SAINT LUCIA'S NATIONAL INFRASTRUCTURE ASSESSMENT

GUIDING PRINCIPLE 1: STRATEGIC PLANNING

Infrastructure development decisions should be based on strategic planning that is aligned with global sustainable development agendas and supported by enabling policies, regulations and institutions that facilitate coordination across departments and both national and sub-national levels of government and public administration.

BACKGROUND

The small island Caribbean country of Saint Lucia faces major challenges to ensure its future prosperity. In the face of increasing climate risks, the island's geography means it is exposed to natural hazards including flooding and landslides. These threats pose a particularly high risk to the lives and livelihoods of those living in low-income or more vulnerable communities. On a national scale, the country faces persistent economic challenges common to small island countries (Adeoti *et al.* 2020), such as limited fiscal capacity and flexibility to address investment requirements, due to its size and reliance on imports (Saint Lucia, Ministry of Education, Innovation, Gender Relations and Sustainable Development 2019). Threats to its natural environment may also have serious social or economic consequences that can undermine long-term aspirations for sustainable development. For example, the impact of Hurricane Tomas in 2010 cost 43.4 per cent of Saint Lucia's Gross Domestic Product (GDP) (Saint Lucia, Ministry of Education, Innovation, Gender Relations and Sustainable Development 2018, p. 18).

Central to addressing these challenges is the country's infrastructure, which provides services including energy, water, transport, waste management and flood protection, as well as facilities such as schools, hospitals and markets. However, the long-term demand for these services is projected to change with population growth and the pursuit of economic objectives in key sectors, including tourism and agriculture. The COVID-19 pandemic has disrupted the island's tourism as well as shipping and aviation, and exemplifies how future uncertainties could greatly impact Saint Lucia's national development.

The need for integrated long-term planning across infrastructure sectors is recognized by the national government and has been formalized through the creation of the National Integrated Planning and Programme Unit (NIPP) within the Department of Finance in 2018.

NATIONAL INFRASTRUCTURE ASSESSMENT

Saint Lucia has developed a framework for a "National Infrastructure Assessment", which equips decision makers in government with a robust approach to infrastructure planning (Adshead *et al.* 2020)[4]. It is designed to ensure that social, economic and environmental needs are all met in a range of future scenarios. The assessment is based on the National Infrastructure Systems Model (NISMOD), developed by the University of Oxford-led Infrastructure Transitions Research Consortium (ITRC). It consists of a series of steps which assess a country's current and future infrastructure needs and then provide recommendations on how those needs can be met.

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The National Infrastructure Assessment estimates Saint Lucia's future infrastructure needs using cross-sectoral analysis, informed by data collected and strategically prioritized in collaboration with stakeholders. The assessment delivers recommendations for how these needs can be met in alignment with national priorities and international commitments, such as the UN Sustainable Development Goals targets and climate change mitigation commitments under the Paris Agreement. Additionally, the assessment provides a means to prioritize adaptation measures across the island, using spatial data on climate change-driven hazards. This is achieved by assessing the risk that these hazards pose to economic, social, and natural environment assets, and the extent to which they may impede progress toward the SDGs.

STRATEGIC INFRASTRUCTURE PLANNING

Long-term strategic planning in Saint Lucia focuses on four interdependent infrastructure sectors: energy, water supply, wastewater and solid waste. It analyses future changes in demand for these sectors determined by trends in the resident population and tourist arrivals. For the first assessment during 2019-20, comprehensive data were collected on a set of defined infrastructure assets in Saint Lucia, and the government determined the key drivers influencing the provision or demand for infrastructure. Modelled outcomes then provided the basis for decisions and recommendations concerning the type, capacity, location and sequencing of proposed infrastructure interventions.

Saint Lucia is beginning to move away from siloed infrastructure governance towards an integrated approach, whereby national priorities and targets can be more effectively pursued with the input of different stakeholders in government, research institutions and the private sector. Integrated modelling of infrastructure performance allowed decision makers in Saint Lucia to better assess and account for efficiencies and trade-offs in achieving national development objectives. For example, Figure 2 shows increased demand across the infrastructure system from projected tourism growth through the expansion of two international transport hubs. It illustrates potential cross-sectoral solutions which would reduce pressures on resource use and the island's existing solid waste, energy, water supply and wastewater sectors.

[4] This case study is a summarized version of the UNOPS publication cited here.

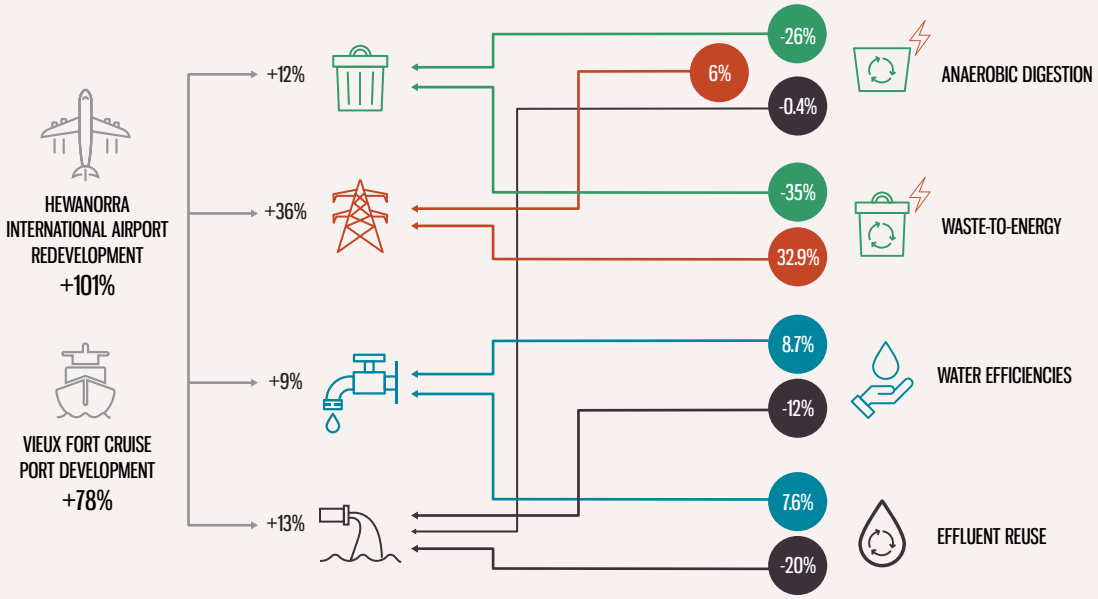

FIGURE 4: IMPACT OF SAINT LUCIA'S AIR AND CRUISE PORT EXPANSIONS ON VISITOR NUMBERS AND INFRASTRUCTURE NEEDS BY 2050, AND POTENTIAL CROSS-SECTORAL SOLUTIONS

Source: Adshead *et al.* (2020)

ALIGNMENT WITH GLOBAL SUSTAINABLE DEVELOPMENT AGENDAS

The National Infrastructure Assessment provides a basis for Saint Lucia's future development vision and helps to define the infrastructure investments and policies that may be required to achieve it. The infrastructure modelling used to develop long-term, cross-sectoral infrastructure portfolios was undertaken using key targets set in alignment with national objectives, as well as the SDGs and the Paris Agreement.

To take account of mitigation targets, the model included Saint Lucia's stated emission reduction targets in its Nationally Determined Contributions (NDCs). These define the type and size of interventions that could be implemented in a long-term sustainable infrastructure strategy. To facilitate the integration of climate change adaptation into development planning, Saint Lucia has developed a National Adaptation Plan (NAP), containing 271 adaptation measures aligned with the SDGs. As a result of the National Infrastructure Assessment and accompanying stakeholder training, these measures can be better prioritized and implemented based on the latest data and evidence.

While in the broader sense infrastructure has the potential to influence 92 per cent of SDG targets (Thacker *et al.* 2018), the recommendations made as part of the assessment are directly relevant to the achievement of several SDG targets focused on energy and water provision, the natural environment, poverty reduction and sustainable waste management (SDG targets 1.4, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2, 11.6 and 12.5). In addition to the main analysis, the long-term infrastructure needs for several planned focus projects were assessed. These projects have the potential to contribute to the achievement of a broad range of SDG targets relating to economic growth, health and inequality (SDGs 2, 3, 8, 9, 10, 13 and 17). Figure 5 shows the SDGs potentially influenced by actions within the National Infrastructure Assessment.

Source: Adshead *et al.* (2020)

FIGURE 5: SDGS POTENTIALLY INFLUENCED BY ACTIONS WITHIN SAINT LUCIA'S NATIONAL INFRASTRUCTURE ASSESSMENT

COORDINATED POLICIES, REGULATIONS AND INSTITUTIONS

The assessment includes recommended policy and regulatory measures across all sectors, including energy efficiencies through building codes and appliance labelling; measures to improve metering and leakage reduction in the water supply network; and charges and deposit refunds designed to reduce waste generation by over 12 per cent (Adshead *et al.* 2020, p. 31). The implementation of such policies, along with revised building codes, will contribute to increased resilience.

Due to the different mandates and agendas of Saint Lucia's infrastructure-related ministries, cross-ministerial coordination initially posed a challenge for the country. However, the creation of the NIPP as a nodal agency helped facilitate the assessment process in an integrated manner. The NIPP is now responsible for defining the overarching vision, strategy and roadmap for the development of Saint Lucia's national infrastructure agenda. During the 2019-20 assessment, contributions from a variety of institutions were incorporated, including ministries, other government agencies, academia and the private sector. Continuous on-the-job training was provided to the NIPP team during the assessment, such that the study was co-produced with them, in order to facilitate national ownership. A training workshop on the analysis tools was delivered to around 30 government officials from the Ministry of Finance and other departments, with the aim of building the government's overall capacity for sustainable, long-term infrastructure planning.

There was limited available data for some areas of interest, such as the costs associated with selected infrastructure portfolios. Best estimates were used for the purpose of the assessment. However, training on the use of the tool enables government officials to incorporate new data as and when it becomes available and should therefore strengthen future assessments.

REPLICABILITY

NISMOD methodology is replicable and has been applied successfully in different contexts – including Curaçao (Adshead *et al.* 2018), Palestine (Ives *et al.* 2019) and the United Kingdom (Hall *et al.* 2017) – in order to support governments moving towards integrated national infrastructure planning. It has also been used to support resilience planning in Argentina, China, New Zealand, Tanzania and Viet Nam.

The Saint Lucia experience demonstrates the instrumental role of integrated, strategic infrastructure planning in helping countries undertake evidence-based decision-making. The National Infrastructure Assessment addresses uncertainty by projecting a range of different growth scenarios into the future, and the ongoing disruption to the tourism, aviation and shipping sectors caused by the pandemic can be incorporated in the model to inform decision-making and economic recovery from COVID-19. The targets aligned with national objectives and international development agendas are adaptable to changing national priorities, such as a sharper focus on health or economic indicators to combat the devastating impacts of the pandemic.

KEY INSIGHTS

- The National Infrastructure Assessment equips the government with a step-by-step framework to prioritize and achieve long-term development visions.
- The National Integrated Planning and Programme Unit (NIPP), within the Department of Finance, is now responsible for coordinating Saint Lucia's infrastructure agenda across institutions.
- The National Infrastructure Assessment includes policy and regulatory recommendations across all sectors, which achieves two critical goals: 1) it reinforces the degree to which infrastructure supports national and global objectives; and 2) it promotes an enabling environment where sustainable infrastructure can flourish.

REFERENCES

Adeoti, T., Fantini, C., Morgan, G., Thacker, S., Ceppi, P., Bhikhoo, N., Kumar, S., Crosskey, S. and O'Regan N. (2020). *Infrastructure for small island developing states. The role of infrastructure in enabling sustainable, resilient and inclusive development in SIDS*. Copenhagen. https://content.unops.org/publications/Infrastructure_SIDS_EN.pdf?mtime=20201013090607.

Adshead, D., Fuldauer, L., Thacker, S., Hickford, A., Rouhet, G., Muller, W.S., Hall, J.W. and Nicholls, R. (2018). *Evidence-based infrastructure: Curacao - national infrastructure systems modelling to support sustainable and resilient infrastructure development*. Copenhagen. https://www.itrc.org.uk/wp-content/uploads/2019/09/UNOPS-ITRC_EBI_Curacao_2018-Full-report.pdf.

Adshead, D., Fuldauer, L., Thacker, S., Romaěn Garciěa, O., Vital, S., Felix, F., Roberts, C., Wells, H., Edwin, G., Providence, A. and Hall, J.W. (2020). *Saint Lucia: National Infrastructure Assessment*. Copenhagen. https://content.unops.org/publications/Saint-Lucia-National-Infrastructure-Assessment.pdf.

Hall, J.W., Thacker, S., Ives, M.C., Cao, Y., Chaudry, M., Blainey, S.P. and Oughton, E.J. (2017). Strategic analysis of the future of national infrastructure. Proceedings of the Institution of Civil Engineers. *Civil Engineering* 170 (1), 39-47. https://doi.org/10.1680/jcien.16.00018.

Ives, M.C., Hickford, A.J., Adshead, D., Thacker, S., Hall, J.W., Nicholls, R.J., Sway, T., Abu Ayyash, M., Jones, R. and O'Reagan, N. (2019). A systems-based assessment of Palestine's current and future infrastructure requirements. *Journal of Environmental Management* 234, 200-213. https://doi.org/10.1016/j.jenvman.2018.12.058.

Saint Lucia, Ministry of Education, Innovation, Gender Relations and Sustainable Development (2018). *Saint Lucia's National Adaptation Plan (NAP): 2018–2028*. https://www.bb.undp.org/content/barbados/en/home/library/crisis_prevention_and_recovery/saint-lucia-nap.html.

Saint Lucia, Ministry of Education, Innovation, Gender Relations and Sustainable Development (2019). *Saint Lucia: voluntary national review report on the implementation of the 2030 Agenda for Sustainable Development.* https://sustainabledevelopment.un.org/content/documents/23570SAINT_LUCIA_VNR_REPORT_JUNE_2019.pdf.

Thacker, S., Adshead D., Morgan G., Crosskey S., Bajpai A., Ceppi P., Hall J.W. and O'Regan N. (2018). *Infrastructure: underpinning sustainable development*. Copenhagen. https://www.itrc.org.uk/wp-content/PDFs/ITRC-UNOPS-Infrastructure_Underpining_Sustainable%20Development.pdf.