: The provision of integrated health systems providing primary healthcare, preventing non-communicable/communicable diseases and sound mental health – is a key aspect of this outcome for citizen health and wellbeing, particularly the most vulnerable. The most relevant results include access to adequate, connected and quality healthcare facilities, services and capable workers. In addition, the decentralization of health services will help reduce disparities between coastal and hinterland facilities. Health campaigns promoting and instructing on healthy lifestyles and avoidance of risky behaviours are essential for preventing diseases. These can be based on proactive, educational engagement with citizens and vulnerable groups, rapid response procedures in the case of health emergencies and disasters.
- *Reduce inequalities and empower citizens:* Empowering citizens to make healthy, safe choices but also ensuring that they will be adequately cared for in situations of critical need or vulnerability, are key results of strengthened social protection floor and lifecycle monitoring systems. An important result is the provision of sufficient social security and on a timely basis with better and more effective payment systems, trained personnel, along with measures to reduce barriers to access to services. In addition, enhancing social dialogue among groups to increase the representation and participation of the most vulnerable groups in decision-making processes associated with their livelihoods and communities would significantly reduce potential conflicts with added benefits for more inclusive communities and society. Finally, the development of educational programs tailored towards vulnerable individuals – such as people with disabilities will ensure that no one is left behind.
- *Provide quality and integrated education for all citizens:* Education at all levels is one of the most important drivers of human development. It is essential for reducing inequality, as an educated population is more inclusive, mobile and can enjoy higher living standards and well-being. As mentioned before, this particular outcome is the one with most links to the high-level outcomes of the development objectives as it includes aspects of labour force skills and expertise. The most relevant results include

increasing the quality of education levels through significantly improved performance at primary and secondary levels, but also from lifelong learning objectives, facilitated by improvements in teacher qualification, education facilities, student and school performance, across all regions.

Building human capacity is a significant factor that links to all development objectives, as professional and technical experts will be needed in different sectors, across levels of government, as well as in the private sector.

Table 4: Implementation Schedule for the Green State Development Strategy: Vision 2040

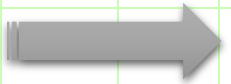
Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
1	**MANAGE NATURAL RESOURCE WEALTH**							
A	**SOUND FISCAL AND MONETARY POLICY**							
A1	***Fiscal Policy***							
A1.1	Fully draft the Natural Resource Fund Act (NRFA) and establish the institutional arrangements required for the full operation of the Fund	Oil wealth is transparently managed to secure a stable future source of public revenue	Ministry of Finance (MoF)		→			
A1.2	Instigate the selection process for private fund managers operating within the NRF		MoF/ Bank of Guyana (BoG)		→			
A1.3	Prepare national budget operations for the integration of an extensive and long term social investment program, including transitioning to a Medium-Term Expenditure Framework (MTEF)	Oil wealth is channeled into productive public investments to deliver sustainable development benefits for the whole of society and into the future	MoF		→			
A1.4	Strengthen the ability to design, procure, manage and evaluate large investment projects, and establish a delivery unit for the design and management of critical projects				→	→	→	
A1.5	Implement the Public-Private Partnership (PPP) legislative framework with institutional designs and guidelines for the establishment of a PPP unit		MoF			→	→	→
A2	***Monetary Policy***							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
A2.1	Clearly communicate the Bank of Guyana's policy stance to set clear precedence of expected action under sustained inflationary and exchange rate pressure	Citizens and businesses have confidence that prices will remain stable in the long term, supporting the business environment	MoF/BpG					
A2.2	Review the Bank of Guyana's analytical capacity to generate a credible evidence base for the Macroeconomic Committee established under the Natural Resource Fund Act							
B	**SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES**							
B1	***Land Resources***	The country preserves its natural capital through institutionalised and prudent management of natural resources (land, forests, minerals and water)						
B1.1	Establish a government-wide geographic information system (GIS) database and network that is accessible to the natural resources agencies		Ministry of the Presidency (MoTP)/ Guyana Lands & Surveys Commission (GLSC)					
B1.2	Establish a national physical development plan to guide national land use	Guyana's population has high achieved levels of awareness of the value of the country's natural heritage.						
B1.3	Maximise zoning of the most suitable lands along the coastal plain for commercial agriculture							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
B1.4	Preserve the traditional agricultural practices of indigenous communities	Guyana maintains and safeguards its food security, traditional livelihoods and knowledge through effective conservation of biodiversity, ecosystem services and heritage.	Ministry of Agriculture (MOA) Ministry of Indigenous Peoples Affairs (MOIPA)					
B2	***Water Resources***							
B2.1	Amend the Water and Sewerage Act 2002 to improve integrated water resources governance and management		Ministry of Communities (MoC)/Guyana Water Inc. (GWI)					
B2.2	Integrated water resources management is prioritised with science-based research, and analysis							
B3	***Forest Resources***							
B3.1	Ensure and strengthen sustainable forest management for low emissions development		Ministry of Natural Resources (MNR)/ Guyana Forestry Commission (GFC)					
B3.2	Leverage GFC's expertise to guide improved forest monitoring and management within other land ownership categories							
B3.3	Strengthen the suite of forest management tools, measures and plans and involve key stakeholders in joint forest resource management, monitoring and research							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
B3.4	Strengthen Community Reporting, Monitoring and Verification (CMRV) Programmes of indigenous communities management		Ministry of Indigenous Peoples Affairs (MOIPA)/GFC					
B3.5	Implement provisions under the Amerindian Act 2006 that mandate Amerindian village councils to manage forest resources							
B3.6	Advance certified technical and vocational training for effective forest management and monitoring		MNR/GFC					
B3.7	When forest rehabilitation is necessary because of degradation, then restoring to as near the original value of the forest area is paramount							
B3.8	Continue the monitoring, control and reporting on wildlife trading (legal and illegal)		MoTP/MNR					
B4	***Biodiversity and Ecosystem Services***							
B4.1	Prioritise the allocation and establishment of a total of 2 million hectares of land for legal protection.		Department of Environment (DoE)/ Protected Areas Commission (PAC)					
B4.2	Commence the process of accession under the RAMSAR Convention for the protection of its wetlands of international importance							

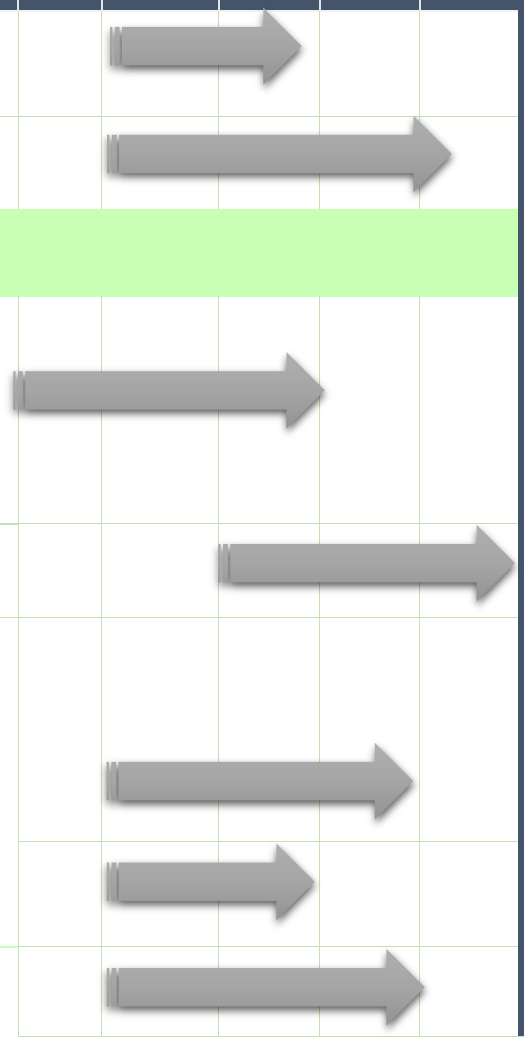
Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
B5	***Precious Metals, Mineral and Aggregate Resources***							
B5.1	Improve geospatial mineral resource mapping and quantification		MoTP/ GGMC		→	→	→	→
B5.2	Research and study options for using financial securities to rehabilitate mining sites				→			
B5.3	Review and update mining laws and improve capacity for enforcement and monitoring				→			
B6	***Traditional Knowledge and Practices***							
B6.1	Indigenous communities' traditional systems have endured over centuries and their conservation is a priority for maintaining cultures, livelihoods and communities, community health and wellbeing		MOIPA/PAC		→	→	→	→
B6.2	Traditional indigenous knowledge is valid and contains valued information on preservation and use of Guyana's key natural resources, particularly forests				→	→	→	→
B6.3	B6.3 Traditional knowledge and practices should be considered in the design and delivery of public services and programmes		MoTP/ Department of Social Cohesion (DoSC)/ Department of Culture (DoC)		→	→	→	→
B6.4	B6.4 Preserve the traditions of other Guyanese ethnic cultures				→	→	→	→

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
2	**SUPPORT ECONOMIC RESILIENCE**							
C	**GREEN AND INCLUSIVE ECONOMIC DIVERSIFICATION**							
C1	***Resource extraction for sustainable development***							
C1.1	*Mining*	The mining sector adopts greener and safer operating practices, minimising waste and negative environmental and social impacts and is rehabilitating degraded sites in a timely manner to other productive or recreational uses	MoTP/GGMC					
C1.1.1	Make institutional adjustments to tackle landlordism among small- and medium-scale gold mining and to drive sustainability							
C1.1.2	Undertake measures to encourage operations to focus in areas with proven mineral reserves							
C1.1.3	Incentivise adoption of more efficient, safer and environmentally friendly techniques	High levels of productivity and sustainability achieved through the adoption of advanced technology and management best practices						
C1.1.4	Merge the small-scale framework into the medium-scale framework	Successfully competes in international markets, in part due to a reliable and efficient network of infrastructure						

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
				2019 | 2020 – 2024 | 2025 – 2029 | 2030 – 2034 | 2035 – 2040
C1.1.5	Encourage the use of advanced technology and employ more sophisticated monitoring techniques to reduce the costs of enforcement			
C1.1.6	Make investments in critical infrastructure to support the development of both gold and bauxite			
C1.2	***Oil and Gas***	Utilise natural gas production associated with oil extraction in the most beneficial way for the domestic economy, as identified by clear evidence-based assessments	MoTP/ Department of Energy (DoEn)	
C1.2.1	Study and assess the business case to refine its share of oil production, maximizing local industrial development			
C1.2.2	Build an effective strategy for managing local content			
C1.2.3	Compare and assess use of natural gas as a fuel for electricity generation and wider energy consumption	Maximise the economic benefit of oil extraction to the domestic economy while effectively managing the environmental risks		
C1.2.4	Strengthen the governance of oil and gas fiscal revenues through the Natural Resource Fund Act	Transparently and consistently deliver the Government of Guyana's fair share of oil revenues.	MoF/DoEn	
C1.2.5	Monitor and manage risks of an oil spill			
C1.3	***Timber Production and Processing***			
C1.3.1	Incentivize increased productivity and sustainable operations among existing concessions, instead of assigning further areas for concessions	Benefits from improved access to domestic and international markets, including those for certified sustainable products	MNR/GFC	

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C1.3.2	Improve recovery rates of extracted logs							
C1.3.3	Increase availability and standards of training to expand and professionalise the supply of skilled labour in the industry							
C1.3.4	Facilitate and support action by domestic firms to secure and maintain access to international markets	Successfully competes in international markets, in part due to a reliable and efficient network of infrastructure						
C1.3.5	Increase the visibility of Guyanese tree species in domestic and international markets and encourage domestic producers to use new species							
C1.3.6	Provide technical assistance and investment facilitation services to encourage expansion into higher value-added furniture products							
C1.3.7	Strengthen port infrastructure to decrease shipping costs		MOPI/MRN					
C1.4	***Fishing and Aquaculture***		MOA					
C1.4.1	Support both artisanal and commercial producers to shift to more sustainable practices	Improved access to international markets, including those for certified sustainable products	Fisheries Department					
C1.4.2	Carefully monitor and manage the increased use of under-exploited deep-water resources	Attract significant international investment to facilitate the expansion of the aquaculture industry, in line with environmental and sustainability safeguards						

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
C1.4.3	Promote and facilitate foreign direct investment (FDI) to boost growth of the aquaculture industry	Clear, evidence-based sustainability standards and practices	MOA/MOF	
C1.4.4	Support technical improvement of small aquaculture producers	Draws from a sufficiently skilled local labour force	Fisheries Department	
C2	**Sustainable, productive and climate resilient agriculture and value-added processing**			
C2.1	***Sugar***			
C2.1.1	Assure GuySuCo supplies to the rum industry in the short-to-medium term, while maintaining cost reduction efforts	High productivity and sustainability levels through the adoption of advanced technology and management best practices, and operates in line with private sector standards	MOA/GuySuCo	
C2.1.2	In the long term, balance GuySuCo profitability and social impact			
C2.2	***Rice***	Achieve high levels of productivity and sustainability through adoption of advanced technology and management best practices	MOA/Guyana Rice Development Board (GRDB)	
C2.2.1	Extend GRDB services to include finance, shared equipment and training			
C2.2.2	Support development of more sophisticated financial products and services	Successfully compete in international markets, through a reliable and efficient network of infrastructure		
C2.2.3	Support modernisation of production and build new skills among workers			



Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C2.2.4	Provide incentives for changes in land ownership and increasing land conversion, leading to the expansion of rice cultivation							
C2.2.5	Improve the quality of cultivation dams and port infrastructure		GRDB/ National Drainage & Irrigation Authority (NDIA)					
C2.3	***Fruits and Vegetables***							
C2.3.1	Support investment for the consolidation of estates and improving productivity techniques for coconut and other priority crops	High levels of productivity and sustainability through adoption of advanced technology and management best practices	MOA/ Guyana Marketing Corporation (GMC)					
C2.3.2	Support farmers to shift to organic practices	Improved access to international markets, including those for certified organic products						
C2.3.3	Adjust taxes in line with regional agro-processing markets	Successfully competing in international markets in line with regional comparators.	MOA/MOF					
C3	**Green, inclusive and high value-adding service industries**							
C3.1	***Travel and Tourism***	Offers a portfolio of high-quality tourism packages to domestic, diaspora, executive, and nature, culture, and adventure tourism markets						

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C3.1.1	Strengthen and formalise inter-ministerial, cross-sectoral multi-stakeholder coordination		Ministry of Business (MOB)/ Department of Tourism (DOT)					
C3.1.2	Prioritise development of an attractive brand identity and design vernacular with standards for visitor welcome centres, key attractions and signage		DOT/Guyana Tourism Authority (GTA)					
C3.1.3	Target key markets and develop competitive tourism packages with high value added	Is implementing a complementary, adequately-resourced and effective marketing campaign that raises the profile of Guyanese tourism internationally						
C3.1.4	Improve the quality of infrastructure, marketing and retail services upon which tourism depends		GTA					
C3.1.5	Incentivise investment in accommodation, restaurants, attractions, and entertainment enterprises							
C3.1.6	Build a strong international reputation and quality brand for destination Guyana							
C3.1.7	Instill a culture of evidence-based reporting and sector development through robust data monitoring, collection, sharing and reporting routines							
C3.2	***Business Process Outsourcing***		MOB					
C3.2.1	In the short term, mitigate the high cost of utilities							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C3.2.2	In the longer term, provide modern facilities to BPO firms through new technology parks						→	→
C3.2.3	Align the sector's tax policy with competitors, especially payroll and corporate income tax				→	→		
C3.2.4	Assure a steady supply of qualified labour		MOB/ Department of Labour (DOL)			→	→	
C4	**Strengthening the Business Environment**							
C4.1	***Institutional Quality and Public Sector Services***	Able to deal with commercial claims and disputes in a timely and effective manner	MoTP/ Ministry of Legal Affairs (MOLA)					
	<u>Corruption and transparency</u>							
C4.1.1	Develop a government-wide procurement accountability framework to support enforcement and strengthen the Public Procurement Commission's (PPC) capacity to implement this	Allocate land leases for residential and commercial development in a transparent and efficient manner, and support the efficient functioning of a secondary markets for land and property			→	→	→	
C4.1.2	Select and mandate an independent body to develop and promote government-wide anti-corruption and transparency measures				→			
C4.1.3	<u>Dispute resolution</u> Modernise and improve the judicial system by fully digitising record keeping in courts and hiring additional magistrates and judges to relieve bottlenecks	Provide businesses with low cost and accessible means of registering intellectual property rights and assurance those rights will be protected and upheld	MOLA		→	→	→	→

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C4.1.4	Develop a monitoring and evaluation (M&E) framework for the judicial system, and assign performance targets							
C4.1.5	Establish a task force of private sector creditors and legal firms to study the key issues that underlie insolvency procedures, in particular gaps in data collection, monitoring and tracking of new businesses		MOLA					
C4.1.6	Review and assess potential methods to support the development of arbitration services, to relieve pressure on the court system							
	<u>Property rights</u>							
C4.1.7	Reform government-wide land-use planning legislation to coordinate leasing across all institutions and reduce approval times		MOLA/MoTP/ GLSC					
C4.1.8	Develop a transition plan towards a market-based allocation and pricing mechanism for land lots, with clear support mechanisms for low-income families		MoTP/GLSC					
C4.1.9	Relax the conditions on construction licensing to encourage the development of formal construction		MOF/ Guyana Revenue Authority (GRA)					
C.4.1.10	Update the legal framework for intellectual property and support its implementation with an efficient administration and enforcement effort		MOLA					

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C4.2	***Business regulation and private sector services***	Minimise the administrative burden of complying with business tax obligations and provide high quality associated support services	MOB					
	<u>Business Taxes</u>		MOB/GRA					
C4.2.1	Review the potential to consolidate tax payments from businesses, in particular corporate income tax				→			
C4.2.2	Evaluate the digitisation of import and export taxes and assess the need to refresh online documentation and provide additional guidance and support				→			
C4.2.3	Evaluate the benefits and risks of repealing import duties in situations where long-term exemptions are in place and there is little domestic production	Offer competitive and accessible private sector credit options for businesses of all sizes			→			
	<u>Access to Credit</u>							
C4.2.4	Establish a task force of private sector creditors to review appropriate due diligence procedures and required support from Guyana's Credit Bureau (GCB)		MOB		→			
C4.2.5	Establish a clear registry for property rights		MOB/GLSC		→	→		
C4.2.6	Continue to offer loans to small-to-medium enterprises (SMEs) through the Small Business Bureau (SBB) and work with private sector creditors to expand the options SMEs have for posting collateral		MOB/SBB/ GCB		→	→	→	→

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
C4.2.7	Develop a long-term strategy to replace public lending programmes with greater lending on private capital markets							
C4.2.8	Labour Market Regulation Emphasise skills training and development and at the right levels to attract investments needed for a just transition to the green economy		MoTP/DOL					
C4.2.9	Apply internationally recognized labour standards ratified by Guyana for better occupational safety and health (OSH) standards and better working conditions as new ways of work and employment emerge							
C4.2.10	Reduce the size of the informal sector in Guyana and help businesses, especially microenterprises, to transition into the formal economy							
D	**TRANSITION TO RENEWABLE ENERGY**							
D1	***Renewable and Clean Energy***							
D1.1	Develop a strategic investment plan to guide investments that support the transition to renewable energy	Transition to use of near-100% renewable and clean energy with an optimized mix developed from its natural capital	MoTP/DoEn					
D1.2	Transition to an optimal mix of renewable and clean energy in the energy sector	Shift to a higher efficiency vehicular fleet through a mix of incentive programmes and technologies e.g. fuel diversification, non-motorized transport and road sharing initiatives						

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
D1.3	Commission feasibility studies to support the transition	The transitional process is supported by adequate skills and re-skilling efforts for the labour force, in conjunction with training institutions and social partners						
D1.4	Harmonise legislation governing and regulating the energy sector to enable the transition to renewable energy	Investments in energy efficiency are prioritized across all economic sectors, buildings and industry operations.						
D2	***Renewable and Clean Energy Use in the Power Sector***							
D2.1	The immediate focus is on fortifying the national electricity grid		Ministry of Public Infrastructure (MOPI)/ Guyana Power & Light Inc. (GPL)					
D2.2	Implement other feasible measures to support the modernization of the national grid							
D2.3	Improve the financial performance of GPL							
D2.4	Conduct feasibility studies to identify the best opportunities for technical and financial support							
D2.5	Pursue distributed/off-grid generation systems, where feasible							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
D2.6	Hinterland and rural electrification should emphasize, where feasible, smaller, modular systems		MOPI/ Hinterland Electrification Company Inc. (HECI)					
D2.7	Accelerate implementation to attain higher levels of renewable energy penetration		MOPI/ Guyana Energy Agency					
D2.8	Build the capacity of energy sector staff, entrepreneurs, rural and hinterland communities to implement and manage energy projects							
D3	***Energy Efficiency***							
D3.1	Phase in, then make mandatory, energy efficiency measures for public and private buildings for new buildings (commercial and industrial) by 2030		MOPI/GEA					
D3.2	Establish a resource efficiency initiative that focuses on electricity savings for the manufacturing sector							
D3.3	Apply minimum energy performance standards, labels and certification for use of high-energy efficiency equipment and appliances, then make mandatory by 2030							
D3.4	Review and update current incentives schemes to accelerate the phase out of inefficient equipment and appliances							
D3.5	Build local awareness and understanding and business cases for energy efficiency							

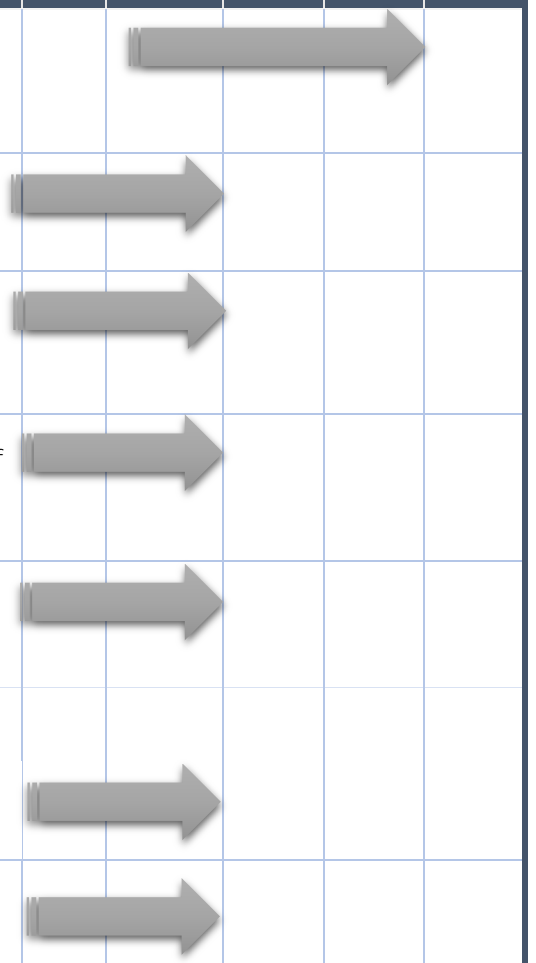
Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
D4	***Sustainable Transport Sector***							
D4.1	Establish vehicle and emission standards as an immediate priority for climate change mitigation and pollution control		MOPI/GEA/ GRA					
D4.2	Phase in vehicle standards and routine emissions testing							
D4.3	Conduct feasibility studies for planning the phase in of electric vehicles to inform the long-term transition							
D4.4	Prioritise investment for increased road safety measures							
E	**RESILIENT INFRASTRUCTURE, GREEN TOWNS AND URBAN PUBLIC SPACES**							
E1	***Land Transport***	Provide high quality road transport connections that lowers transport costs and environmental impacts on a per km basis						
E1.1	Schedule investments in road infrastructure according to the needs of each regional network	Low-carbon and sustainable lifestyles supported through the provision of convenient and low cost alternatives to private transport as well as improving access to non-motorized transport	MOPI/ Work Services Group (WSG)					
E1.2	Relieve key bottlenecks in the coastal network to reduce congestion							
E1.3	Build improved land transport links to Bartica (Western Network)							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
E1.4	Improve the transport network around Linden (Eastern Network)							
E1.5	Build robust connections around Lethem (Southern Network)							
E2	***Ports***							
E2.1	Adopt urgent measures to relieve constraints and mitigate risks concerning Georgetown port		MOPI/ Maritime Administration Department (MAD)					
E2.2	Support the establishment of a container terminal, to meet current demand for container storage space		Transport & Harbours Division (THD)					
E2.3	Support the establishment of a deep-water port at the mouth of the Berbice or Essequibo Rivers							
E3	***Airports***							
E3.1	Support investments on appropriate land transport connections, to maximize infrastructure efficiency and foster real estate development in the surrounding areas		MOPI/ Guyana Civil Aviation Authority (CAA)					
E3.2	Upgrade airstrips of critical towns in the hinterland		CAA					
E4	***Information and Communication Technologies (ICT)***							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
E4.1	Improve broadband access in in the Hinterlands through a three-stage approach	Reliable and cost competitive connectivity options available for personal and business customers, in line with international standards	Ministry of Public Tele-communicatio ns (MOPT)					
E4.2	Ensure public buildings have broadband access and develop free of charge eGovernment-services	Increased citizen engagement with the Government through effective and accessible eGovernment-services, promoting inclusion and social development						
E5	***Coastal Protection Infrastructure***							
E5.1	Restore and/or restore mangrove areas	Protect citizens and businesses from flood risk by protecting and restoring mangroves and developing and restoring the sea wall as an effective first line of defence	MOPI/Sea & River Defense (SRD)					
E5.2	Reconstruct, rehabilitate and maintain critical sections of the sea and river defences							
E5.3	Improve the capacity of the drainage system and improve early warning systems		MOPI, MOA/ NDIA, City of Georgetown					
E6	***Inclusive and Green Urban Settlements***							
	Urban planning and building standards							

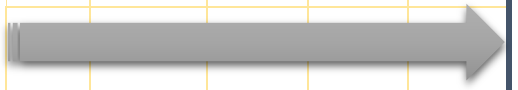
Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
E6.1	Reform government-wide land-use planning to promote mixed-used development for sustainable urban development is appropriate and respected across all institutions	Sufficient land allocated to meet municipal service demand, provide clear provisions for the expansion of the housing stock, and offer residents and businesses assurance that their homes and offices are structurally sound, sustainable and resilient to natural hazards	Ministry of Communities/ Central Housing & Planning Authority (CH&PA); MoTP/GLSC		→	→	→	→
E6.2	Develop and apply environmental quality guidelines and standards	Local population and especially the poorest in society, have a sufficient supply of safe and affordable housing, open green space and access to basic services (electricity, water and sanitation facilities)			→	→	→	→
E6.3	Integrate robust projections of urban population growth, infrastructure demand and land characteristics into urban planning decisions	Appropriate regulatory frameworks, infrastructure and economic incentives for integrated waste management plans at the local level are in place	MOC/ CH&PA		→	→		
E6.4	Develop capacity within the Guyana National Bureau of Standards (GNBS) to review and update building standards and consider the case for fiscal incentives for energy efficient buildings	Minimise damage when floods occur by increasing the capacity of urban infrastructure to mitigate increases in surface water runoff			→	→		
E6.5	<u>Housing Development</u> Consolidate existing housing developments and complete the Squatter Regularization programme				→	→	→	

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
E6.6	Expand construction of low-income housing and upgrade existing housing stock, drawing from the lessons learned in previous government programmes			
E6.7	Establish a public-private partnership (PPP) model to offer well-connected block lots to developers			
E6.8	Review thresholds for corporate tax relief for low-income mortgage providers and commit to maintaining the policy in the long term		CH&PA MOF/GRA	
E6.9	Design a financial literacy program to raise awareness of credit eligibility		CH&PA/ Department of Public Information (DPI)	
E6.10	Develop a local certification process for contractors		MOF/GRA MOC/ CH&PA	
	<u>Water and Sanitation</u>			
E6.11	Develop a standardized and scalable data collection system and set quantitative targets for GWI		MOC/GWI	
E6.12	Conduct a rapid assessment of Georgetown drainage conditions to develop a programme to clear drains, repair sluices and emergency pumps		MOC/ CH&PA MOA/NDIA	



Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
E6.13	Undertake an economic feasibility study for a public sewage treatment plant and develop septic tank production and maintenance standards		MOC/ CH&PA					
	<u>Urban transport and mobility</u>							
E6.14	Undertake an economic feasibility study to cost the recommendations from the Georgetown Sustainable Urban Transport Study		MOPI City of Georgetown MOC					
E6.15	Integrate population growth projections with sustainable transport planning for other urban areas (particularly, regional capitals)							
F	**Trade, Investment and International Cooperation**							
F1	***Advance Action on Existing Trade Agreements***							
F1.1	Support negotiations concerning the new CARICOM-Canada free trade agreement with the aim to reach a conclusion before the existing CARIBCAN (Caribbean Canada Trade Agreement) waiver expires in 2023		Ministry of Foreign Affairs (MOFA)					
F1.2	Fully implement the EU-CARIFORUM Economic Partnership Agreement							
F1.3	Establish a dedicated team and monitoring system to deliver against Guyana's commitment to immediately implement 73% of provisions under the WTO Trade Facilitation Agreement (TFA)		MoFA MoF MoB					

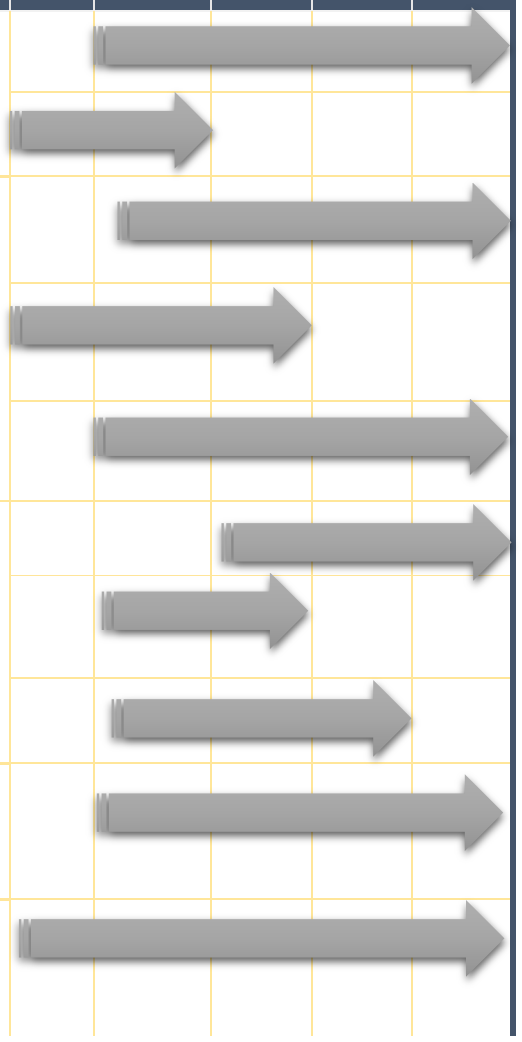
Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
F2	***Implement Supporting Standards***							
F2.1	Review existing sanitary and phyto-sanitary (SPS) standards to remove trade barriers and ensure alignment with WTO obligations		MoFA					
F2.2	Align remaining national standards with international best practice, where appropriate							
F3	***Promote and Support 'Green' Goods***							
F3.1	Assess the feasibility of a special economic zone to encourage higher value-add and sustainably produced or certified exports, particularly 'green' goods and services		MOFA MOB/GO-INVEST					
F3.2	Finish development of the Guyana Office for Investment's (GO-INVEST) new strategy for investment promotion and facilitation							
3	**BUILD HUMAN CAPITAL AND INSTITUTIONAL CAPACITY**							
G	**Healthy, Educated and Socially Cohesive Population**							
G.1	***Public Health and Wellbeing***							
G1.1	Primary care is the foundation of Guyana's health care service	Guyana's population is among the healthiest in the Caribbean and the Americas.	Ministry of Public Health (MOPH)					

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
G1.2	Preventive care and treatment are prioritized for ante-, intra- and post-natal care	Universal health is available to all citizens as a basic human right, and health system services embody principles of equity and solidarity, individual empowerment and participation, and respect for cultural traditions	MOPH	
G1.3	Strengthen the referral system to ensure that the population has equitable access to needed health care services and supplies	Disease monitoring, control and treatment are strengthened to eradicate communicable diseases such as malaria, tuberculosis and other neglected tropical diseases (NTDs) and to continually reduce incidence of HIV/AIDS, suicides and other communicable diseases	MOPH	
G1.4	Quality healthcare is attainable by the most vulnerable in society			
G1.5	Indigenous traditions of medicine and well-being are respected and preserved			
G1.6	Well-trained social workers with knowledge of Amerindian culture and communities must be available to provide guidance and counselling		MOPH MOIPA	
G1.7	Strengthen the Ministry of Public Health's capacity to manage an integrated health service delivery network		MOPH	

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
G1.8	Ensure that quality becomes everyone's priority with measures of excellence applied across the seven health system components							
G1.9	Delivery of quality health outcomes is the priority through results-based management		MOPH					
G1.10	The Guyanese health system must attract qualified, ethical and specialist professionals and workers							
G1.11	Health financing is equitable, innovative and does not unduly burden the most vulnerable							
G1.12	The underlying causes of Non-communicable diseases (NCDs) are targeted for urgent and long-term action							
G1.13	Surveillance monitoring and the health information system are essential priorities for investment							
G1.14	Target interventions to 'at-risk' groups e.g. adolescents, indigenous, vulnerable and disadvantaged women, youths, LGBQTI, sex workers, where they live, work and/or socialize for more effective responses							
G1.15	The Ministry of Public Health must actively collaborate with the Ministry of Education, Social Protection and the Ministry of Communities		MOPH MOE MOSP MOC					

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
G1.16	Cross-sectoral and inter-agency cooperation is strengthened to improve public sanitation and neighbourhood environmental quality		MOPH MOC					
G.2	***Education***							
G2.1	Redouble efforts to keep boys and girls (14-16) in school during the compulsory period of schooling	• The Guyanese population Is well educated and can meaningfully participate in economic activity • Secondary school matriculation has significantly improved among a majority of high school graduates • Disparities in education outcomes between coastal and hinterland regions have been significantly reduced	Ministry of Education (MOE)					
G2.2	Prioritise investment in special needs children							
G2.3	Promote better worker compensation packages, incentives and performance measures for recruiting and retaining top quality teachers to the education system	Protect the health of citizens by ensuring water, sanitation and hygiene facilities are in line with minimum international health standards						
G2.4	New teacher training institutions must be accredited to national (and international) standards							
G2.5	More male teachers are encouraged and incentivized to participate in the teaching profession		MOE					
G2.6	Recognize and reward good teachers, good results and excellence							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
G2.7	School principals and teachers from the same grades must conference annually			
G2.8	Fully implement curriculum changes to educate on the green state agenda			
G2.9	Indigenous children should benefit from culturally-appropriate instructional materials and methods		MOE MOIPA	
G2.10	Improve the design of schools, classrooms, dormitories (i.e. public boarding schools in the hinterland) and facilities, and related access			
G2.11	Schools must celebrate annually, where feasible, national events and cultural diversity			
G2.12	Benchmark and recognise top performance		MOE	
G2.13	Community alliances should be tied to school and teacher performance benchmarks			
G2.14	Eliminate dead-ends in the education system			
G2.15	Strengthen Technical, Vocational Education and Training (TVET) to play a vital role in preparing students for the labour market		MOE MOB	
G2.16	The Ministry of Education must actively collaborate with the Ministries of Public Health, Social Protection and the Ministry of Communities		MOE MOPH MOSP MOC	



Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
				2019 | 2020 – 2024 | 2025 – 2029 | 2030 – 2034 | 2035 – 2040
G3	***Social Cohesion and Diversity of Cultural Expression***			
G3.1	Implementing the Social Cohesion Plan is a priority for all sectors		MoTP/ Department of Social Cohesion	
G3.2	Public agencies must also renew efforts to focus programmes more clearly on vulnerable groups and in hinterland areas		MoTP/DoSC	
G3.3	Strengthen the social safety net to safeguard vulnerable groups and populations against the impacts of structural changes from the transition		Ministry of Social Protection (MoSP)	
G3.4	Strengthen social protection measures for providing assistance to vulnerable groups, particularly women and young girls			
G3.5	Promote investment in Guyana's diverse cultural expression as a unifying, cohesive objective		MoTP/DoSC	
G3.6	Foster investment and development of a vibrant creative industry			
G3.6	Displays of local works of art should be facilitated by public institutions and buildings particularly during celebratory periods of national and cultural events			
H	**GOOD GOVERNANCE, TRANSPARENCY AND KNOWLEDGE MANAGEMENT**			

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
H1	***Governance and Citizen Participation***							
H1.1	Improve performance and accountability of public administration and services		MoLA MoF		→	→	→	→
H1.2	Modernise the transparency, and accountability architecture via strengthened public financial management and procurement systems, increasing public access to timely and relevant information and establishing clearer requirements for public officials and the political system				→	→	→	→
H1.3	Strengthen public procurement				→	→	→	→
H1.4	Improve public access to information				→	→	→	→
H1.5	Adequately resource the Integrity Commission of Guyana to effectively carry out its mandate				→	→	→	→
H1.6	Reform the political system				→	→	→	→
H1.7	Strengthen citizen participation and inclusion				→	→	→	→
H1.8	Modernise the legal and regulatory framework for civil society organisations (CSOs)		MOLA		→	→	→	→
H2	***The Rule of Law and Strong Institutions***							

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule
				2019 | 2020 – 2024 | 2025 – 2029 | 2030 – 2034 | 2035 – 2040
H2.1	Correct deficiencies in the rule of law		MOLA	
H2.2	Strengthen the independent Judiciary with additional resources for greater effectiveness			
H2.3	Strengthen Judiciary support systems			
H2.4	Strengthen the capacity of the Guyana Police Force and the Department of Public Prosecutions			
H2.5	Undertake a comprehensive review on the performance of National Human Rights institutions			
H3	*Decentralisation and Local Governance*			
H3.1	Strengthen the role of Ministry of Communities in building capacity of the local government authorities while simultaneously removing structural obstacles to growth		MOC MOF MoTP	
H3.2	Promote greater autonomy in the regional system to support the efficiency, effectiveness and growth of services within green towns			
H4	*Land Governance*			
H4.1	The governance of land is given the highest priority		MoTP/GLSC	
H4.2	Establish the Integrated Land Use Planning (ILUP) system			

Ref #	Development Objectives	Goals	Main Reporting Agencies	Schedule				
				2019	2020 – 2024	2025 – 2029	2030 – 2034	2035 – 2040
H4.3	Assess the feasibility for an overarching land use management authority							
H4.4	Prioritise strategic investments to improve land administration							
H4.5	Resolve the land rights of indigenous peoples		MoTP/GLSC MOC MOIPA					
H4.6	Implement the Integrated Land Use Planning system		MoTP/GLSC					
H4.7	Better oversight and control of mining operations is a priority		MNR/GGMC					
H4.8	Promote transparency in the Oil and Gas sector		MoTP/DoEn					
H5	*Knowledge Management, Information and Communications*							
H5.1	Facilitate wide ICT adoption		MOPT					
H5.2	Encourage a culture of data and information sharing throughout government							
H5.3	Strengthen the capacity of the National Data Management Authority (NDMA)							