Dominican Republic Infrastructure Sector Assessment Program (InfraSAP)

World Bank

December 2022

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Acronyms

ADN	Alcaldía del Distrito Nacional (National District Municipality)
ADF	Agence Française de Développement
APORDOM	Autoridad Portuaria Dominicana (Dominican Port Authority)
AUM	Assets Under Management
BAU	Business as usual
BCIE	Banco Centroamericano de Integración Económica (Central American Bank for Economic Integration)
BRT	Bus Rapid Transit
CA	Central America
CIF	Caribbean Investment Facility
CNAPP	Consejo Nacional de Alianzas Público Privada (National Council of Public-Private Partnerships)
DGAPP	Dirección General de Asociaciones Público-Privadas (General Directorate of Public-Private Partnerships)
DISEGETT	Dirección General de Seguridad de Tránsito y Transporte Terrestre (General Directorate of Road Safety and Land Transport)
DR	Dominican Republic
ETED	Empresa de Transmisión Eléctrica Dominicana (Dominican Electric Transmission Company)
FDI	Foreign direct investment
FIMOVIT	Fideicomiso de Movilidad y Transporte (Mobility and Transportation Trust Fund)
FITRAM	Fideicomiso para el Desarrollo del Sistema de Transporte Masivo (Trust Fund for the Development of the Mass Transit System)
FTZ	Free Trade Zones
GDP	Gross domestic product
GHG	Greenhouse Gas
GODR	Government of the Dominican Republic
GSD	Gran Santo Domingo (Greater Santo Domingo)
HCI	Human Capital Index
HDI	Human Development Index
IBP	Internet backbone provider
ICT	Information and Communications Technology
IDAC	Instituto Dominicano de Aviación Civil (Dominican Republic Civil Aviation Institute)
IDB	Inter-American Development Bank
INDOTEL	Instituto Dominicano de las Telecomunicaciones (Dominican Telecommunications Institute)
INTRANT	Instituto Nacional de Tránsito y Transporte Terrestre (National Institute of Transit and Land Transportation)
iRAP	International Road Assessment Programme

ITU	International Telecommunication Union
IXP	Internet exchange point
LAC	Latin America and the Caribbean
LSCI	Liner shipping connectivity index
MDB	Multilateral Development Bank
MINPRE	Ministerio de la Presidencia (Ministry of the Presidency)
MOF	Ministry of Finance (Ministerio de Hacienda)
MOPC	Ministerio de Obras Públicas y Comunicaciones (Ministry of Public Works and Communications)
MRG	Minimum revenue guarantees
NDC	Nationally Determined Contribution
NMT	Non-motorised transport
OECD	Organisation for Economic Co-operation and Development
OMSA	Oficina Metropolitana de Servicios de Autobuses (Metropolitan Bus Service Office)
OPRET	Oficina para el Reordenamiento del Transporte (Office for the Reorganization of Transportation)
PENSV	Plan Estratégico Nacional para la Seguridad Vial (National Strategic Plan for Road Safety)
PIM	Public Investment Management
PMUS	Plan de Movilidad Urbana Sostenible (Sustainable Urban Mobility Plan)
PPIAF	Public-Private Infrastructure Advisory Facility
PPP	Public-Private Partnership
RNFO	Red Nacional de Fibra Óptica (National Network of Optical Fiber)
SDG	Sustainable Development Goals
SME	Small and medium-sized enterprise
SNIP	National System of Public Investment, for its acronym in Spanish
SOB	State-owned bank
SOE	State-owned enterprise
TDM	Travel Demand Management
TOD	Transit Oriented Development
UMIC	Upper middle-income country
URBE	Unidad Ejecutora para la Readecuación de Barrios y Entornos (Executing Unit for the Redevelopment of Neighborhoods and Environments)
USP	Unsolicited Proposal (Private Initiative)
VfM	Value for Money
WEF	World Economic Forum

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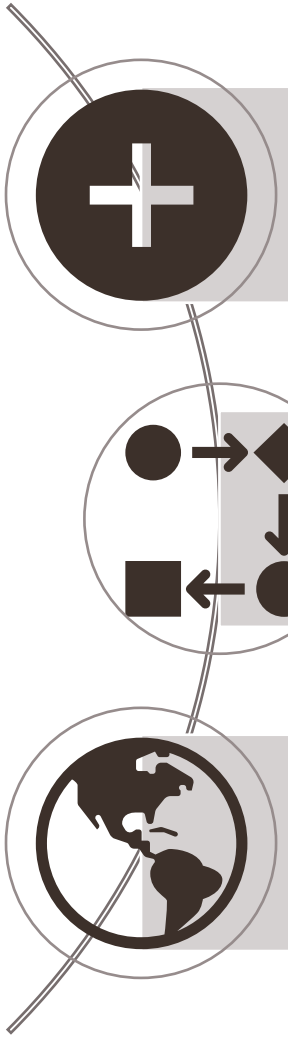
InfraSAP Intro

1. What is the InfraSAP?



The Infrastructure Sector Assessment Program ("InfraSAP") is a World Bank diagnostic assessment designed to **identify investment gaps** and **policy shortfalls**, as well as **opportunities for private sector participation**.

Provides roadmap for developing **sustainable and resilient quality infrastructure** aimed at scaling up private participation in infrastructure sectors.

InfraSAP includes a core standardized diagnostic and a customized diagnostic

- The **standardized diagnostic** provides a common frame of reference across countries drawing upon common methodologies and two resources: the Infrastructure Global Indicators Dashboard and the Global Infrastructure Map.
- The **customized diagnostic** meet country specific country priorities.

1. What is the InfraSAP?

Connectivity

- Benchmark performance on connecting people and firms to local and regional opportunities
- Identify investments with greatest potential to advance development goals

Finance

- Benchmark adequacy, efficiency and composition of public and private finance
- Identify opportunities to promote efficiency, increase funding and raise finance

Governance

- Benchmark quality of institutional, regulatory and governance environment
- Identify how soft constraints impact productivity of hard infrastructure investments

Each pillar follows the same approach: Recommendations for the Roadmap

1. What is the InfraSAP?

The InfraSAP is designed to identify investment gaps and policy shortfalls, as well as identify opportunities for private sector participation.

Analysis

The InfraSAP analysis considers:

- International benchmarking of key infrastructure diagnostic indicators;
- Country-specific sectoral and cross-cutting priorities in by reviewing policy documents and **engaging with relevant authorities**;
- It also identifies factors that could constitute binding constraints to taking the identified opportunities forward.

Output

- The output is a **roadmap** with timebound (short to medium-term; 3-5 years), action-oriented, and prioritized **recommendations**. It will particularly prioritize short-term actions that bring about immediate direct impact.
- It will outline p**otential investment priorities and opportunities**, including an assessment of private participation options, and areas of **policy and regulatory reform** required to unlock those opportunities.
- Institutional capacity will be assessed as part of the analysis.
- **The InfraSAP roadmap will be aligned with the Gov's ongoing reform initiatives.**

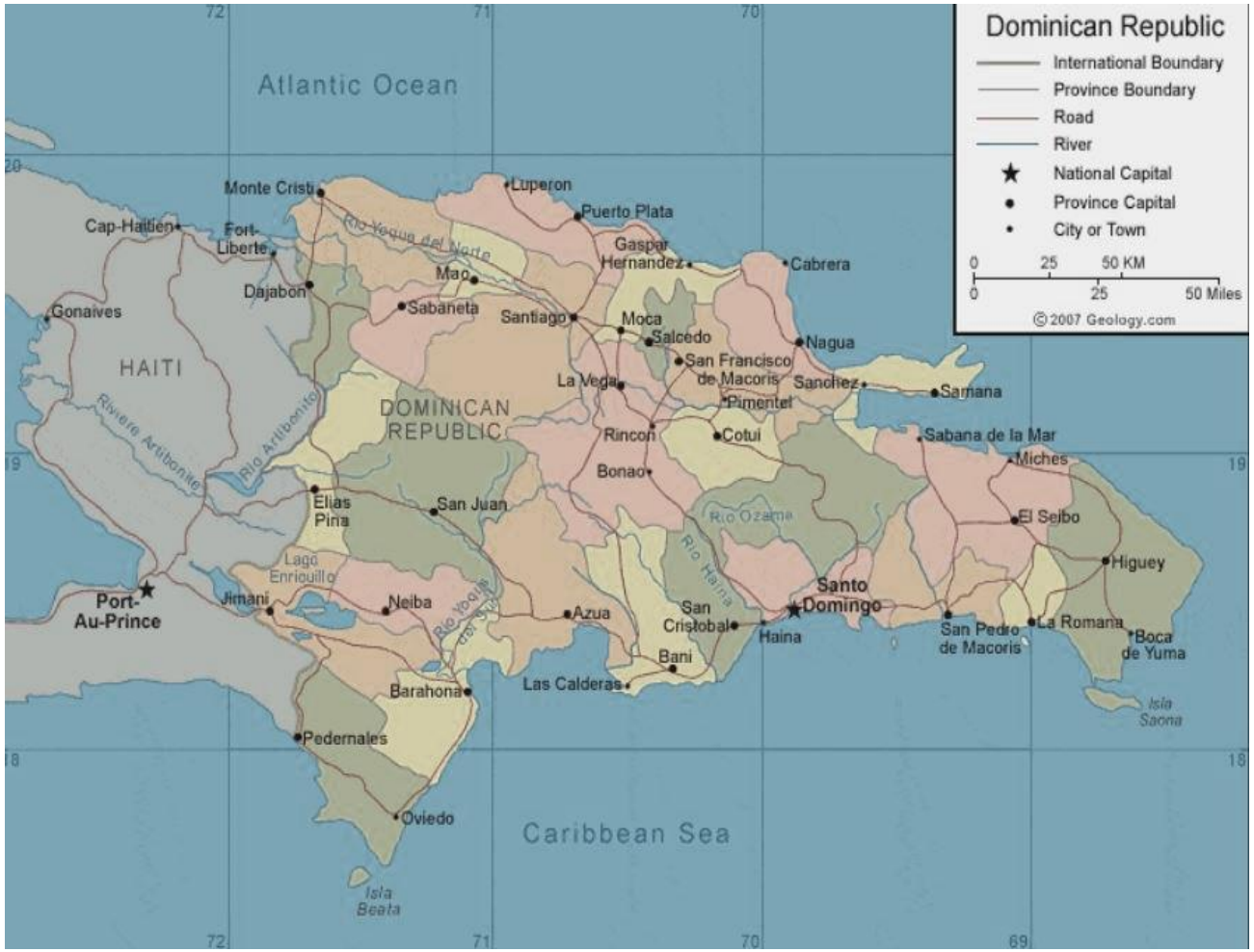
2. The Dominican Republic InfraSAP

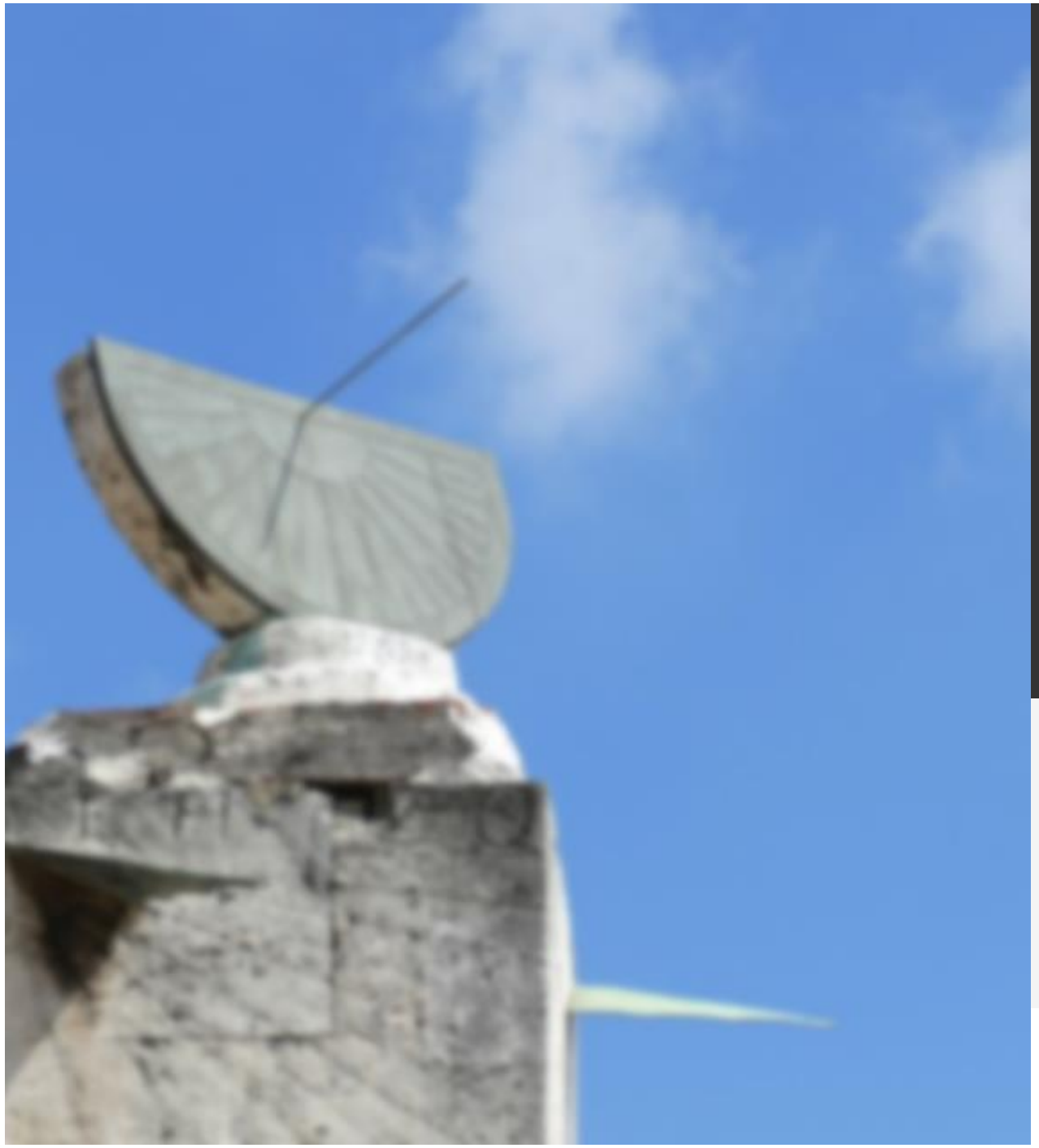
Outline:

1. Country context
2. Transport
3. Digital development
4. Cross-cutting issues
   - Infra Governance
   - Funding and Financing
   - Public-Private Partnerships
5. Roadmap of recommendations

Status:

- Winter 22 – preliminary desk review analysis
- April/March 22 – virtual consultation with key actors
- June 22 – Internal quality enhancement review
- September 22 – Field mission to the DR
- Fall 22 – finalization, outreach and dissemination





Key findings

Key Findings / Transport

Overall Institutional

- Institutional coordination, lines of authority and disconnection between construction and maintenance are obstacles to deliver urban transport projects.
- Road safety continues to be a scourge in the DR, associated with unsafe vehicle conditions, inadequate infrastructure and widespread use of motorcycles.

- Clearly defined role, responsibilities, and more focused resource deployment for implementing the vision and interventions laid out at the Sto Domingo PMUS, with adequate prioritization and streamlined delivery of new investment projects.
- Program to secure sustainability of the infrastructure and transport projects
- Strengthen INTRANT's leadership role in road safety, empowering the institute to coordinate implementation of the PENSV 2030, complemented by the safe systems approach.

Urban Transport

- Travel times are substantially high in main urban centers due to congestion, set to worsen with increasing rates of motorization.
- Formal public transport has low ridership due to lack of coverage, lack of integration and infrequent service.
- Active mobility (bikes and pedestrians) is not sufficiently prioritized in urban transport planning and management.
- Unmitigated, transport is set to become major source of carbon emissions in next decades.

- Prioritization methodology & capacity building for INTRANT and the *Oficina de Proyectos de Movilidad Urbana e Interurbana* to structure transport projects
- Increase capacity, reliability and comfort of public transit in main cities by means of implementing BRT corridors, expanding the metro system, and integrating fare collection.
- Continue efforts towards the transition of informal transport providers (conchos), supported by a scrapping program and strengthened vehicle inspection system.
- Increase the focus on upgrading and maintaining non-motorized transport in the two cities, namely the bicycle network and pedestrian infrastructure.
- Further support the transformation of urban transport through demand management policies (e.g. Parking and congestion charging), and transit-oriented land use planning.
- Develop a clear model and strategy for the adoption of electric vehicles in urban transport, through defining operating protocols, financing and charging infrastructure.

Interurban Transport

- The lack of rural accessibility still represents an obstacle to balanced territorial development.
- Logistics timeliness and reliability is still hurt by congestion, old vehicles and inadequate infrastructure
- There is insufficient commitment of sustainable funding for road maintenance
- Transport infrastructure is highly vulnerable to damage and disruption from climate change.

- Improve road asset management using performance-based contracts (eg. Crema) and PPPs, using longer term contracts and extending those to the entire network, including feeder and rural roads.
- Professionalize the trucking industry through regulation, capacity building, and provide incentives for freight coordination, digitization, and fleet renewal.
- Develop and implement climate adaptation action plans focused on transport infrastructures, especially ports and the road network

Key Findings / Digital

Overall

- International data (IP) transit prices in the DR do not follow a decreasing trend as international experience suggests. Average prices have remained fixed for the last four years.
- Bandwidth is provided through five submarine cables and terrestrial interconnection from Haiti. Two consortiums operate subsea cables, which indicates high concentration levels, increasing the risk of collusion.
- Geographical market assessment suggests that there are four subnational markets in the DR: in Puerto Plata there is a duopoly market structure while in Punta Cana, Santo Domingo and Haina there are monopolies.

- Completing the regulatory framework affecting the installation, operation, repair and removal of subsea cables to fulfil the existing gaps promoting legal certainty, transparency and accountability.
- The launch of a regulatory quality assessments policy by INDOTEL.
- INDOTEL coordinating the necessary steps to ensure that infrastructure to storage, manage and interchange international traffic is resilient to climate change and other natural events.
- INDOTEL establishing a roadmap to collect and update information about the international bandwidth market.

Key Findings / Cross cutting issues

Governance

While the GoDR has recently taken important and necessary steps (e.g. new legal framework and dedicated institutional setup for PPPs/concessions), there are still a number of governance bottlenecks, related to different topics that define the quality of PIM and PPP/concession frameworks and processes, and prevent greater private sector participation in infrastructure: project development, appraisal and selection; affordability analysis and fiscal impact assessment; procedures and methodologies to assess value for money; and procurement (competition and scrutiny of bidders).

Key policy action recommendations include -some are currently ongoing*-:

- Make MoF a gatekeeper on VfM, affordability and fiscal risk in project selection and prioritization
- Develop regulations, guidelines and methodologies for PPPs/concessions
- Build capacity on VfM and project structuring and procurement in contracting agencies
- Follow de jure project selection and prioritization in PIM
- Allow for a broader range of PSP approaches at all levels

Funding Financing

- Small size of investors and inefficient banks complicate the financing of infrastructure.
- Government bond market is fragmented and has a relatively low liquidity even it is the most relevant fixed income market
- Asset growth of pension funds will make them a relevant player over a mid term horizon
- Trust funds are a locally designed solution with high potential, but they prevent direct investment in projects and their design needs improvement

- Increase the pipeline of bankable projects including a reliable estimate of Minimum revenue guarantees.
- Strengthen the domestic government bond market, reduce fragmentation, introduce benchmark bonds as the price reference for long-term assets.
- Capital markets regulation: permit capital calls and create investment funds category dedicated to private equity and debt for infrastructure projects.
- Reform public sector trust funds: modify mandate to mobilize private sector financiers, strengthen governance and improve financial risk management.

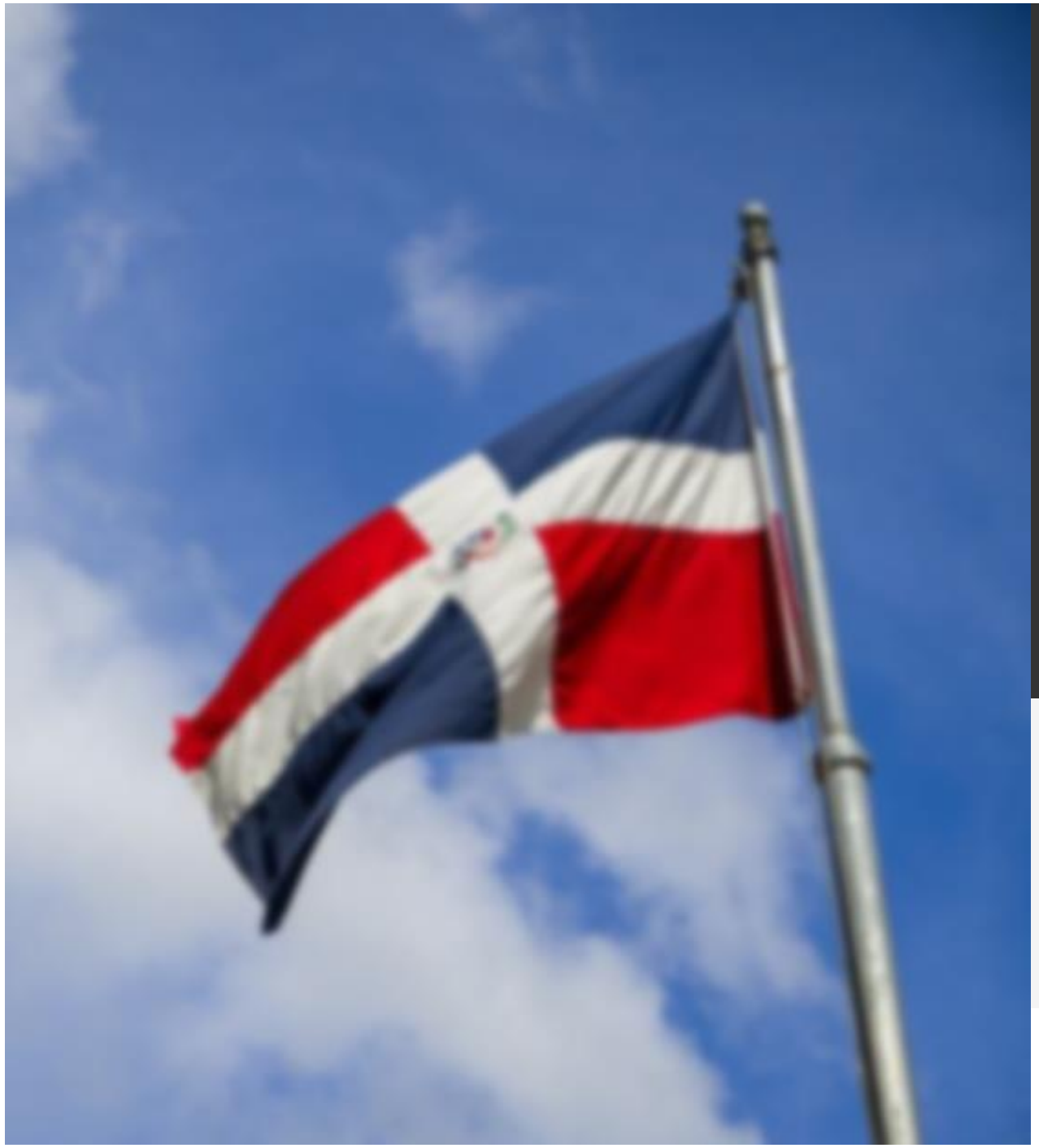
PPPs

The new framework for private participation in infrastructure has improved enabling conditions for PPPs, and successfully ignited several and diverse proposals, mainly originated by the private sector.

Although good practices elements are in place, some challenges remain, *inter alia*: i) Efficiency and support in the Congress approval process; ii) harmonization of the approval process with project preparation maturity, iii) institutional credibility and capacity for project execution, iv) alignment among private initiatives, Government priorities and development goals, iv) regulatory framework and approval process for projects that require a differential scheme, v) sectorial frameworks for concessions versus PPP scheme, vi) funding capacity for project preparation across sectors

- Enable a preinvestment facility to prepare projects following best international practices
- Fund and build capacities in contracting public entities to execute PPP projects
- Adapt and consolidate clear regulation for non-standard PPP projects
- Consolidate a long term and coherent PPP project pipeline applying a broad eligibility analysis and technical prioritization criteria
- Develop guidelines and procedures to manage and evaluate private initiatives, in line with government priorities and sectoral plans
- Consultation process with affected communities needs to be clearly stated into the socio-environmental impact assessment for each project

*Ongoing PPIAF funded technical assistance to DGAPP for the creation of a PPP manual and capacity building; and ongoing Energy sector DPF

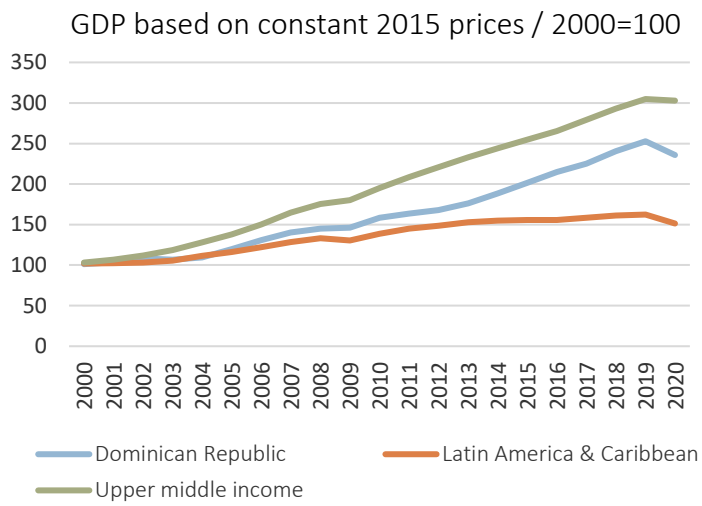


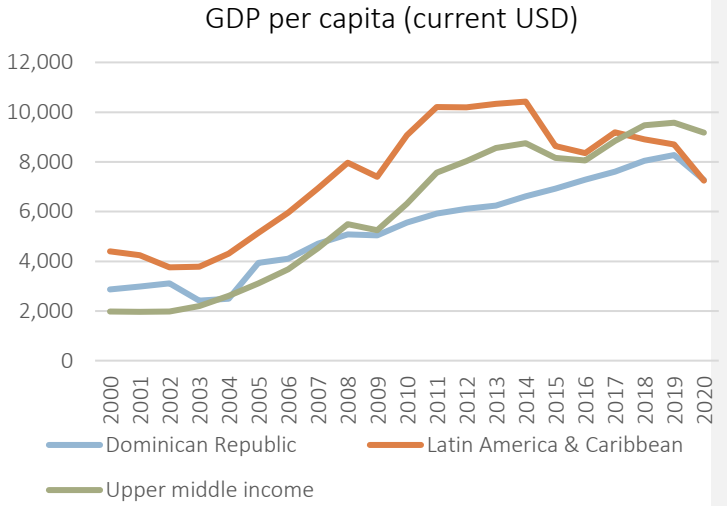
Country Context / macro economic linkages/ GRID

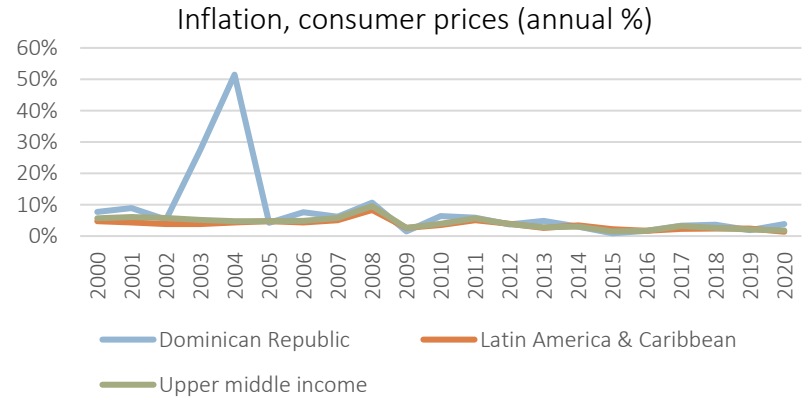
How can infrastructure contribute to a sustainable and resilient path for development in Dominican Republic ?

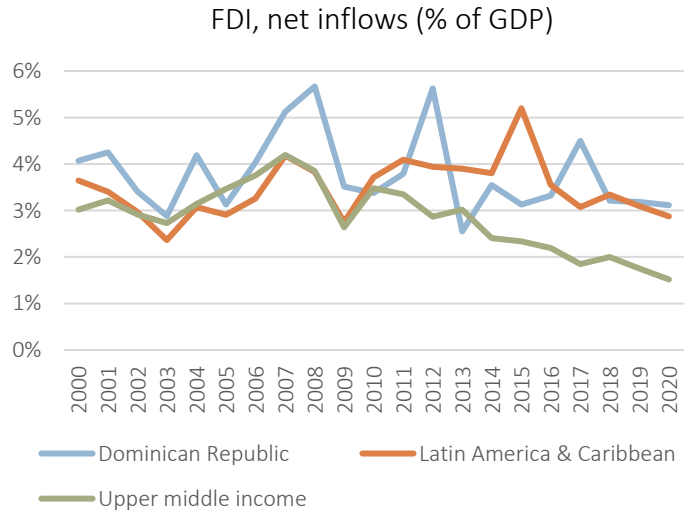
Robust economic growth over the past decade, with relatively high FDI inflows and low inflation

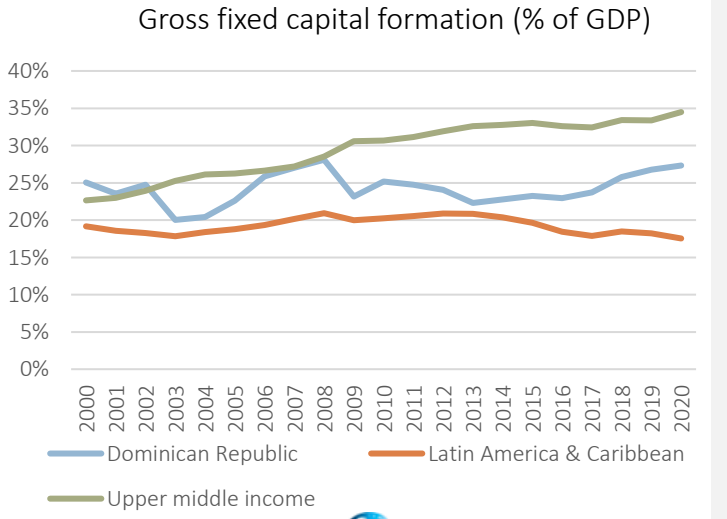
- **Dominican Republic is one of the fastest-growing economies in the LAC region.**
  - The country achieved sustained GDP growth over the past decades, reaching 4.3% CAGR between 2000 and 2020, more than double the average for LAC countries.
  - However, GDP per capita is relatively low in relation to its comparator groups: on average over the last decade, it has been 20% below LAC and UMI countries.
  - The adoption of the inflation targeting (since 2012) helped the DR to maintain the inflation rate low (following a period of high inflation due to domestic banking crisis in 2003).
  - FDI inflows, although somewhat erratic, are relatively high. The country tends to attract FDI due to its closeness to large consumer markets and having competitive labor force.
  - Gross fixed capital formation shows a growing trend in recent years, although still not enough to reach the peak recorded in 2008. It lags behind UMICs but is considerably above the LAC average.









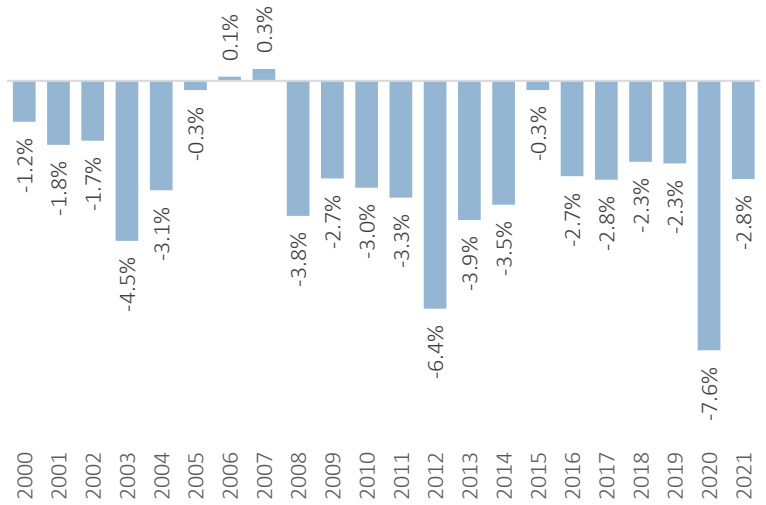


Source: World Bank - WDI

While these achievements are celebrated, the country faces economic challenges

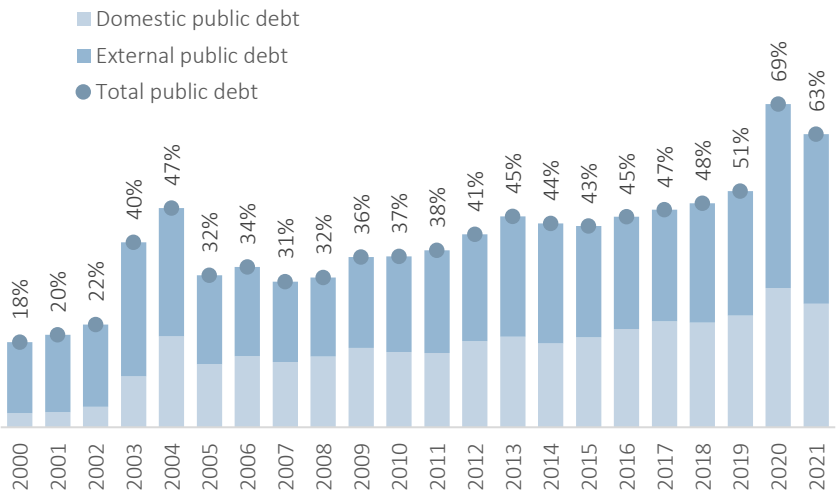
- **Dominican Republic's persistent fiscal deficits continue to pose risks to external stability. These challenges have been intensified by the COVID-19 pandemic.**
  - The fiscal deficit has fluctuated around an average of 3% of GDP between 2010 and 2019. In the same period, public debt increased from 36.6% of GDP to 50.5%. In contrast, tax revenues stood at approximately 13% of GDP, below LAC and OECD averages.
    - It is difficult to argue that the recurring fiscal deficit is a product of excessive spending. In 2019 the level of public spending was 16.6% of GDP, the second lowest in LAC, and well below the regional average of 27.2% of GDP. A low level of public spending limits the State's capacity to provide quality public services and to ensure equal opportunities in access to them. (Zaltsman, A. & Zentner, J. 2021)
  - The COVID-19 pandemic had a significant impact on the DR economy, causing a sharp contraction in all critical sectors, such as tourism, construction and mining. GDP contracted 6.7 percent in 2020, the largest drop since 1965. However, the GDP recovered by 12.3% in 2021, one of the best relative performances in LAC with respect to pre-pandemic levels. (BCRD. 2022)
  - The crisis also impacted public accounts. Additional spending needed to respond to the crisis, combined to a sharp decline in revenues, resulted in 7.6 percent of GDP deficit in 2020, and pushed the public debt-to-GDP ratio to 69 percent by end-2020.
    - However, the recovery in 2021 has allowed a return to previous deficit levels, below 3% of GDP, while public debt is down 6.4pp from the previous year.
    - While debt is still at manageable levels, the country's debt trajectory is highly susceptible to adverse growth shocks.

Non-financial public sector fiscal balance (% of GDP)



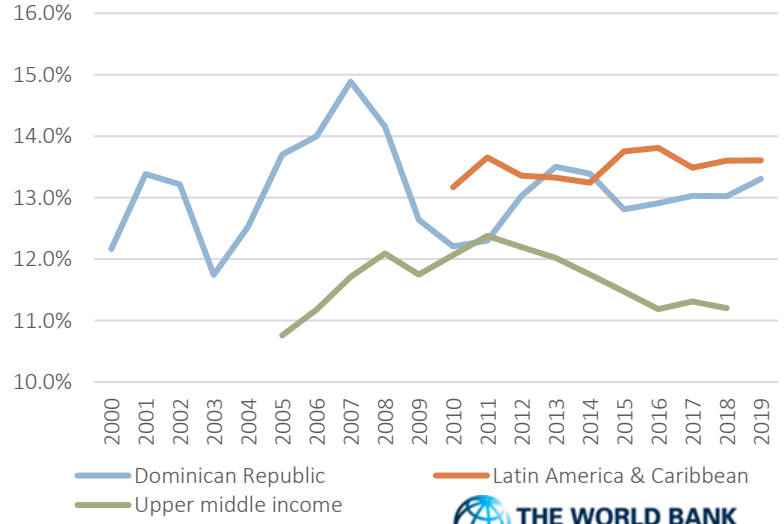
Source: Central Bank of the Dominican Republic

Consolidated public debt (% of GDP)



Source: General Directorate of Public Credit - Ministry of Finance of DR

Tax revenue (% of GDP)



Source: World Bank - WDI

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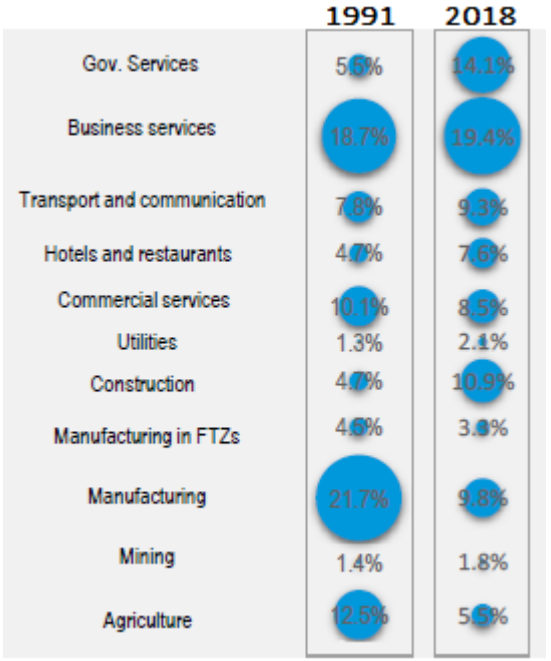
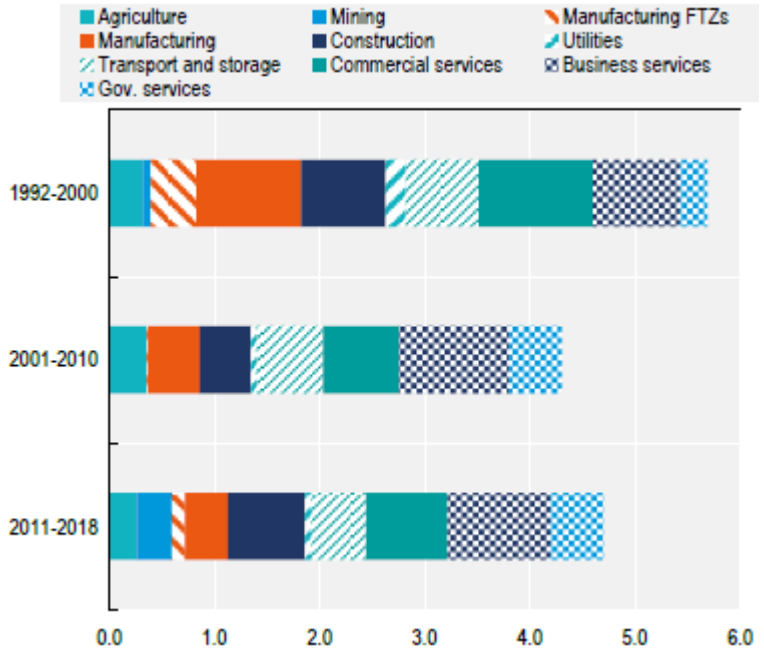
An economy that shifted from manufacturing to services and tourism, with investment as the main driver of growth.

- Since the 1990s, Dominican Republic has moved away from manufacturing as the main pillar of its economy.
  - Changes in global trade agreements made the initial specialization of the FTZs in textiles and garments less competitive. Over time, FTZs have diversified from mainly export-oriented manufacturing to also export-oriented services. This reconfiguration has contributed to reduced sourcing from local suppliers. Apparently, FTZs have not yet become a driver of local development
  - National development strategies increasingly favored growing activities as tourism; foreign investment shifted toward these activities.
- Investment and consumption have been the main drivers of growth. In particular, investment has been the fastest-growing component of growth since 1991, expanding annually at 8.8% and has contributed 32% of domestic GDP growth.
  - In part, investment was propelled by inflows of FDI, especially since the mid-1990s. Two policy factors that contributed to the sharp increase in FDI inflows were the structural reforms and stabilization policies of the 1990s and the explicit efforts to attract foreign investments.

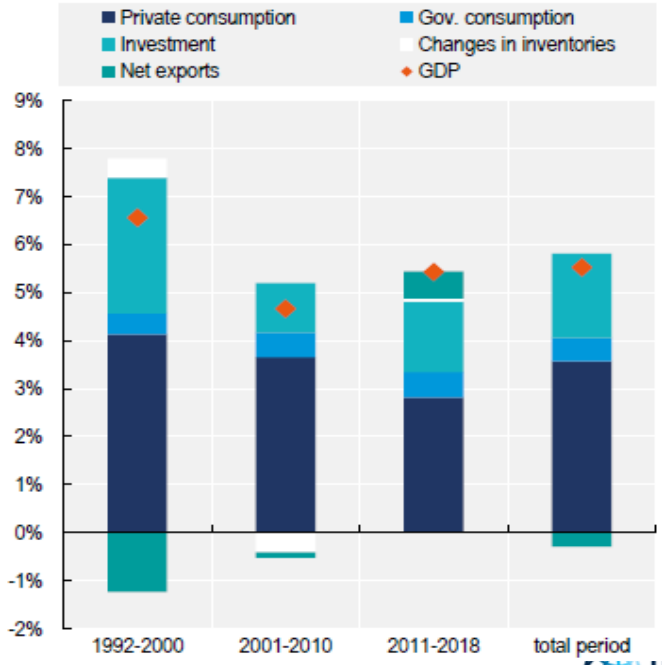
Composition of GDP by economic activity



Value added growth by economic activities



GDP growth by expenditure components



Source: OECD 2020 / WB 2018

Significant progress in the diversification of the productive and investment structure, but still lacks a sufficiently diverse and innovative base to build resilience to external shocks

Primary sector

- Occupies ~70% of land and remains important for income and food security. Production is essentially destined to meet domestic market demand.
- Has potential to reduce rural poverty; rural population linked to the sector accounts for 18% of the total.
- Main agricultural products: poultry, cattle, banana, rice, papaya, avocados, milk, sugarcane, and pineapples.
- Adverse effect of climate change: decline in yields, shorter crop cycles, increased pests and crop diseases, soil erosion and waterlogging of fields
  - The agricultural sector drives 60% of deforestation (especially on the border with Haiti)

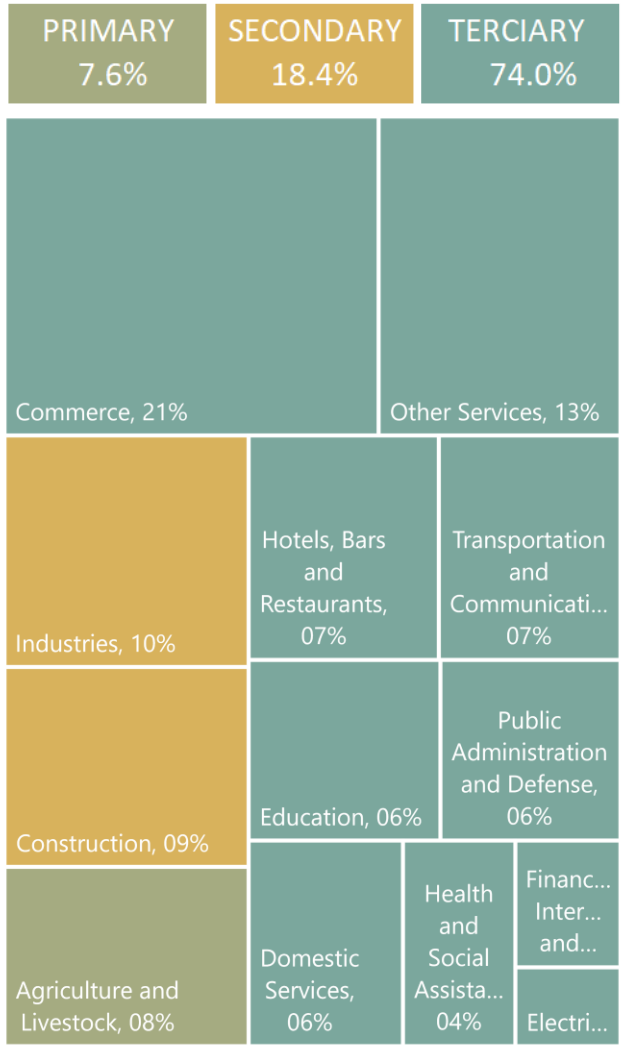
Secondary sector

- The industrial sector can be divided into two large groups in terms of regulations, management, location and target markets: the manufacturing sector in the FTZs, and the so-called "national" industry.
  - Foreign sales of FTZs make up 57% of total Dominican exports.
- The construction sector is very relevant to the national economy; it is one of the main recipients of FDI.
- The mining and quarrying subsector is also important; gold is the largest export product by value

Tertiary sector

- Has been the main driving force of GDP growth and employment
- In recent decades, tourism has become a key pillar of the Dominican development model, both from the point of view of production and employment, as well as the generation of foreign exchange through the double channel of direct investment to build the resorts and the current income brought in by visitors.
  - Much of the investments are in coastal areas, which are highly vulnerable to the effects of climate change

Employment by sector (4Q2021)



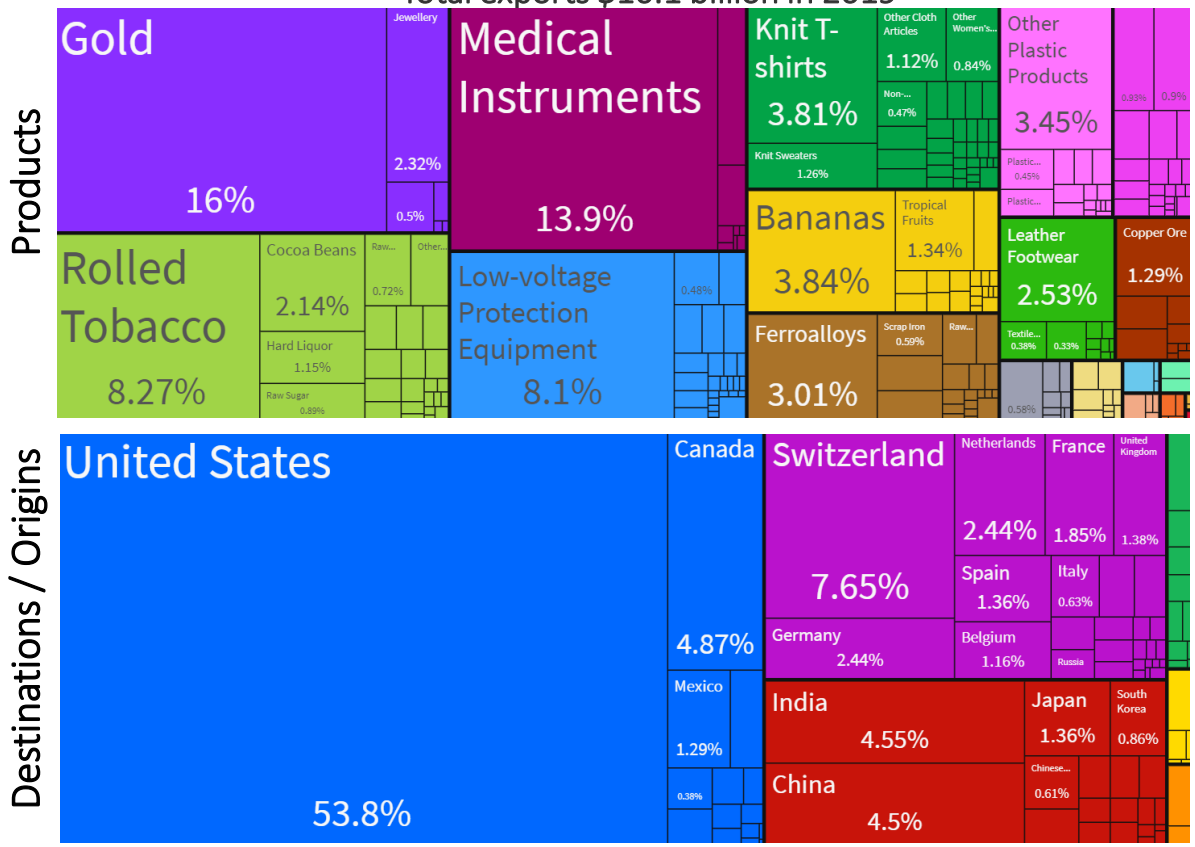
Source: Central Bank of the Dominican Republic

Source: OFECOM 2021; Dominican Republic SCD 2018; WDI; OEC; ILO.

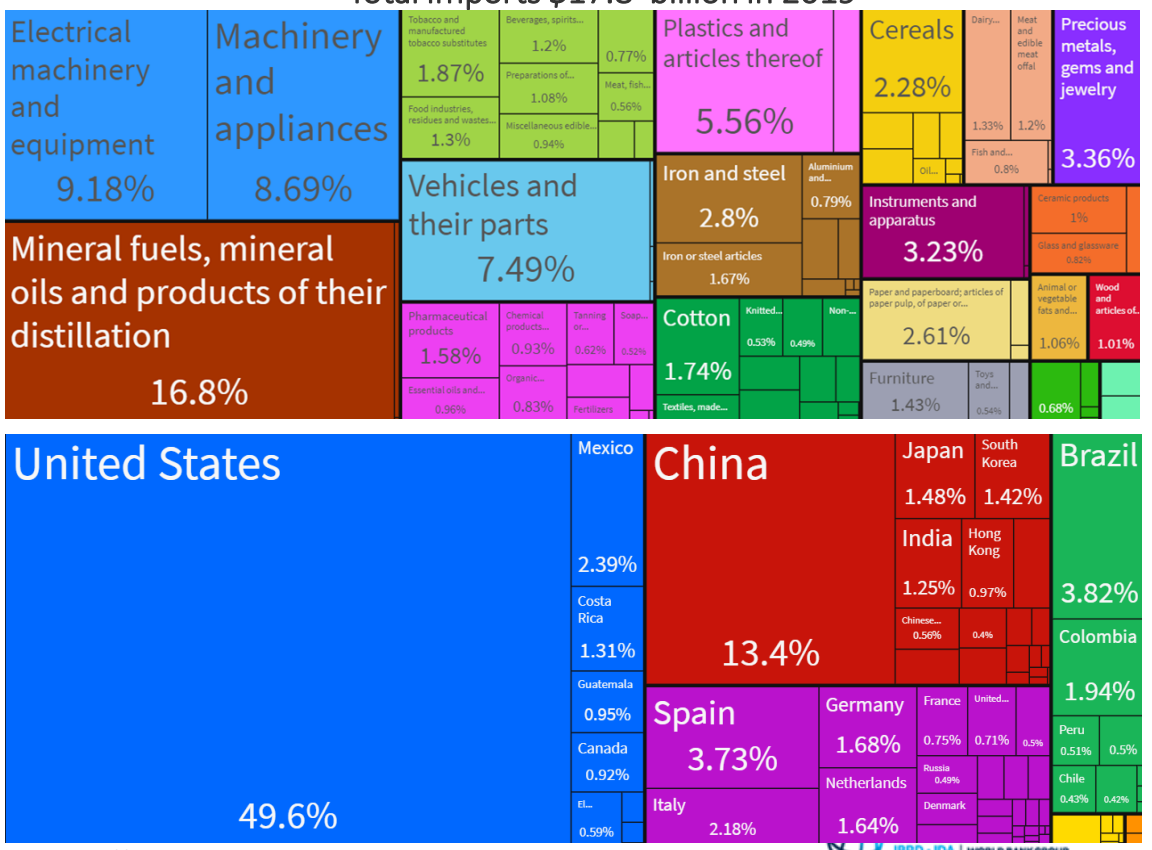
Increased diversification of the export basket over the last decades, but the largest contribution is coming from low/moderate complexity products

- DR is the 69th most complex country according to the Economic Complexity Index (up 5 positions from a decade ago). (HGL 2022)
  - Is less complex than expected for its income level
  - From 2000 to 2018, the number of exported products has tripled, shifting from labor intensive products to primary commodities that now account for more than 40% of total exports. (OECD 2020)
- Gold and medical instruments are the main export products. The largest imports sectors are mineral products and machines.
- United States account for most of Dominican Republic's trade flows, both for exports and imports, although its share has declined over time.

Total exports $10.1 billion in 2019



Total imports $17.8 billion in 2019

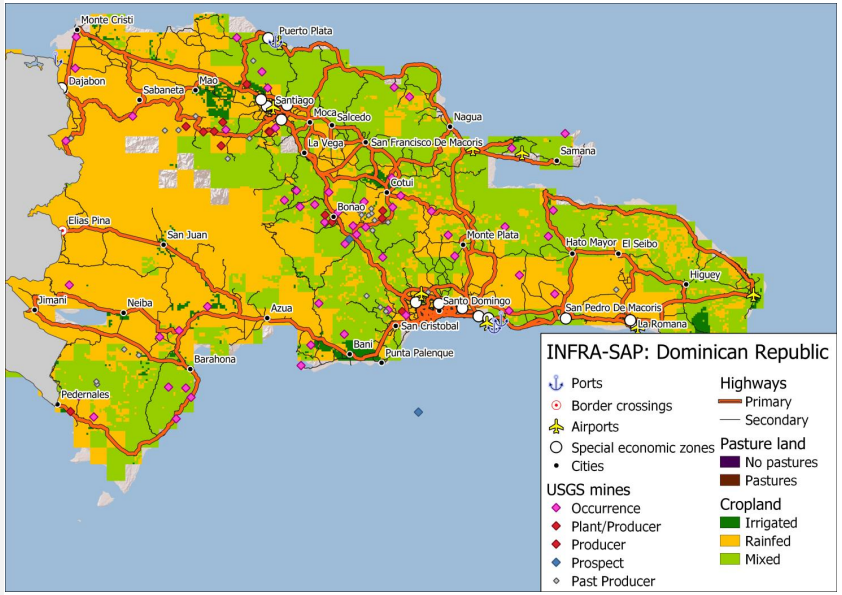


Source: UN COMTRADE, Visualization by https://oec.world;

Placing economic activity into a geographical context. Major territorial imbalances

- Cropland covers the entire territory. Mining is also present throughout the country, but especially in the central zone.
  - The Pueblo Viejo mine in the Sánchez Ramírez Province is largest gold mine in the Americas and third largest in the world.
- FTZs are highly concentrated around the two largest urban centers, Santo Domingo and Santiago.
- Tourist activity is also very focused. La Altagracia in the East and Puerto Plata in the North, concentrate more than 75% of the supply of rooms in tourist accommodations. (National Statistical Office of the Dominican Republic)
- A heterogeneous distribution of formal companies across the country as a correlation of an uneven distribution of economic activity.
  - While in the provinces with large cities and major tourist centers there is one company for every 50 inhabitants, in the Southern border provinces there is one company for every 700 inhabitants.

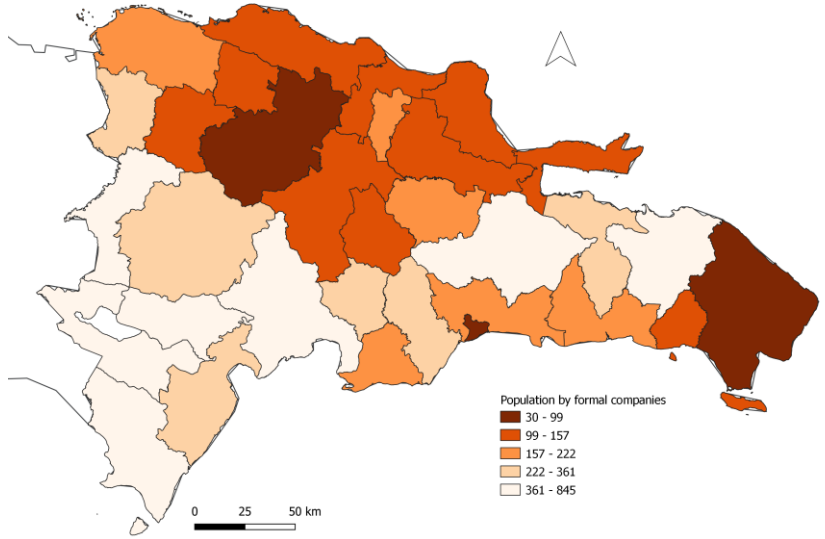
Cropland and mines



Location of free trade zones

Source: Consejo Nacional de Zonas Francas de Exportación

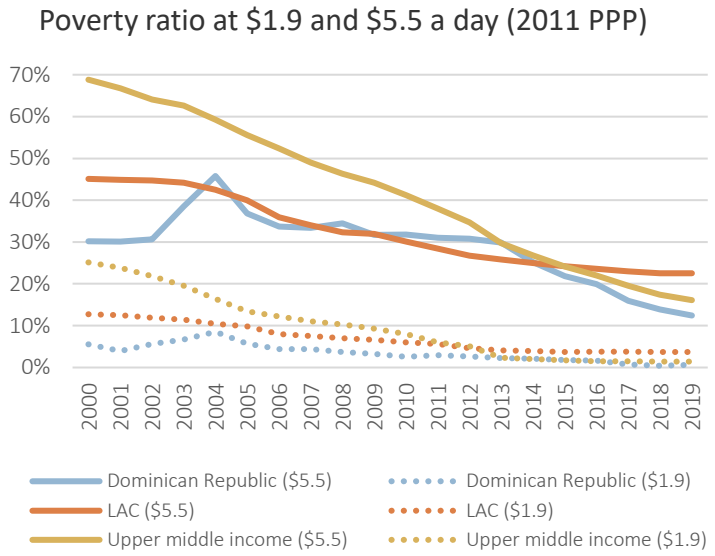
Population by formal companies 2020

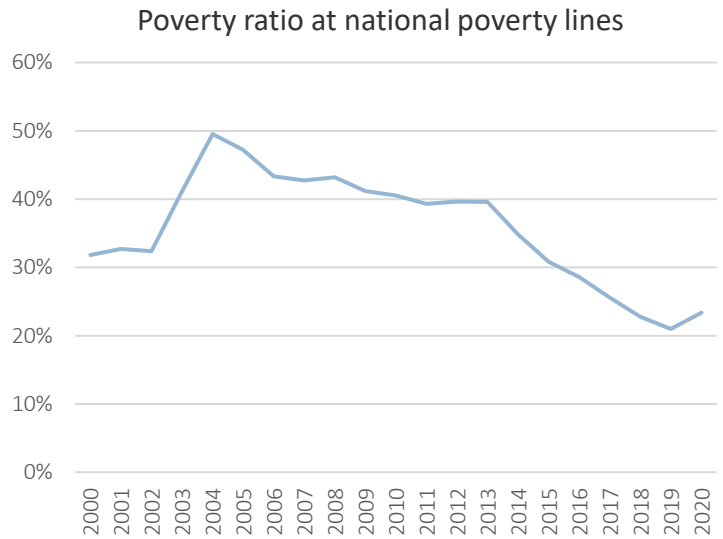


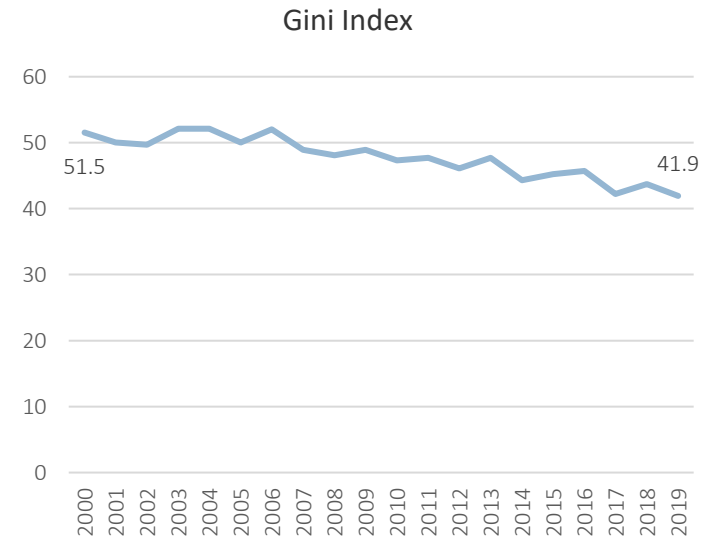
Source: based on National Statistical Office of the Dominican Republic

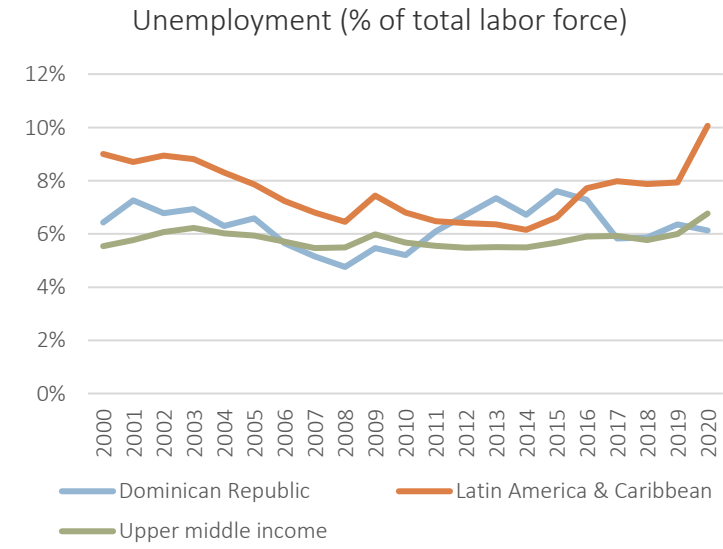
Good performance of the main social indicators: sustained reduction of poverty and inequality, and low unemployment….

- **Economic growth in the DR has substantially reduced poverty rates and supported the expansion of the middle class.**
  - Over the last 20 years, the poverty rate, set at $1.9 a day, dropped from a peak of 8.5% in 2004 to 0.6% in 2019; and from 46% to 12% if set at $5.5 a day. In both cases, the values are much lower than the averages for LAC and upper middle-income countries.
    - Despite the increase in social spending to mitigate the impact of the pandemic, official estimates indicate that poverty grew by 2.4 percentage points to 23.4 percent in 2020.
  - Unemployment has been relatively low during the 2000s, always below 8%, generally better than the LAC average and in line with upper middle-income countries.
    - By the end of 2020, 272,000 jobs were lost relative to 2019, with a very negative impact on poor households, women and informal workers.
  - It also shows a positive path with respect to equality. The Gini index decreased from 51.5 in the beginning of the 2000s to less than 42 in 2019. This puts DR among the least unequal countries in LAC.





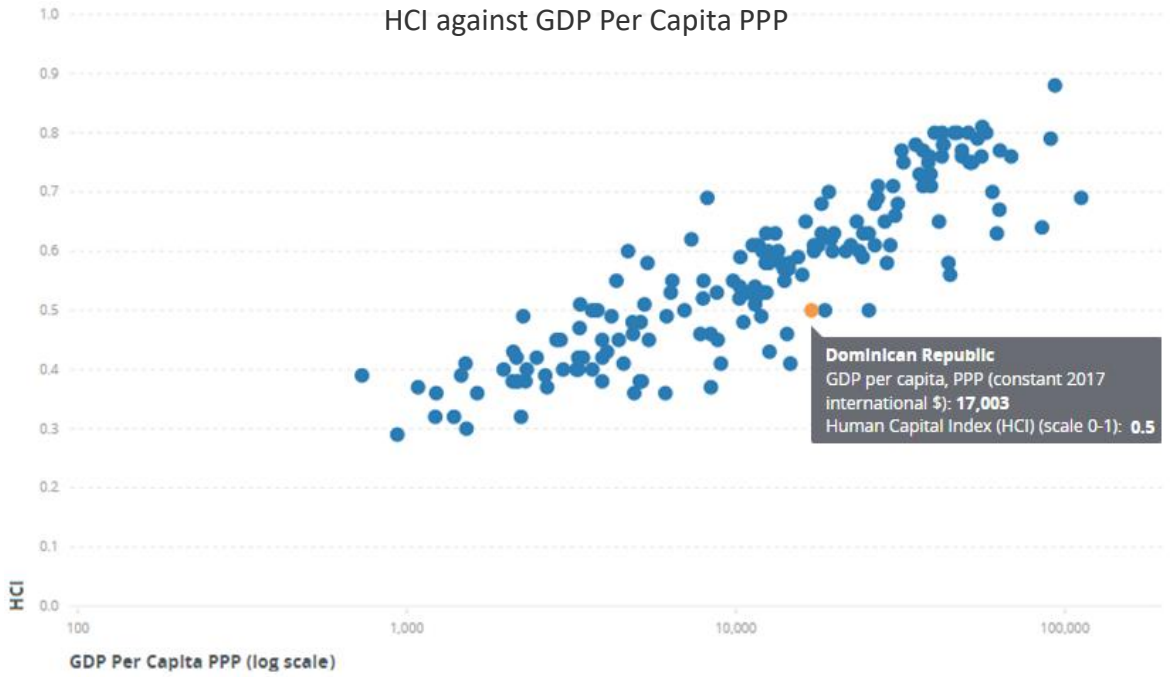




Source: World Bank – WDI; National Statistical Office of the Dominican Republic

…however, under-performs on human capital measures

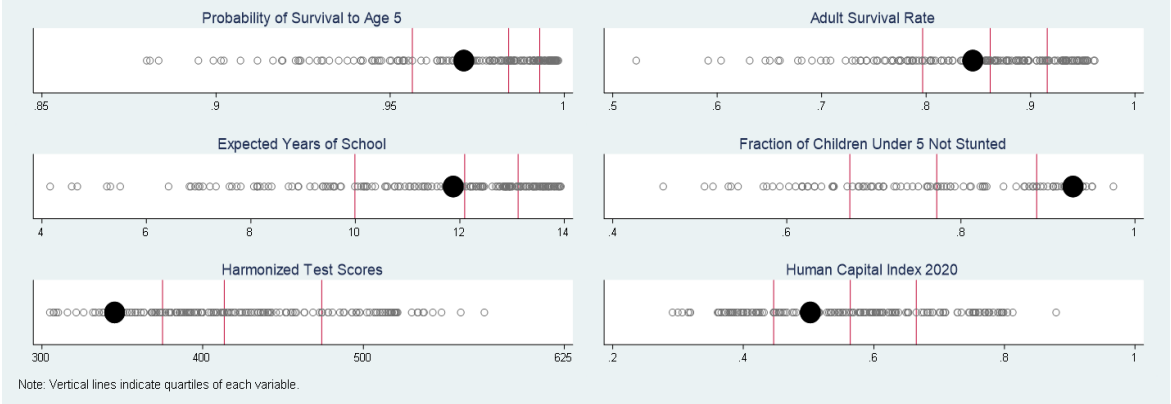
- **Low Human Capital Index (HCI) relative to GDP per capita.**
  - Shortfalls in health and education among children today translates into relatively low productivity of the next generation of workers.
  - The aforementioned low level of public spending helps explain why, while the Dominican economy grew at one of the highest average rates in the region, the country's overall quality of life indexes progressed at a much slower pace. (Zaltsman, A. & Zentner, J. 2021)
- **Lacking adequately prepared workers constrains the growth potential of large exporting firms**
  - Need for development of technical and vocational skills
  - Inadequately prepared labor force is perceived as major business constraint by 31 percent of firms (WBES 2016)
- **HCI 2020 results indicate that the DR lags behind the averages of LAC and UMI countries in practically all components of the index.**
- **The ratio in HCI between the richest and poorest 20 percent of the population in the DR is 1.25, below global average of 1.35.**



HCI 2020 and Components: Regional and Income Group Benchmark

Indicator	DR	LAC	UMI
HCI Component 1: Survival			
Probability of Survival to Age 5	0,971	0,982	0,983
HCI Component 2: School			
Expected Years of School	11,9	12,1	11,8
Harmonized Test Scores	345	405	411
HCI Component 3: Health			
Survival Rate from Age 15 to 60	0,845	0,862	0,856
Fraction of Children Under 5 Not Stunted	0,929	0,852	0,867
Human Capital Index (HCI) 2020	**0,50**	**0,56**	**0,56**

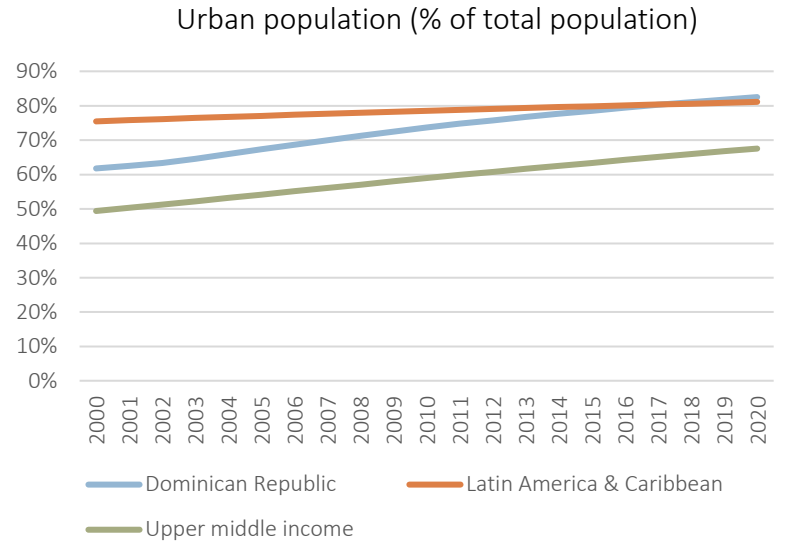
HCI and Components: Distribution between Countries
Black dot = Dominican Republic



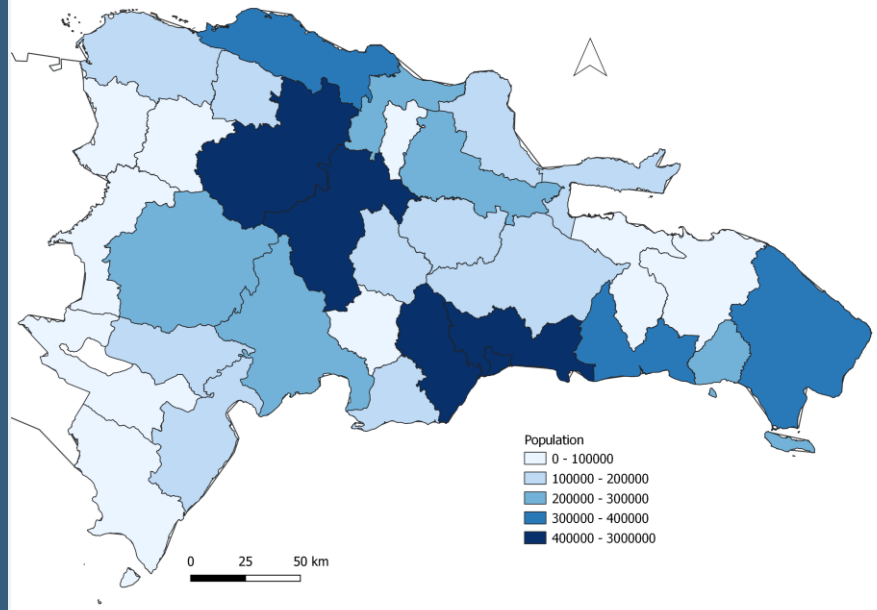
Source: World Bank - Human Capital Project

Placing people into a geographical context. High concentration of the population with large density gaps in a context of sustained urbanization.

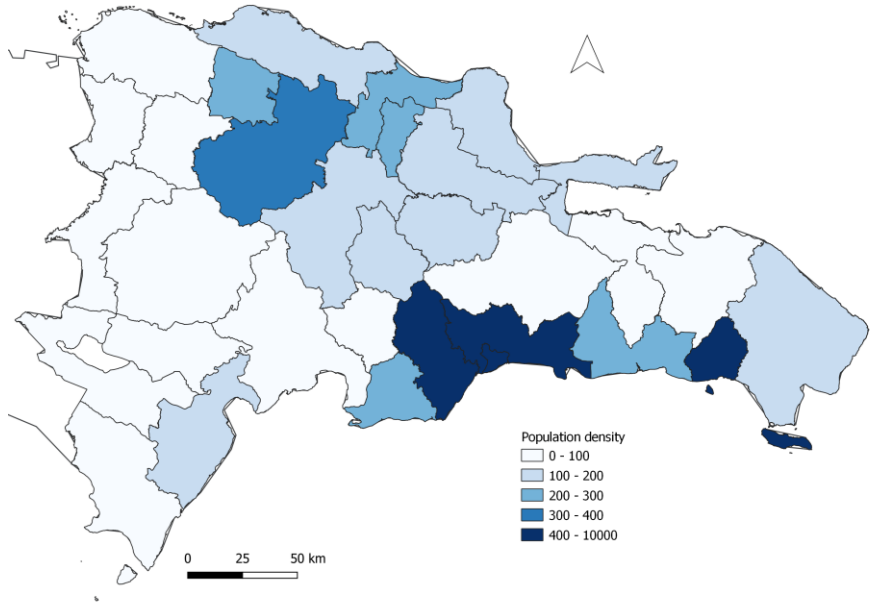
- Total population of 10.8 million inhabitants; the provinces of Santo Domingo, Santiago and the National District account for almost half.
  - Almost 15% of the population lives in slums
- Sustained urbanization process over the last 2 decades.
  - The urban population increased from 62% to 83% between 2000 and 2020, surpassing the averages of LAC countries.
  - This changes can drive new demands and impose challenges on the infrastructure.
- Projections for 2030 point to an additional 800,000 people living in the country, 87% residing in urban areas.



Population 2020



Population density 2020



Select Indicators (2020 unless indicated)	
Land area (sq. km)	48,310
Rural land area (% land area) year 2010	88.6%
Population, total	10,847,904
Rural population (% of total population)	17.5%
Population in the largest city (% of urban population)	37.0%
Population living in slums (% of urban population) year 2018	14.8%

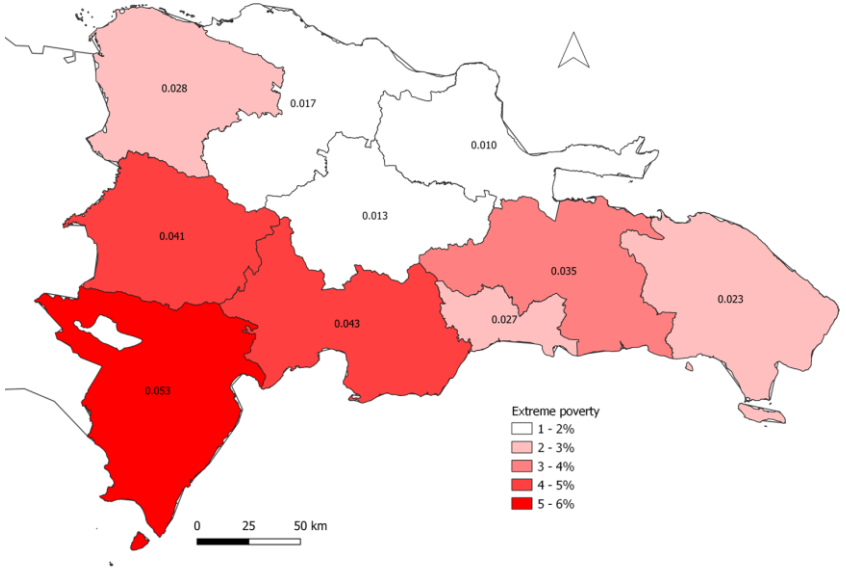
Source: World Bank - WDI

Source: based on National Statistical Office of the Dominican Republic

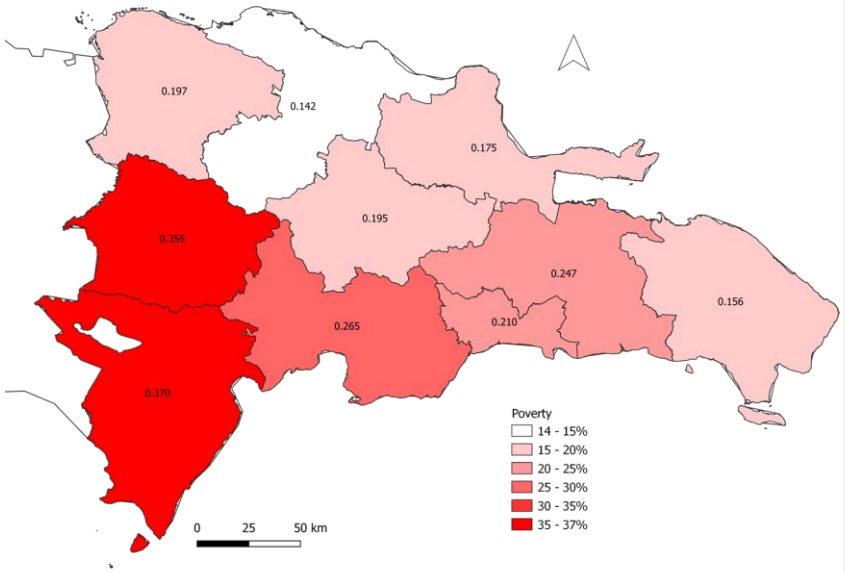
Living conditions differ across the country

- Despite the positive trend in most social indicators over these last decades, significant disparities persist between the different areas of the country.
- Poverty hits much harder in the Southwestern part of the country, particularly in the border regions of Enriquillo and El Valle.
  - Overall poverty exceeded 35% in those regions (2019 data), while it was below 20% in the northern and eastern regions of the country.
- The Human Development Index (HDI) shows similar patterns
  - The National District and some central provinces rank at the top, while the Central and Southern border areas are the worst performers.
  - Inequality-adjusted HDI captures the losses in human development potential associated with inequality. Data from 2013 show that these losses are greater in the provinces with higher HDI. (PNUD 2013)

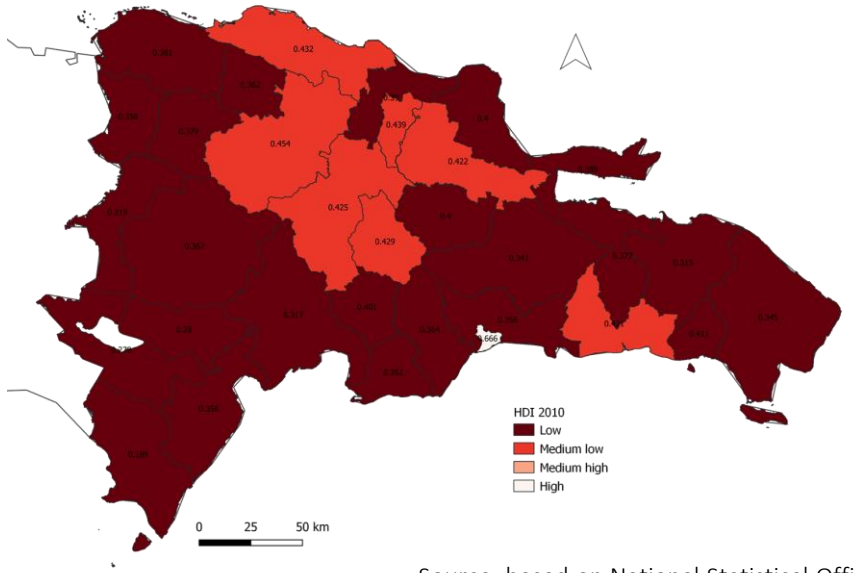
Exteme poverty 2019



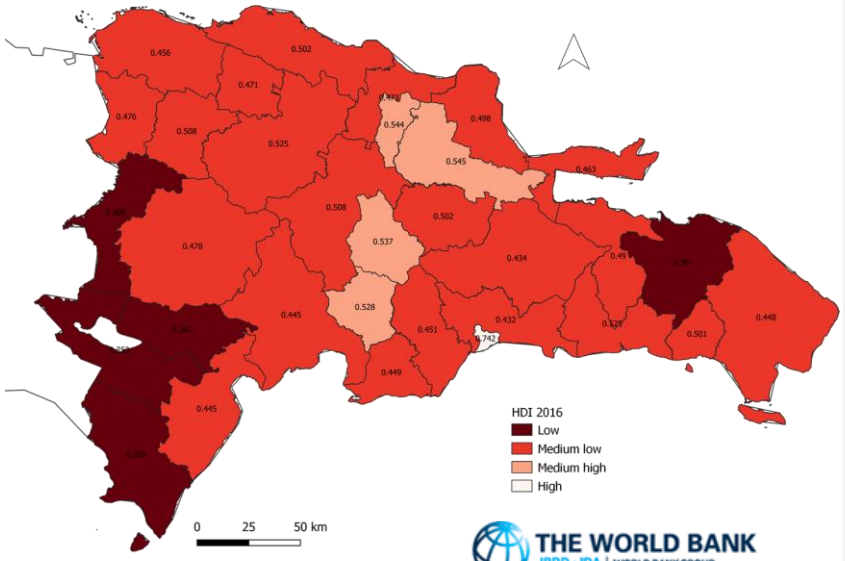
General poverty 2019



Human Development Index 2010



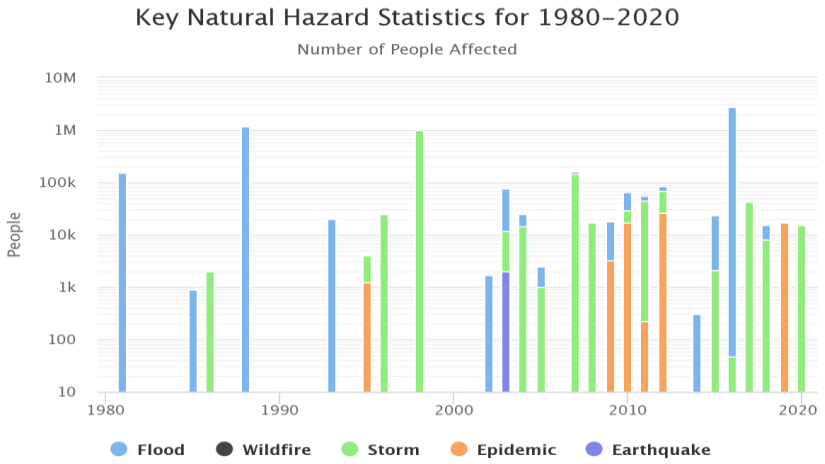
Human Development Index 2016



Source: based on National Statistical Office of the Dominican Republic & PNUD 2019

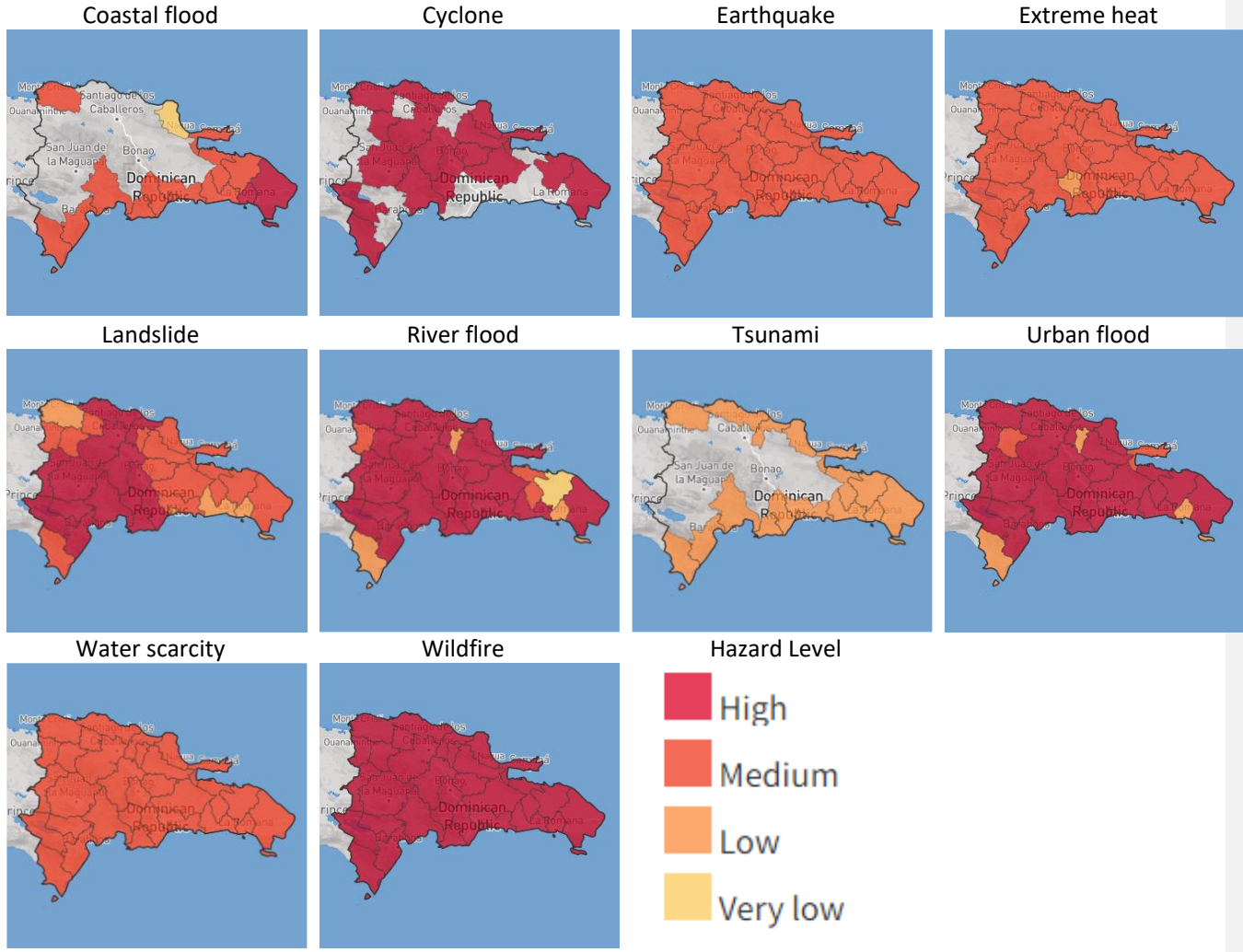
Dominican Republic is highly exposed to several natural disasters, which pose a great threat under a changing climate context

- The country is highly exposed to rapid climate-related events (tropical storms, hurricanes, cyclones, drought, floods and landslides), climate change impacts (sea-level rise and desertification), and earthquakes.
- Vulnerability is exacerbated by rapid urbanization, limited territorial and urban planning, and poor natural resource management.
- Ranked 10th worldwide in terms of human and economic losses suffered from weather-related events between 1997-2016 (Eckstein, D. et al 2017)
- Disaster losses have been estimated at US$ 420 million (0.69% of GDP) per year over the 1961-2014 period. (IBRD 2015)
  - Half of the direct and indirect economic losses are concentrated in the agriculture (32% of the losses) and transport sectors (18%).
- The frequency of disaster events has increased significantly in the last 5 decades, shifting from one event every two years on average in the 1960s, to 2.6 events per year in the 2000s. (WB 2018)



Source: WB Climate Change Knowledge Portal

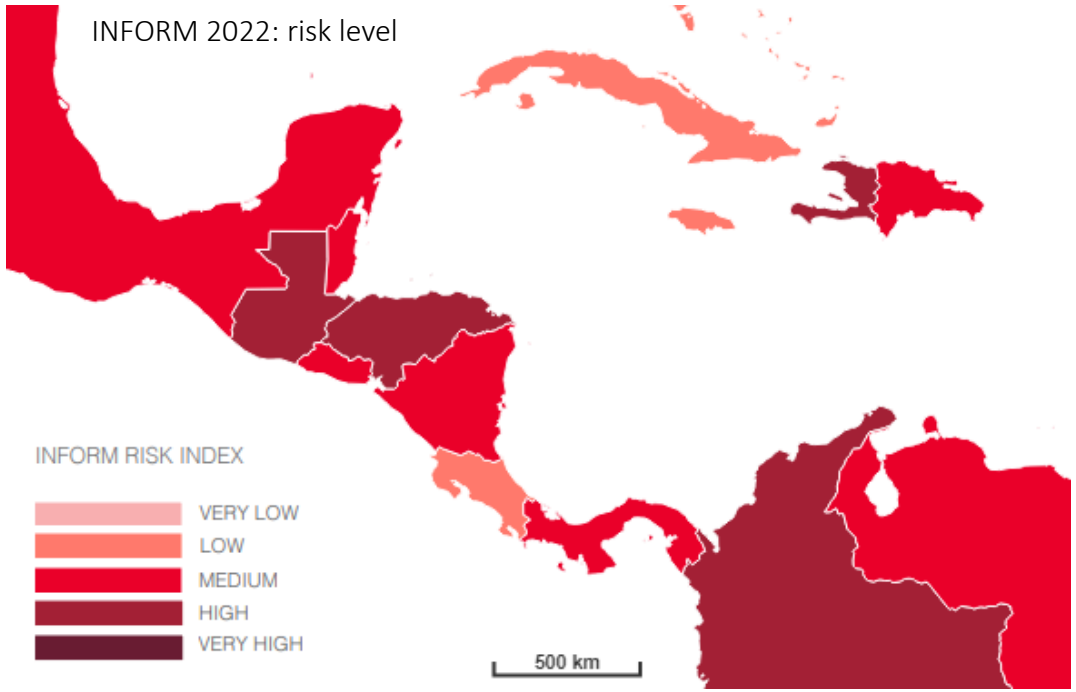
Provincial hazard level by event type



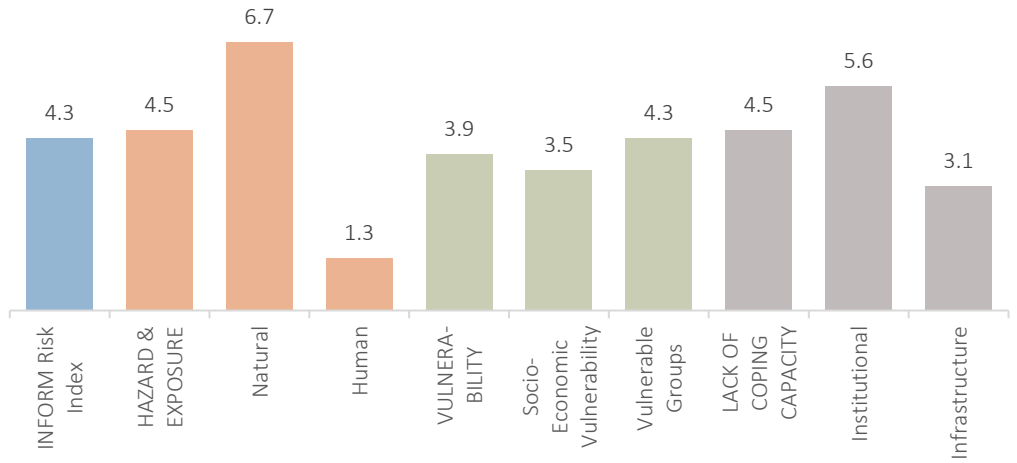
Source: GFDRR. 2020

Very high vulnerability to natural hazards enhanced by a lack coping capacity

- In the 2022s edition of the INFORM Risk Index (a global risk assessment for humanitarian crises and disasters), Dominican Republic obtained a score of 4,3 out of 10 (with 10 being the worst result), considered to be of “medium risk,” which places it in rank 73 out of 191, better than many regional, but behind its structural and aspirational peers.
  - Although it registers a medium score in the vulnerability of the population pillar, the very high exposure to natural hazards is enhanced by a high lack of coping capacity.
  - The greatest deficiencies come on the governance and DRR side, and also in infrastructure where it performs below its comparator peers.

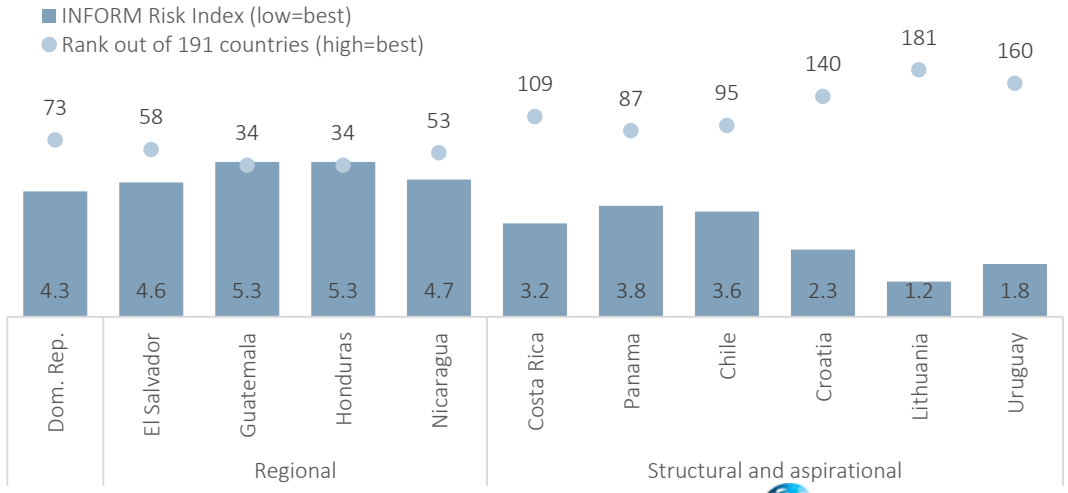


Dominican Republic INFORM Risk Index 2022 by components



Source: INFORM 2022

INFORM Risk Index 2022



Source: INFORM 2022

What is Dominican Republic doing regarding climate change adaptation?...

Dominican Republic defined in its NDC 2020 the priorities in terms of climate change adaptation, through 37 measures distributed in the sectors of water security, food security, health, resilient cities (infrastructure, human settlements), coastal-marine resources, tourism and ecosystems, biodiversity and forests.

- An investment of USD 8.7 billion is estimated, of which 36% is mainly directed to bridge and road infrastructure.

Among the various instruments developed in recent years, the country has its National Adaptation Plan for Climate Change in the Dominican Republic 2015-2030 (PNACC-DR).

- The Plan is an update of the previous NAPA (2008) and defines two main objectives: reduce vulnerability to climate change impacts through adaptation and resilience; and integrate climate change adaptation in a cross-cutting manner in all policies and sectors.

Also noteworthy is the progress made in terms of risk and disaster management policy, which was consolidated with Law 147-02. From there, plans and guidelines have been developed, platforms have been established and strengthened, and criteria for disaster risk reduction have been incorporated into national planning.

- Some of the interventions carried out include: 1) Formulation of the National Risk Management Plan; 2) Implementation of the National Fund for Disaster Prevention, Mitigation and Response; 3) Creation of risk management units in institutions and municipalities; 4) Implementation of a coordination mechanism among the members of the national system at both the sectoral and territorial levels; 5) Relocation projects for populations in vulnerable conditions; 6) Establishment of criteria for the formulation of public investment; 7) Integration of the principles of disaster risk reduction in agricultural policy and municipal development projects.

Despite the progress made, there is a set of barriers that limit the implementation of priority measures:

- Institutional: there are problems in defining functions due to lack of legal framework or institutional deficiencies.
- Technological: it is essential to make a technology transition to achieve many of the adaptation measures.
- Financial: there is a lack of financial sustainability of institutions and projects for implementing adaptation measures, which limits the continuity of these actions, in addition to the need for financial leverage to make a change in technology.

Source: Gobierno de la República Dominicana 2020 / Fundación PLENITUD 2016 / Ministerio de Hacienda 2021 / UNFCCC 2021

...and in terms of decarbonization?

GHG emissions are on the rise, reaching a total of 35.4 MtCO2eq in 2015 (19% more than in 2010). Transport accounts for 21.6%.

Dominican Republic committed in its NDC 2020 to a 27% reduction of GHG emissions by 2030 with respect to the BAU scenario (approx. 14 MtCO2eq).

To this end, 46 mitigation options are contemplated, with an estimated investment requirement of USD 8.92 billion: 27 correspond to the energy sector (focused on electricity generation, energy efficiency and road transportation), 4 to the IPPU sector, 10 to the AFOLU sectors and 5 to the waste sector.

The country also has several policy instruments to achieve the NDC objectives: the National Development Strategy 2030, the Climate Change Compatible Economic Plan (DECCC Plan), and the NDC Action Plan.

Transport mitigation options included in NDC 2020

Most of the transport sector mitigation measures are linked to the electrification of the vehicle fleet and the impulse to public transport in urban areas.

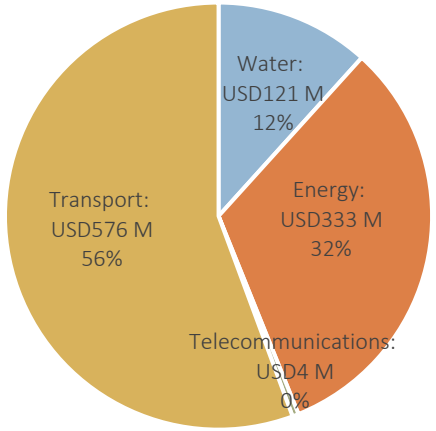
- New and additional lines in the Santo Domingo Metro.
- New cable car line.
- Creation and adaptation of the BRT system in large cities (Santo Domingo and Santiago de los Caballeros).
- Renewal of the diesel bus fleet for electric units.
- Definition and application of a policy for the renewal of cabs and *conchos*. Modernization of the public vehicle fleet with electric and hybrid units.
- Design and implementation of a feeder bus network to complement mass transit and the main bus network. New gas-powered units.
- Adaptation of a safe and efficient school transport service with electric buses.
- Introduction of enabling frameworks for the modernization of the private vehicle fleet (replacement by hybrid and electric vehicles).
- Adequacy of a network of bicycle lanes in large cities.
- Creation of express bus lines for large cities (express lanes).
- Implementation of the technical inspection program for all vehicles in circulation.

The digital sector implicitly plays a cross-cutting role in the fulfillment of most measures included in the NDC

Source: Gobierno de la República Dominicana 2020 / MIMARENA, CNCC & PNUD 2020

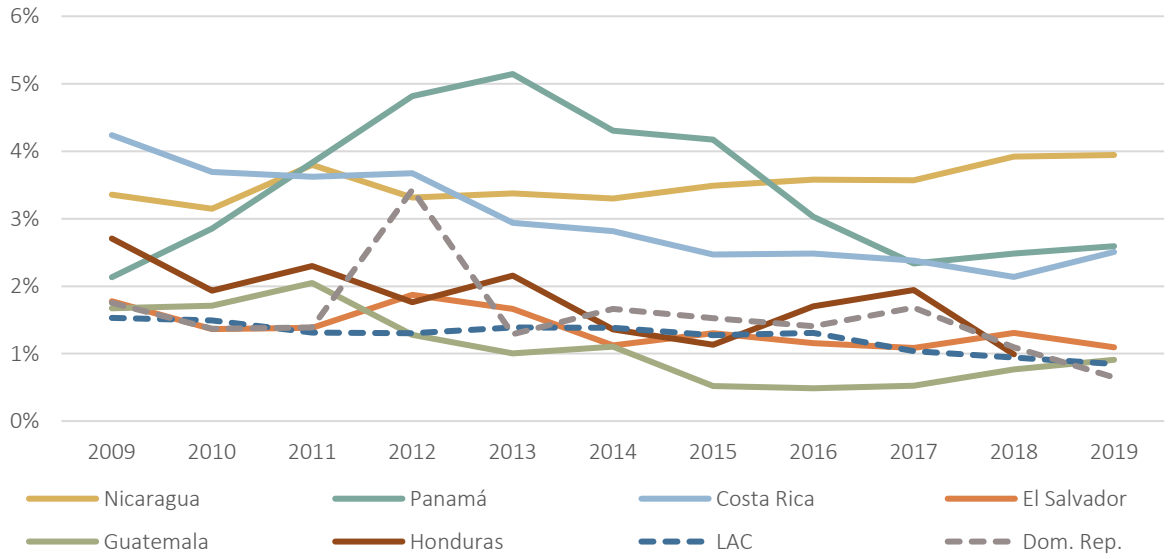
Low public investment in infrastructure relative to GDP, in line with LAC average. Decreasing trend in the transport sector.

- Public investment in infrastructure oscillated around 1.6% of GDP on average in the last decade. The lowest value in the series was recorded in 2019: 0.65% of GDP, a 40% drop from the previous year.
- In the aggregate, Dominican Republic ranges around the LAC average, below most regional countries and quite far from the best performers (Panama, Costa Rica and Nicaragua).
- Among the 4 sectors considered (transport, energy, water and telecommunications), transport has been the main destination of investment, with an average of 56% of resources between 2009 and 2019. However, its share has been declining in last years, as the share of energy has increased.

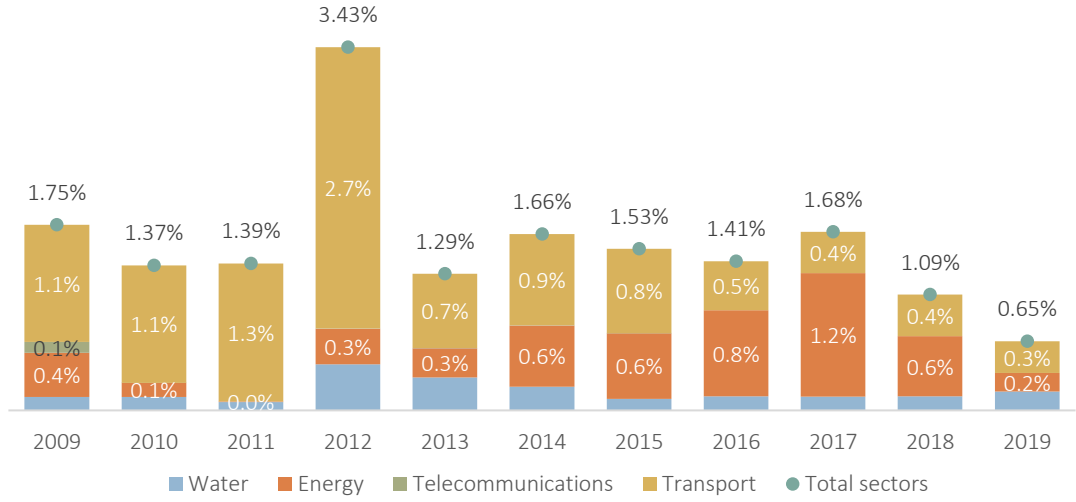


Dominican Republic: Public investment in infrastructure by sector Annual average 2009-2019 (USD millions and %)

Public Investment in Infrastructure in selected LAC countries (% of GDP)



Dominican Republic : Public Investment in Infrastructure by sector (% of GDP)



Source: INFRALATAM. 2021

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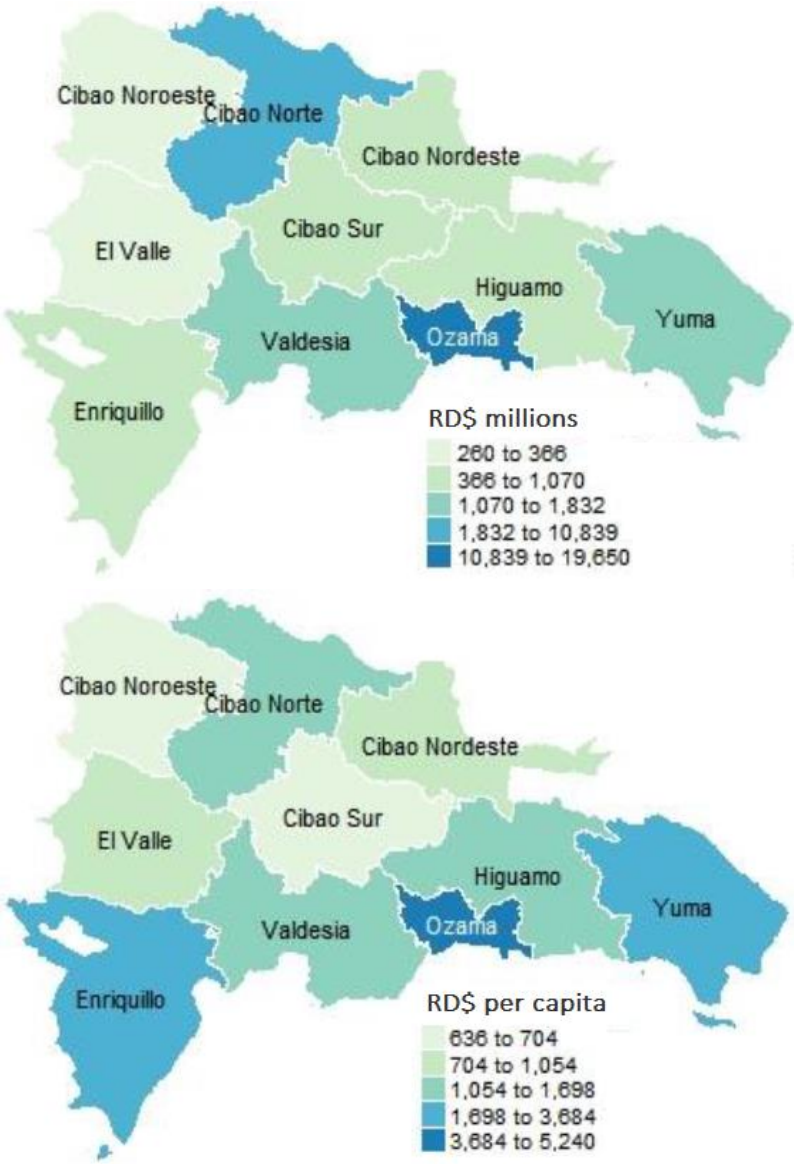
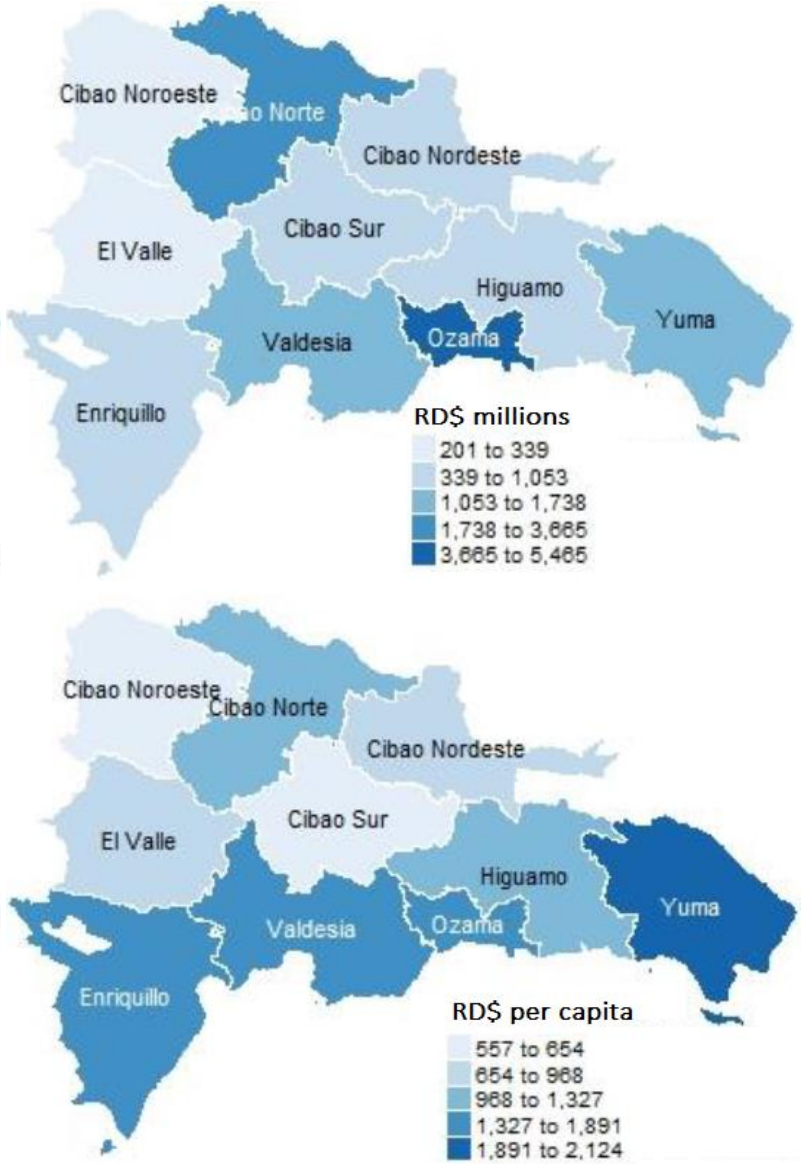
Public investment from a territorial approach

- Average public investment in economic services (transportation, energy, irrigation, agriculture) was around RD$34 billion between 2014 and 2018, equivalent to 42.0% of total capital spending, 7.2% of total public spending and 1.2% of GDP. This results in an annual per capita expenditure at the national level of almost RD$3,400.
  - More than half of the territorialized capital expenditure on economic services was concentrated in the Ozama region (66.4%).
- The transportation sub-function was the main recipient of investment in economic services and the second in total investment.
  - The regions of Ozama (42.3%) and Cibao Norte (13.9%) were the largest recipients.
- However, when analyzed on a per capita basis, the gap with the most socially vulnerable regions (El Valle, Enriquillo and Valdesia) is reduced.

Territorial distribution of capital spending on economic services. Total and per capita (2014-2018 average)



Territorial distribution of capital spending on transport. Total and per capita (2014-2018 average)



Source: Dishmey, Y.C.M. 2020

Meeting the SDGs: what is the infrastructure gap?

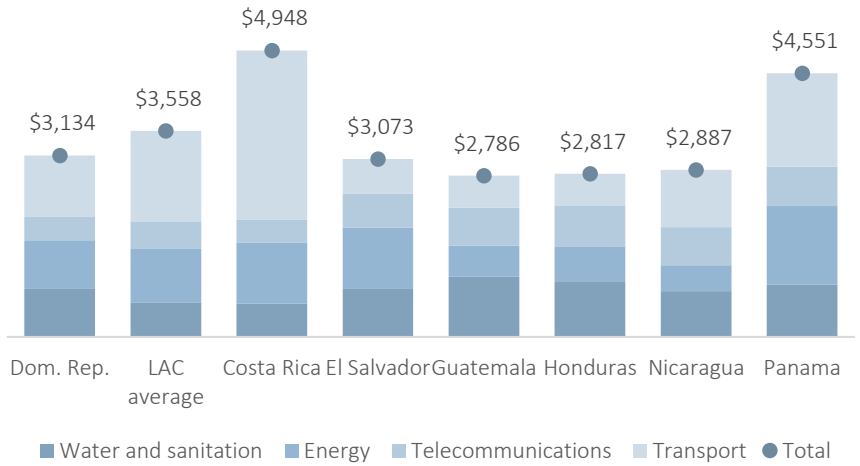
- According to the IDB (Brichetti, J.P. et al. 2021), closing the infrastructure gap in LAC to meet SDGs* will require to increase investment in the water and sanitation, energy, transport and telecommunications sectors, from the current 1.8% of GDP (2008-2018 average) to 3.12% of GDP. This translates into USD 2,220 billion by 2030.
- Dominican Republic's needs reach USD 32.2 billion, with transport as the most demanding sector (34% of the total), and telecommunications accounting for 13%.
  - This is just over US$3,100 per capita, below the average of the 26 LAC countries considered.
  - Total investment reaches 36% in terms of 2019 GDP, also lower than the LAC average.

Investment needed by 2030 (in USD million)

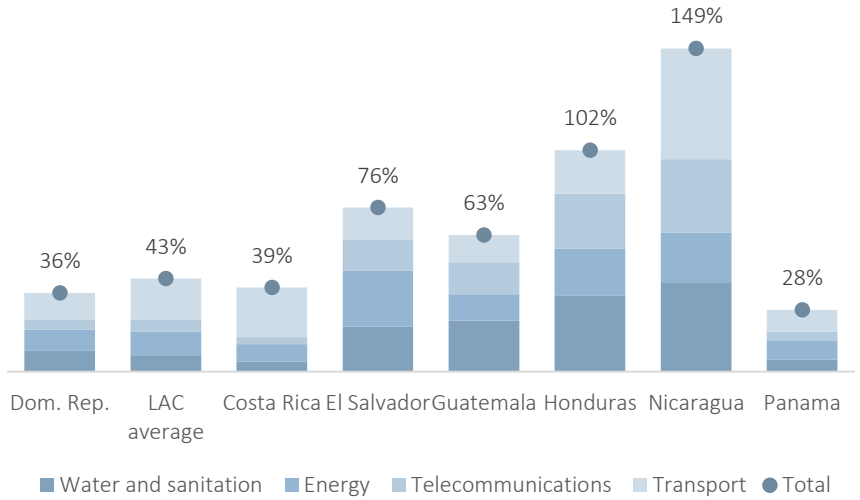
		Dominican Republic		LAC	
Sector		$	%	$	%
Water and sanitation		8,538	27%	373,890	17%
Energy	Access to electricity	1,478	5%	89,538	4%
	Generation and transmission	7,149	22%	487,545	22%
Telecommunications	Broadband + 4G access	4,130	13%	293,675	13%
Transport	Roads	6,351	20%	738,512	33%
	Airports	70	0%	15,200	1%
	Urban transport (BRT)	4,459	14%	222,376	10%
Total		32,175	100%	2,220,736	100%

Source: Brichetti, J.P. et al. 2021

Investment needed by 2030 (in USD per capita)



Investment needed by 2030 (% of 2019 GDP)



Source: Brichetti, J.P. et al. 2021

*Includes goals 6: Clean water and sanitation, 7: Affordable and clean energy, 9: Industry, innovation and infrastructure, and 11: Sustainable cities and communities

How can infrastructure support the development of key economic sectors and the achievement of key social goals?

Improving public infrastructure and related services is fundamental on the path to a sustainable development scheme

- Economic infrastructure plays a vital role in supporting the development of Dominican Republic's key economic sectors, providing social services, developing human capital, reducing geographic disparities, mobilizing climate action, and creating an enabling environment for business and investment.
- Investment in infrastructure has the potential to achieve particularly large benefits in Dominican Republic, given the gap between what exists and what is needed.
- The goal is not only to increase the capital stock, but also to improve the quality of the services provided.

- Transport is key to reduce territorial imbalances, increasing connectivity and competitiveness in more isolated areas.
- It is also central in the path towards sustainable urban centers.
- A reliable system is fundamental to sustain the most relevant sectors of the economy (e.g. tourism).

- Digitalization can help close human development gaps by increasing the quality of the education, health and social security system.
- It is one of the essential supports of the main economic sectors (e.g. services and tourism).
- It is also relevant to climate change adaptation policies.

Infrastructure design and operation should be based on resilience and sustainability criteria, including a DRM approach.

A challenging context that demands action

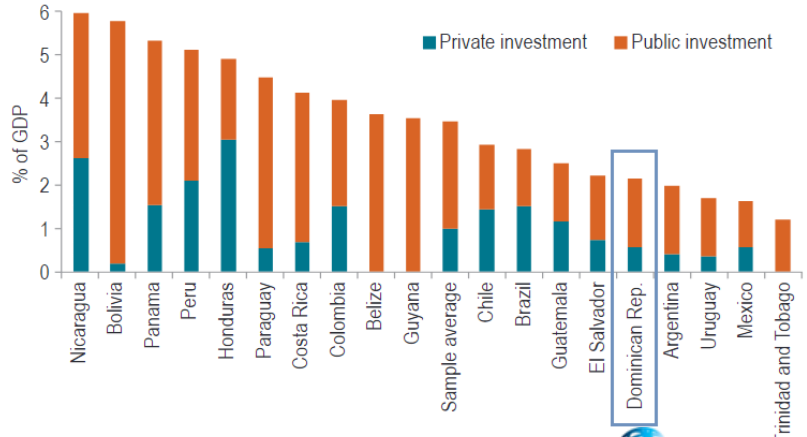
With a growing demand for infrastructure, Dominican Republic must step up its game.

- The goal is to achieve an adequate level of investment -both in terms of quantity and quality-, while ensuring efficient institutional management, considering all non-financial factors -technical, institutional, legal, etc.- that affect the execution and maintenance of works, and the provision of associated services.

Prospects for significant growth in public investment are limited due to fiscal constraints and the low priority given to infrastructure over other spending demands.

- However, beyond increasing resources, there is room for improving the efficiency of infrastructure investment, i.e. "spend better". Sources of potential efficiency gains come from improved project planning and selection, optimization of construction costs and schedules, and better allocation of investment between new infrastructure and maintenance of existing one.
- In addition, the private sector could have a key role to play. In LAC, private investment in infrastructure represents approximately one third of the total, but in the Dominican Republic it is just around a quarter. Conditions must be created to attract more private investment -or commercial finance- where it makes economic sense: that is, in projects with high social rates of return and where the private sector can generate innovation by providing better quality services more efficiently.

Public and private investment in infrastructure (2008-2015 average)



Source: Izquierdo, A.; Pessino, C. & Vuletin, G. 2018

Transport

Is the transport delivering in Dominican Republic?

This section covers the following issues

1. Overview of the transport sector in Dominican Republic
2. Governance, funding, financing and private sector participation in the transport sector
3. Recommendations

Overview of the transport sector

Some Transport Key Findings

The creation of INTRANT (Instituto Nacional de Tránsito y Transporte Terrestre) in 2017 was fundamental to prioritize land transport. Institutional coordination and clear lines of authority are still needed between INTRANT, the Ministry of Public Works and Communications and the Office for the Development of Mobility projects.

Urban Mobility

- The new Office for Mobility Projects, under the Ministry of the Presidency is accelerating the implementation of priority projects, however rail projects such as the Monorail in Santiago and the Metropolitan Train lack studies that support those projects over other options in terms of transport capacity, urban impact and financial burden and their operational sustainability.
- The transformation of the Conchos (informal or self-organized public transport operators) into bus companies per bus corridor has been successful, however there is a need for a program to scrap old vehicles and enforce road-worthiness standards to secure emissions and safety benefits.
- Transforming Concho owners into companies in additional bus corridors will be more difficult and additional support is needed.
- The BRT project in Independencia-Luperón should have high demand but is not moving as fast as the expansion of the metro. This BRT corridor will improve public transport, however it has not been prioritized.
- Santo Domingo and other cities should move forward with a comprehensive Non-Motorized Transport agenda. Most of the people biking and walking are tourists but it is very unsafe as the infrastructure is poor or inexistent. There is a lack of signaling for pedestrian crossings.
- Support is needed for the implementation of e-buses, including bus depots, charging facilities and capacity of the electrical grid. There is interest in procuring and operating e-buses in DR but the business model is still unclear. The priority of INTRANT is to transform the bus corridors first, then it will introduce e-buses
- Congestion is increasing despite new investments in public transport. Travel Demand Management (TDM) measures including increasing parking fees, on-street parking management and control, and congestion charging should be considered.
- There is no institutional link between land use and urban transport planning. There is potential for Transit Oriented Development, however there is no entity looking into this nor coordination between ministries or levels of government.

Road Safety

- Road Safety is a major concern in the Dominican Republic. INTRANT is working on the right direction and the National Road Safety Plan is an important step towards reducing fatalities. However, implementation leadership must come from the top and there are gaps to identify risk factors and measures to mitigate them. The presidency needs to prioritize road safety and give support and budget to INTRANT.
- The main problem in road safety are motorcycles-- the vehicles are unsafe, and helmets are rarely used or of poor quality. Motorcycles are not registered currently, which makes it difficult to know the condition of the vehicle and the responsibility of the driver.
- Intersection safety along major roads is a critical concern. Government has built pedestrians bridges with positive results (e.g. in the community of de Soto) but with complains about crime.
- Regulation for vehicle registration, inspection and maintenance should be strengthened. There are few requirements and little enforcement. Poor quality new and used vehicles (cars and motorcycles) are imported into the country because there are few minimum safety and emissions requirements.
- Another area INTRANT needs support in terms of road safety is with freight vehicles: specifications, control of speed and enforcement.
- A planned PPP for vehicle inspection will take unsafe and polluting vehicles off the roads, which is expected to start operating in 2024. The inspection program will also include imported second-hand vehicles.

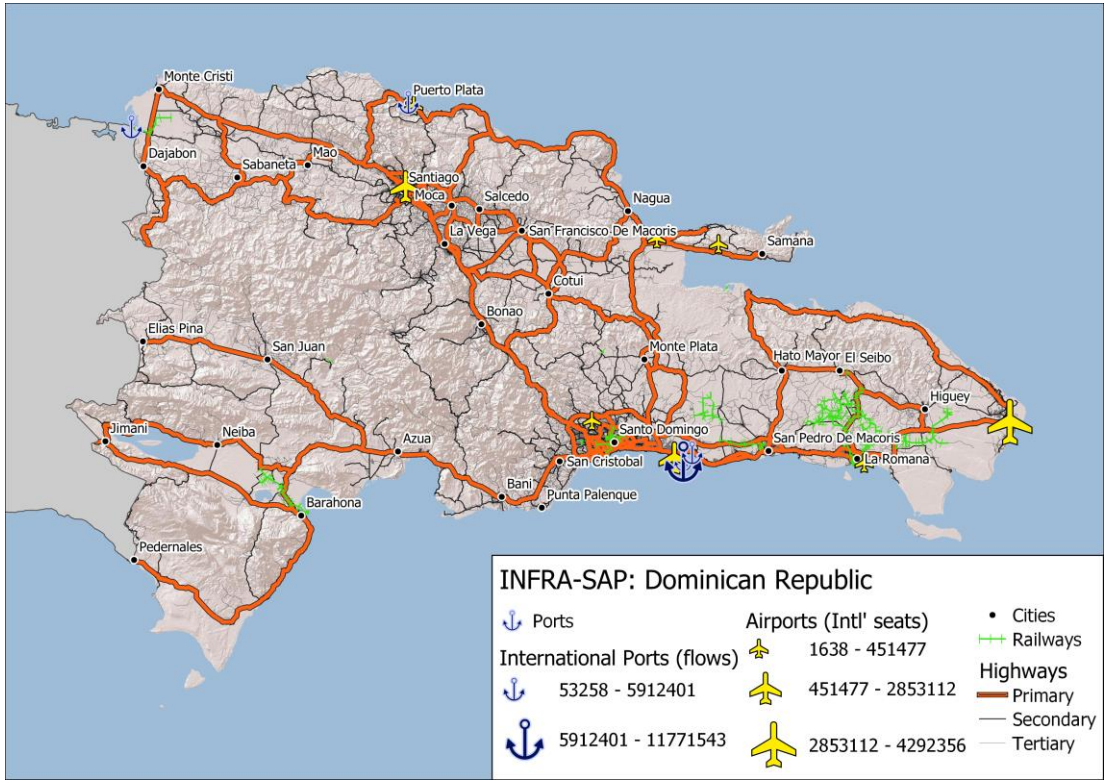
Dominican Republic's transport infrastructures at a glance

Road infrastructure

- 0.29 km/km2 vs 0.2 in the region (2019)
- 2018 World Economic Forum´s Global Competitiveness Report: DR is 4th LATAM country in road infra (40/141)
- 2018: 5.403 km (primary), 8.672 km (secondary), 4.000 km (tertiary) road network. Overall, 47% paved
- Public investment in transport/infrastructure 2016-2018 was 0.4% of GDP. But, unevenly distributed with urban infra
- the “conchos” or shared taxis are the most common means of transport
- length of 19,705 kilometers (27% in main roads and 44% in local roads,29% is comprised of temporary roads/trails.
- link tourist destinations and promote a more diversified sector and other productive fields

Air infrastructure

- 36 airports, aerodromes, and landing strips: 9 are international (6 administered by private sector and 3 are private)
- Las Americas (Santo Domingo) is the main international airport - the main entry point for humanitarian aid for the entire island of Hispaniola
- There is a need to modernize airports (especially for cargo) and to improve regulations



Ports infrastructure

- serves as a bridge to connect with the markets of Central America and the Caribbean
- The National Port System is made up of 13 major port areas (3 private - concessioned) but 54.2% of traffic (70% of tonnage) concentrated in 2 ports (Haina & Caucedo)
- Caucedo port is the main container terminal - mainly for the transshipment of goodsMaritime Connectivity Index: DR was 5th in LATAM
- 80% of international trade is done by sea (2018)
- Activity is heavily unbalanced between North and South ports. North, in 2016, only had 7.6% of total moved tons
- Trade is also heavily unbalanced: 70% is imports

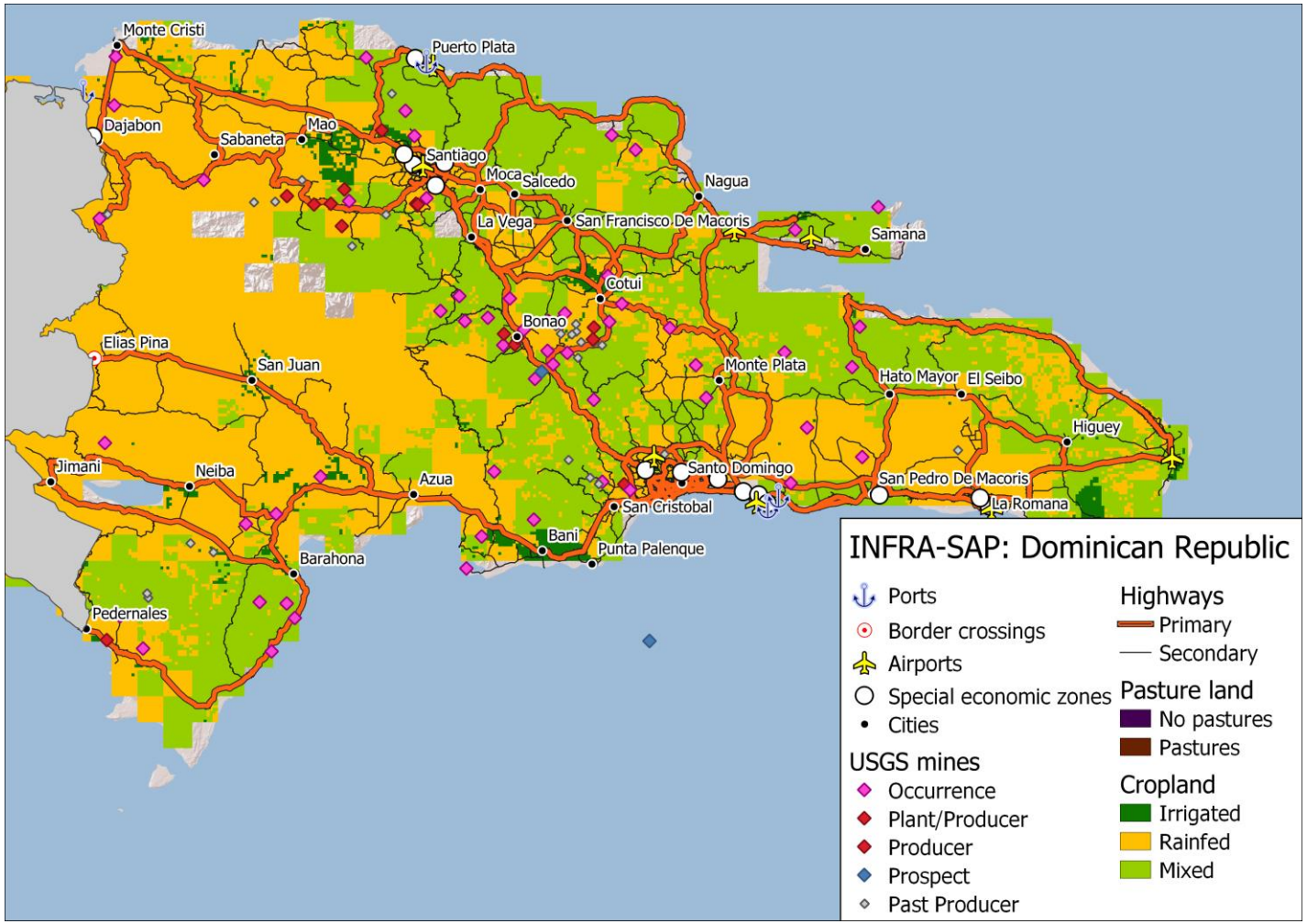
Transport network's main arteries run from Northwest to Southeast, connecting the capital, the main ports and airports, and economic centers.

Flows of goods

- Freight transport is primarily land-based, with roads being the main connectivity channel across DR's productive regions
- Ports and airports handle cargo related to exports and imports
- There are abandoned rail links built over the second half of 19th century to ship production from sugarcane plantations

Flows of people

- Most of the domestic passenger transport is land-based, as distances between major urban settlements are relatively short
- The country's two busiest airports handle a negligible number of domestic passengers, and the bulk of flights are externally bound

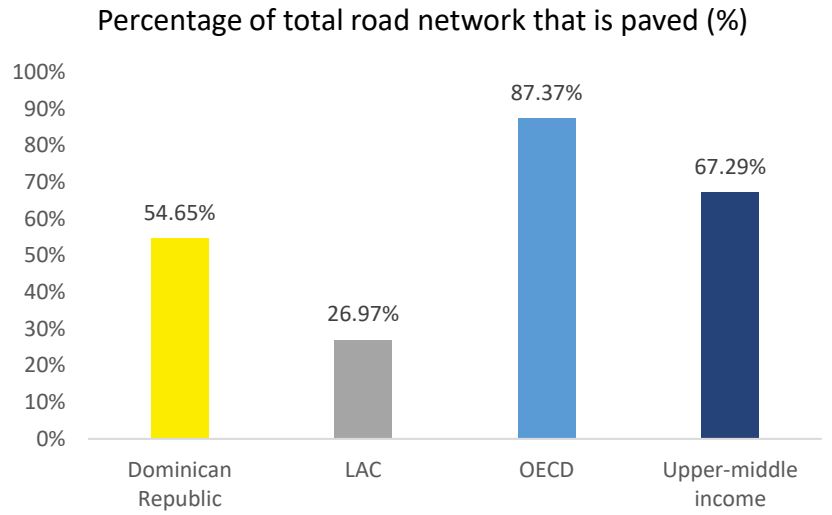


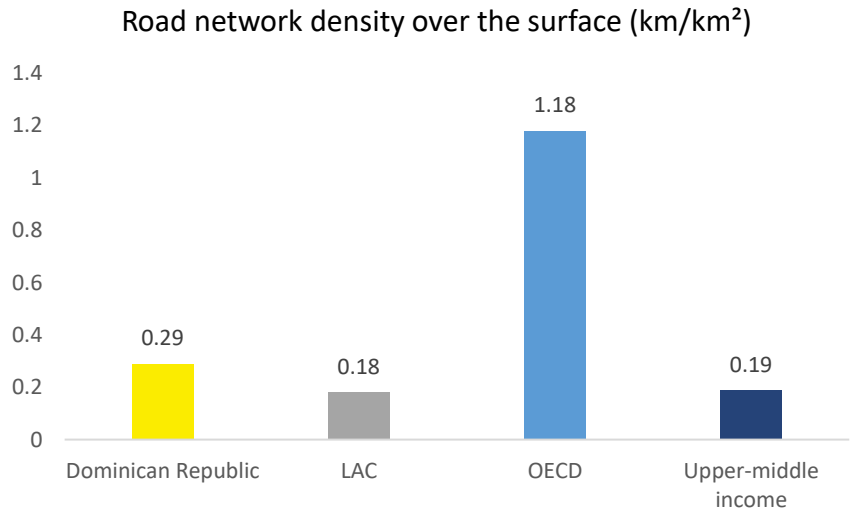
High road network density and paving level relative to regional averages

Road Network Infrastructure

- Higher levels of road paving than regional median and lower than income group median: 54.65% compared to 27% as LAC median and 67.3% as UMI median.
- Relatively higher road network density: 0.29 compared to 0.18 as regional benchmark, and 0.19 as income group benchmark.

Topic		Indicators	Dominican Republic	Costa Rica	Honduras	Guatemala
Rural accessibility		Percentage of rural population with access to a primary road in 2 kms	76%	52%	44%	39%
		Percentage of rural population with access to any kind of road in 2 kms	91%	90%	74%	74%
Domestic integration	Access to a town	Average time to nearest city >50k inhabitants (hours)	0.61	1.23	1.64	1.51
		Percentage of population with access to a city of >50k inhabitants in less than 1 hour	81%	62%	51%	36%
	Access to the capital city	Average time to the capital city (hours)	3.9	1.94	5.42	4.60
		Percentage of population with access to the capital in less than 1 hour / 3 hours	39% (≤ 1hr) 48% (≤ 3hrs)	53% (≤ 1hr) 75% (≤ 3hrs)	17% (≤ 1hr) 27% (≤ 3hrs)	3% (≤ 1hr) 39% (≤ 3hrs)

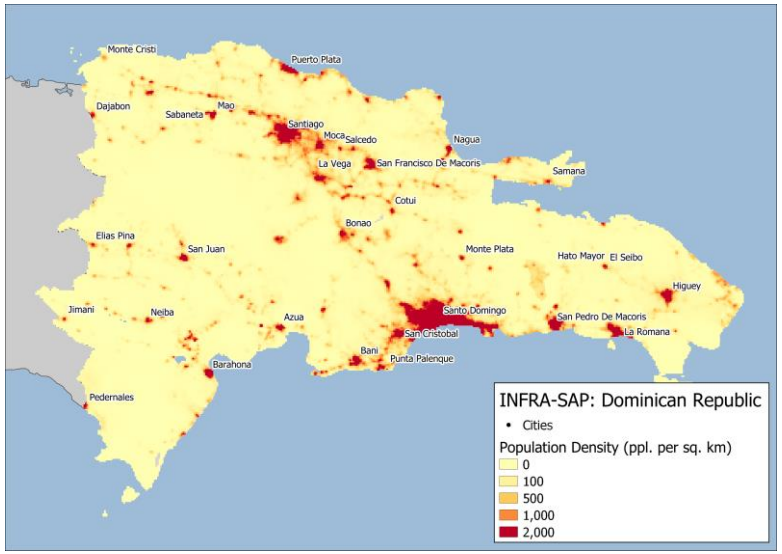


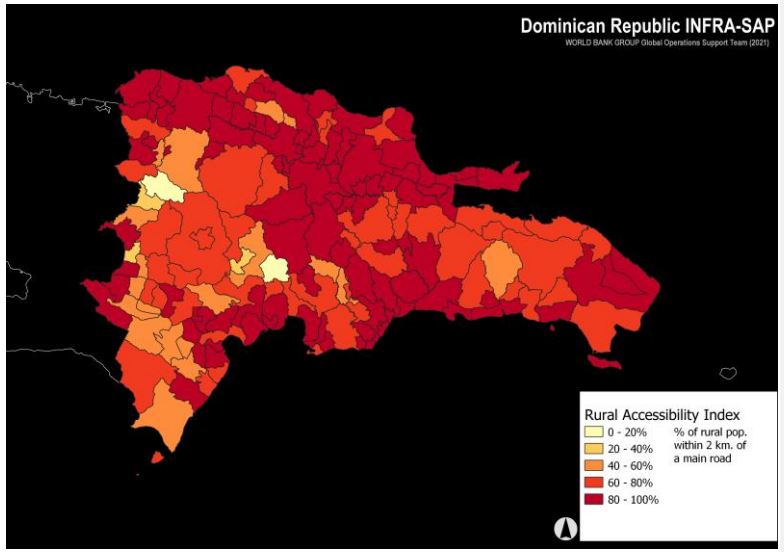


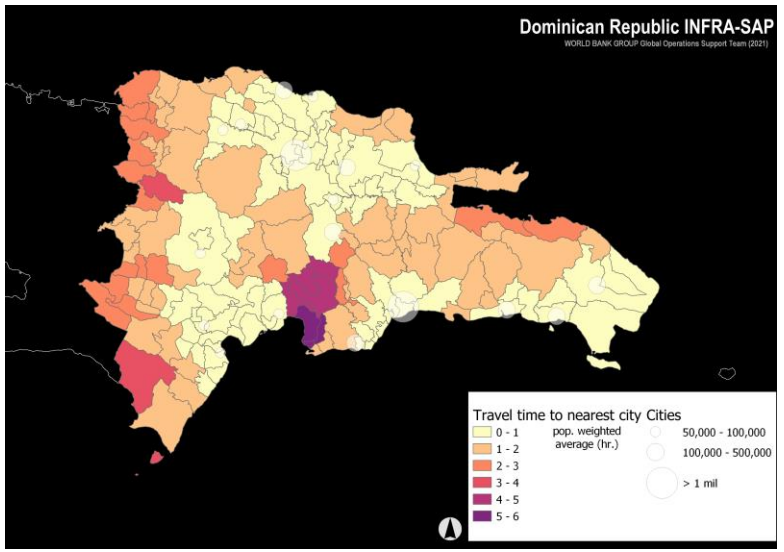
Access to economic opportunities highly concentrated around the capital

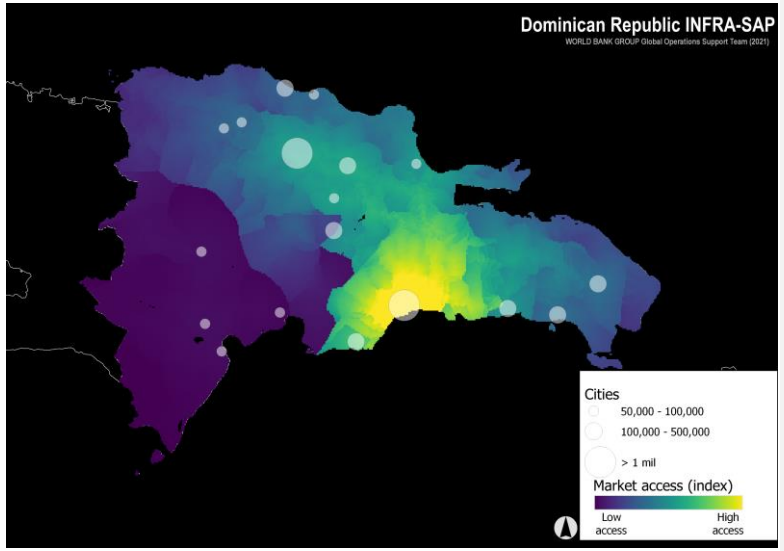
Road accessibility

- Population is concentrated around the capital Santo Domingo and Santiago.
- More than 76% (91%) of the rural population lives within 2 km of a main (any) road.
- The West and Center South of the country have relatively poor access to cities.
- 81% of the population lives within 1hr of a city.
- Market access is highly concentrated around the capital.
- Inadequate rural accessibility has adverse consequences for agricultural competitiveness, through increased logistics costs









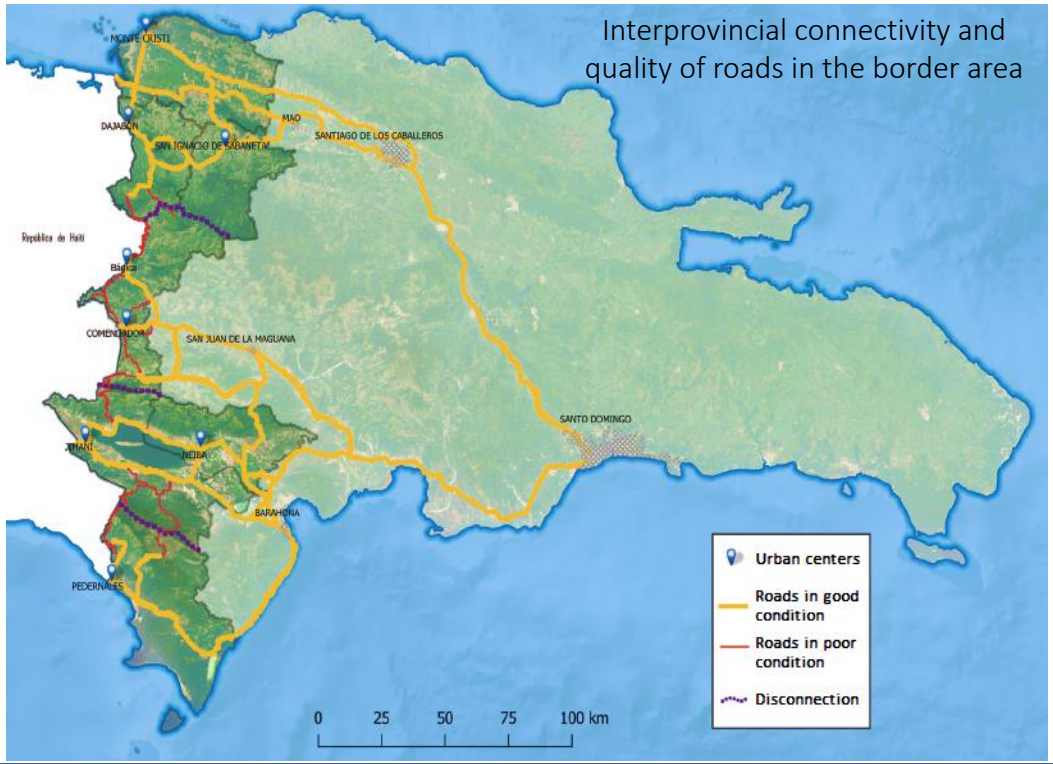
The connectivity gap in the border zone

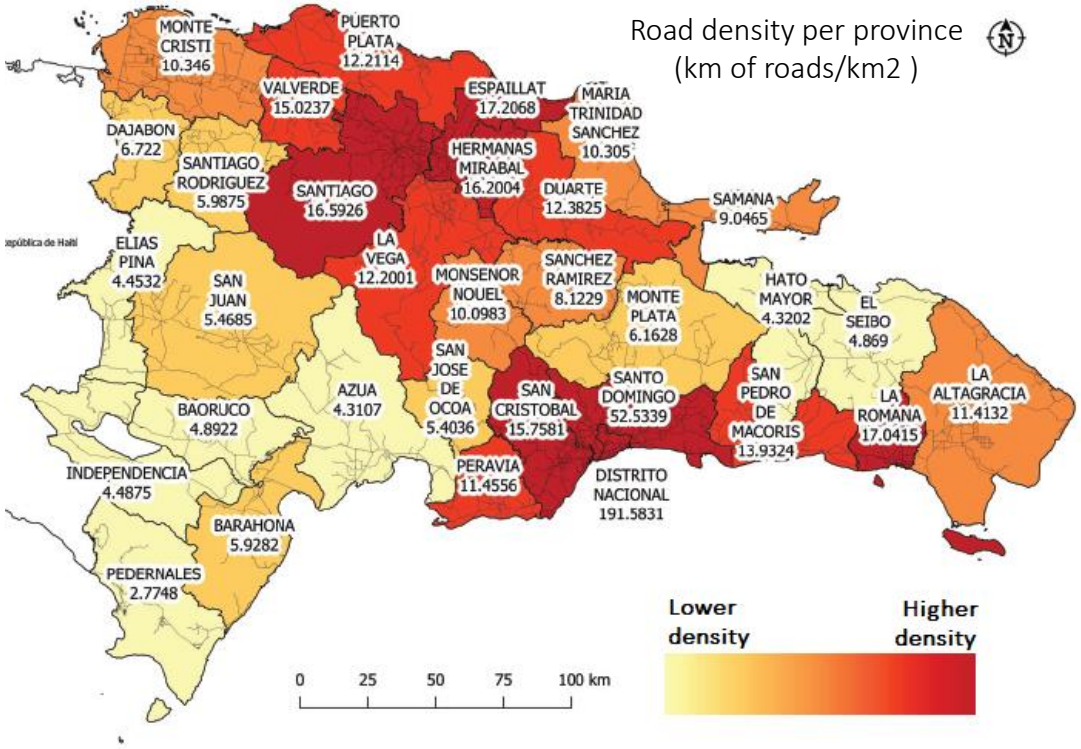
The connectivity gap refers to the deficit in transportation infrastructure, evidenced by low accessibility to markets, low connectivity with neighboring provinces and low density and quality of roads within the provinces.

- This limits the potential for productive development and discourages the location of companies in the area, which is one of the main factors of the productive lag and the higher levels of poverty in the border provinces.

The gap is particularly evident in the southern border provinces.

- Pedernales is almost 200 minutes away from the nearest high-density urban center.
- It also has the lowest road density. Independencia, Elias Piña and Baoruco also lag behind the rest of the country.
- South-north interprovincial connectivity is limited by natural barriers. In addition, the area has many roads in poor condition or disconnected.





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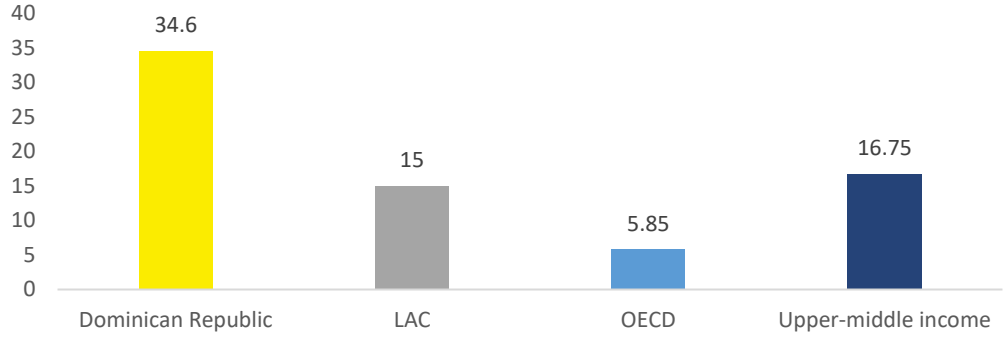
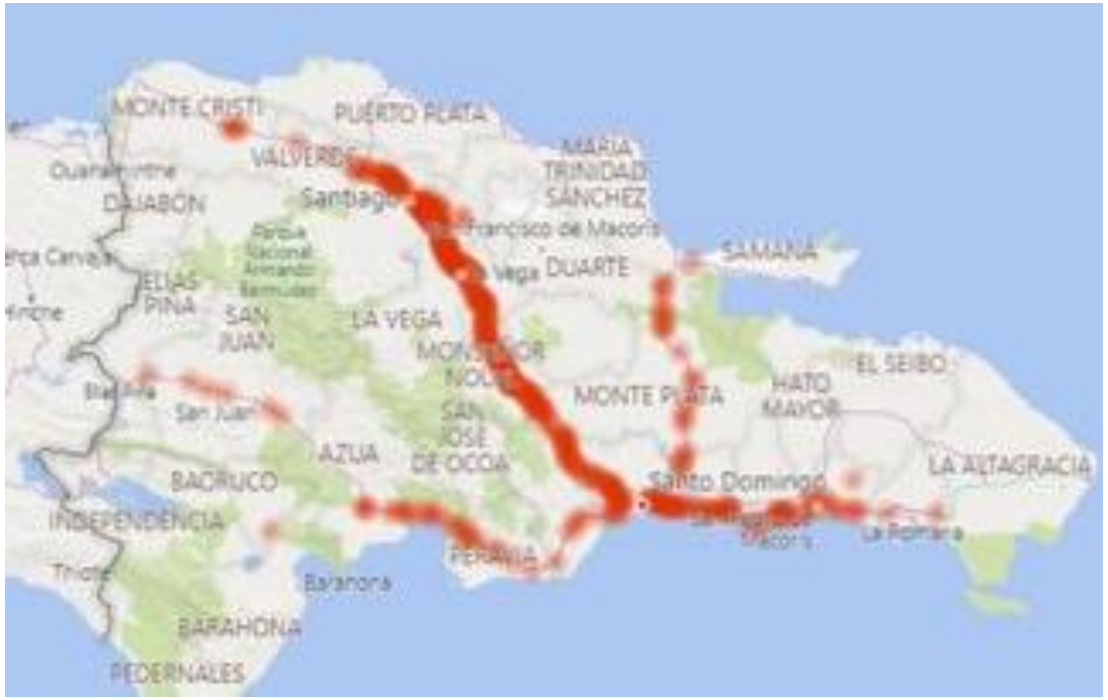
The road infrastructure is unsafe, between 25% to 30% of the fatalities happen in the Duarte corridor

Road safety in the DR is a major concern. Mortality caused by road traffic is much higher than regional and income benchmarks.

- The Dominican Republic has the worst road safety indicators in the region (traffic fatalities and injuries)
- 42% of fatalities occur on highways and of those the North-South corridor (map) has highest number (50%)
  - between 25% to 30% of the fatalities happen in the Duarte corridor
- iRAP has been contracted through SDK Ingeniería for 1,163 Kms, financed by IDB:
  - Rated with 1 and 2 stars 74.5% of the Duarte Highway and with 3 stars the rest. The Duarte Highway is under reconstruction with public funds
  - In the three main highways, 78% of the infrastructure is unsafe
  - 40% of the Américas Highway was rated with 1 and 2 stars
  - Another assessment will be included in an IDB loan related to the Manzanillo Port. This would have another 2,500 kilometers for the roads in productive areas.
- Motorcyclists represent 70% of the fatalities
- Another issue is the technical condition of vehicles, the fleet is: 52% motorcycles, 26% automobiles and 12% freight vehicles. 43% of the total fleet is over 20 years old.

Mortality caused by road traffic injury (per 100,000 people) (WHO, latest year available)





The main challenge in Road Safety is the implementation of the National Strategic Road Safety Plan. Motorcyclists represent the highest number of fatalities.

The Dominican Republic has the worst road safety indicators in the region (traffic fatalities and injuries) and is fifth in the world

- Between 2010 and 2016, motorcycle user deaths: 8,533, 63% of total road safety victims, while pedestrians 2,600 about 20%.
- The Law 63 of 2017 that created INTRANT, gave the new agency the mandate to work on Road Safety, and created the Permanent Observatory of Road Safety
- INTRANT created the Data Board and a protocol to collect information of crashes
- Goal: Reduce traffic deaths by 50% by 2030
- INTRANT formally assembled “Mesa Gestora del Dato de Seguridad Vial y Movilidad” in August 2021. Created a protocol for data collection.
- In November 2021, INTRANT published the Strategic National Road Safety Plan, with the support of PHO (OPS) and the technical revision of IDB.
- The main needs INTRANT has are: Communication of the Strategic Road Safety Plan, regulation of the Road Safety Law, speed control in highways, motorcycle registry and helmet use and measurement of the impact of crashes
- Despite of all the efforts fatalities are not going down, there is public pressure to get results on this matter

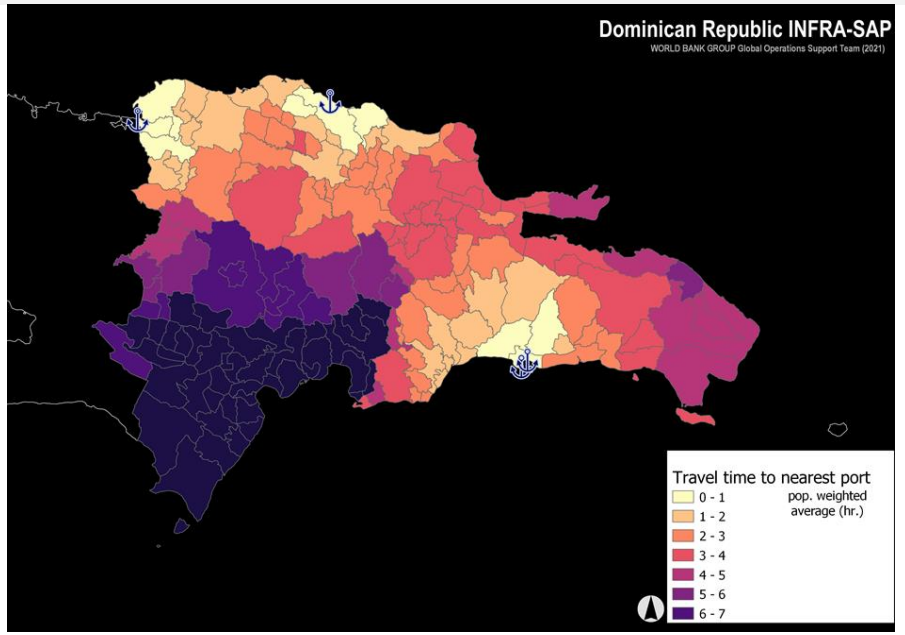
Intercity logistics efficiency makes one of the main issues of transport connectivity in the Dominican Republic.

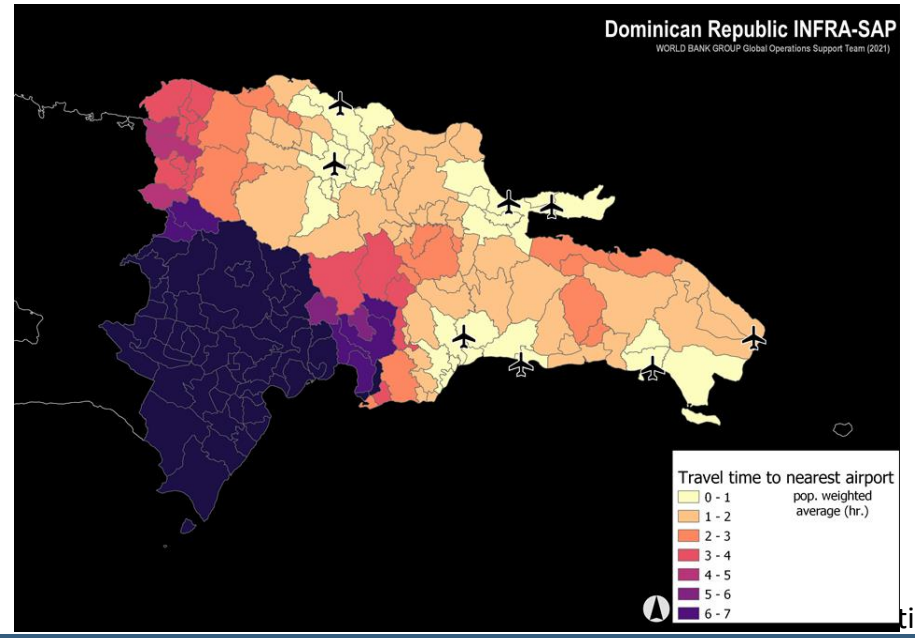
Some highlights

- Despite the relatively good performance of the aviation and maritime sectors, land access and last mile logistics are still significant constraint for productivity
- Access to markets is concentrated around the capital city of Santo Domingo, hence the relevance of intercity logistics for the economic performance of export and import value chains
- Congestion and road safety also constitute important factors undermining the efficient movement of people and goods between cities
- Intercity challenges extend to city-access infrastructure, especially when it comes to congestion

Some ongoing interventions

- The Ambar Highway has been structured as a PPP
- BCIE is financing a feasibility study for a train for passengers and freight between Santo Domingo and Santiago de Los Caballeros. The study by ALG will be ready in July 2022 and will establish the potential demand for both, passengers and freight as well as the regulatory framework and governance.
- IDB has a loan for USD 140 millions for rural roads





Relatively high reliance on motorcycles and lower penetration of commercial vehicles compared to LAC and UMI benchmarks. Low productivity of the trucking industry

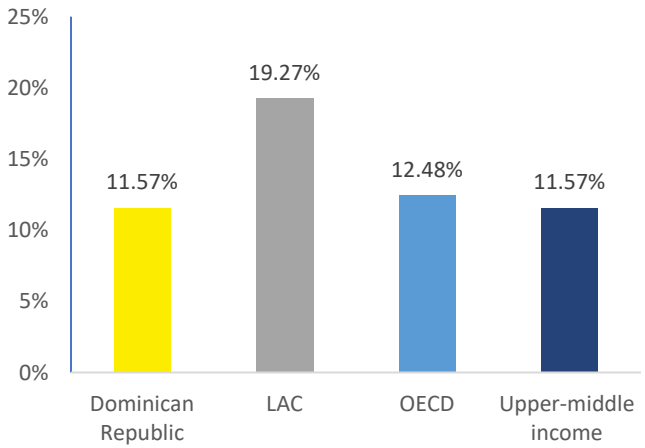
Passenger services

- Higher percentage of total vehicles, share in road traffic and penetration of motorcycles
- Much lower indicators for cars
- Lower percentage of road traffic in cars, and higher in buses and motorcycles

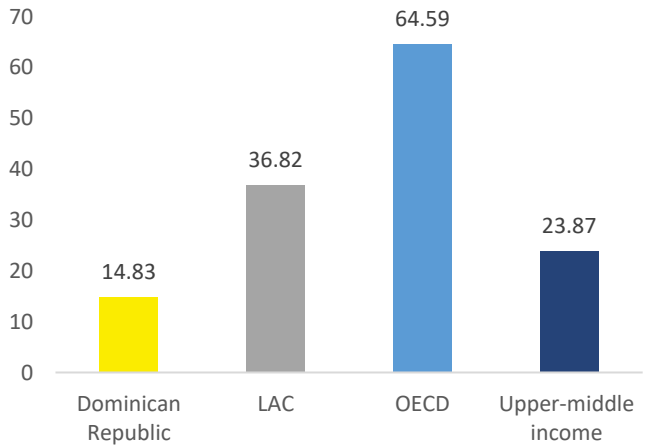
Freight services

- Percentage of total vehicles that are commercial vehicles: Relatively lower percentage at 11.6% compared to 19% as LAC median, and on par with income group median at 11.6%.
- Penetration of commercial vehicles lower than regional and income group benchmarks.
- Lower productivity than countries in Central America, high average trucking tariffs at 4.75 USD/km
- Old and inefficient truck fleet, average age of 21 years
- Low average distances travelled, average mileage of 9,000 km/truck/year

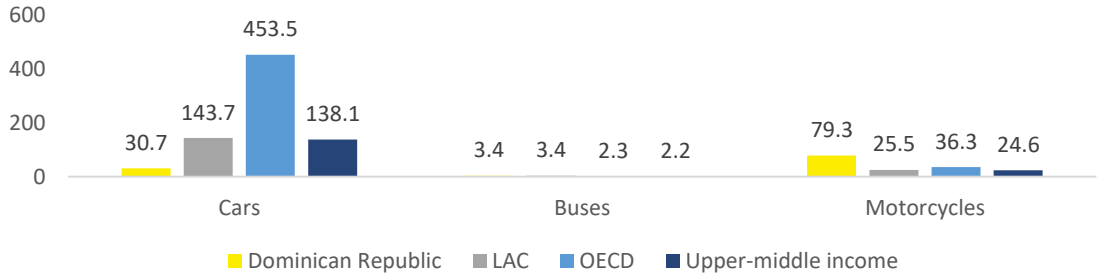
Percentage of total motorized vehicles that are vans, pick-ups, lorries, tractors (%) (Latest year available)



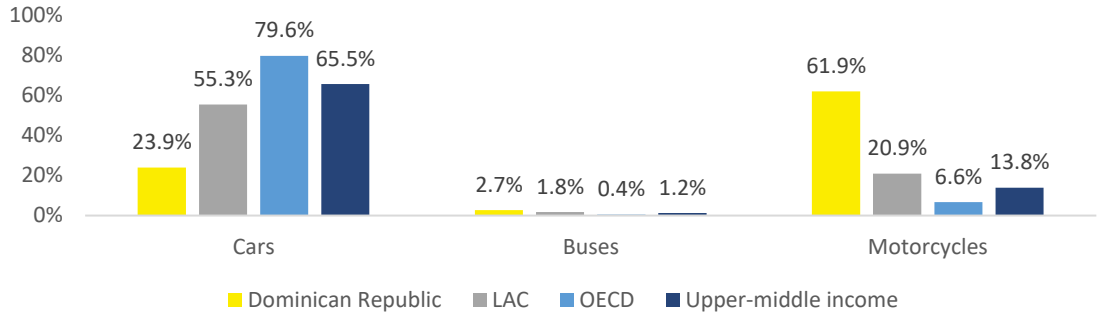
Penetration of vans, pick-ups, lorries and tractors (veh/1,000 popn.) (Latest year available)



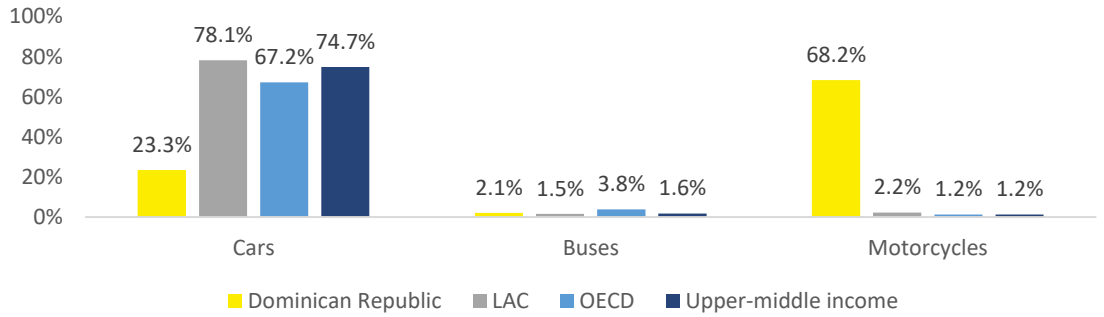
Penetration of cars/buses/ motorcycles (veh/1,000 popn.) (Latest year available)



Percentage of total vehicles by vehicle type (Latest year available)



Percentage of road traffic by vehicle type (Latest year available)



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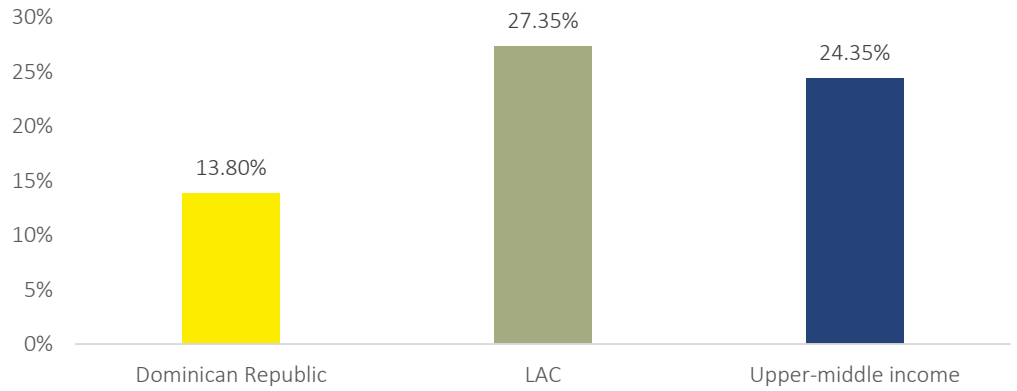
A relatively low percentage of firms identify transport as a major constraint

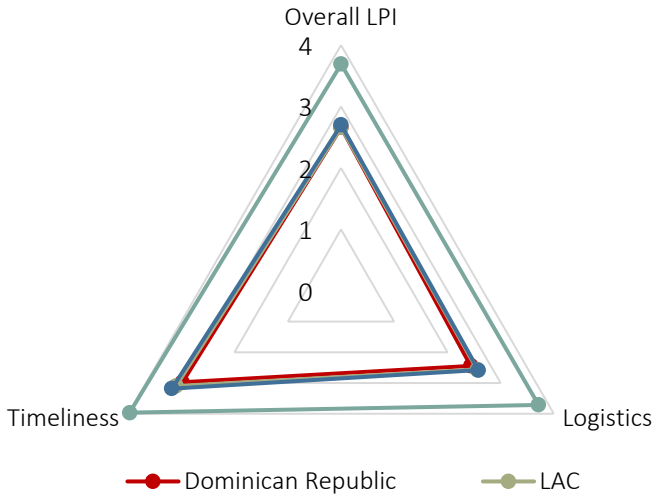
Freight transport reliability

- LPI indicators show that the DR's performance is on par with regional and upper-middle-income benchmarks.
- Relatively lower percentage of firms identifying transport as a major constraint: 13.8% compared to 27% as LAC median and 24.35% as UMI median.
- Relatively lower percentage of products lost during shipping to domestic market: 0.6% compared to 1.3% as regional standard.

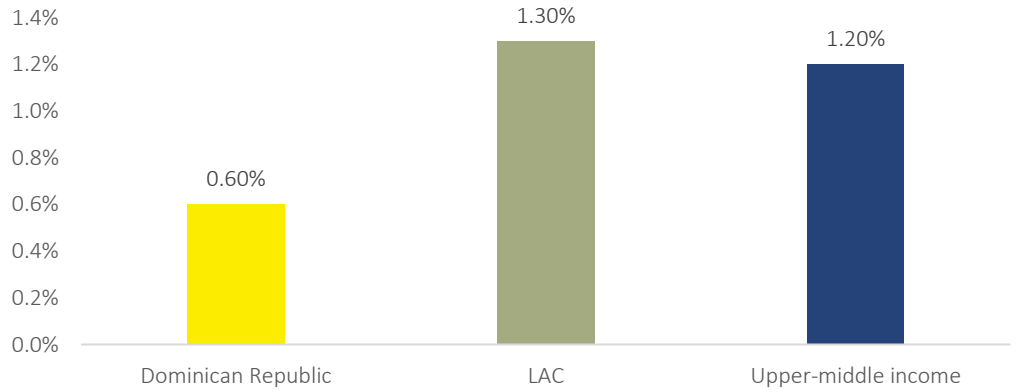
Percentage of firms identifying transport as a major constraint (%) (Latest year available)



Logistics Performance Index (Latest year available)



Percentage of products lost by firms to breakage or spoilage during shipping to domestic markets (%) (Latest year available)



Rapid and unplanned urbanization process generates challenges to urban transportation systems

The urbanization process in the Dominican Republic was faster than the LAC and UMIC.

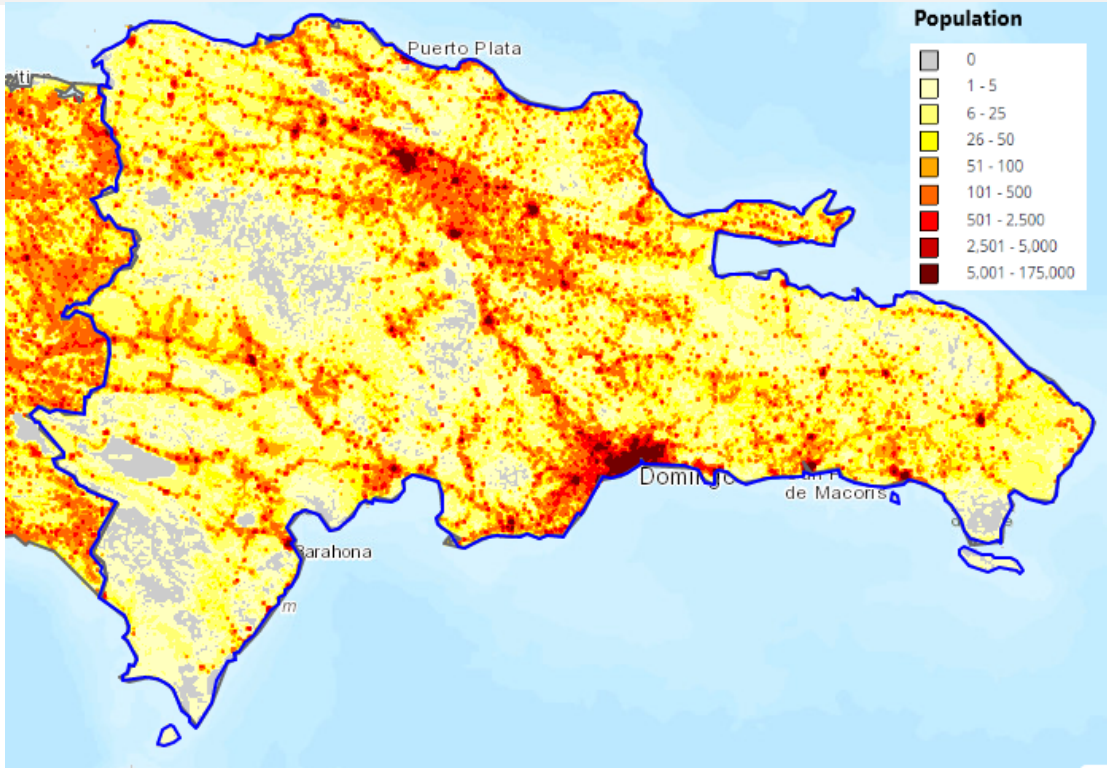
- Creates positive agglomeration externalities for economic growth
- But at the same time, unplanned urban expansion generates negative externalities such as high pressure on natural resources, pollution, congestion (affects human health and quality of life)

Challenge in Santo Domingo and other cities in terms of the location of new urban dwellers and their access to the labor markets by transit and other modes of urban transport

- Transit services carry 70% of all trips in the city (metro line only moves 9% of total trips)
- Transit services represent most of the times the only mobility option for the bottom 40% of the population

Low-income population has limited access to economic opportunities due to congestion and poor transit service provision

Road safety is an issue – most dangerous place to drive (15th worst in the world)



Disclaimer: Country borders or names do not necessarily reflect the World Bank Group's official position. This map is for illustrative purposes and does not imply the expression of any opinion on the part of the World Bank, concerning the legal status of any country or territory or concerning the delimitation of frontiers or boundaries.

Source: https://worldpopulationreview.com/countries/dominican-republic-population, Dominican Republic SCD 2018

City	Population
Santo Domingo	2,201,941
Santiago de los Caballeros	1,200,000
Santo Domingo Oeste	701,269
Santo Domingo Este	700,000
San Pedro de Macoris	217,899

Urban mobility features

The public transport supply is mainly composed of Conchos, motorcycles, cabs, and urban buses

- There are also metro and metropolitan buses in the major cities of Santo Domingo and Santiago

The country has 4,842,367 private vehicles registered in its national vehicle fleet as of 2020 (an increase of 4.5% over 2019)

- This number of vehicles, together with the state of the road infrastructure, has an impact on the country's mobility problems and its high accident rate, which is one of the highest in the world
- It is important to promote walking and cycling (only 1% use bicycles on a daily basis) to reduce pollution rates and increase the sustainability

"Conchos" are shared taxis that travel carrying as many as 6 passengers at a time

- Unregulated car sedans that operate as a paratransit service
- Caveats:
  - no central map to check, no phone number to call, no website to visit; no official stops
  - employees must reserve hours of extra time to get to work
  - some people cannot accept jobs that are too far away
  - women cannot go out freely without worrying about their personal safety

DATUM (Open Urban Transport and Mobility Data) developed as a part of the "Sustainable cities" program (IDB and partners)

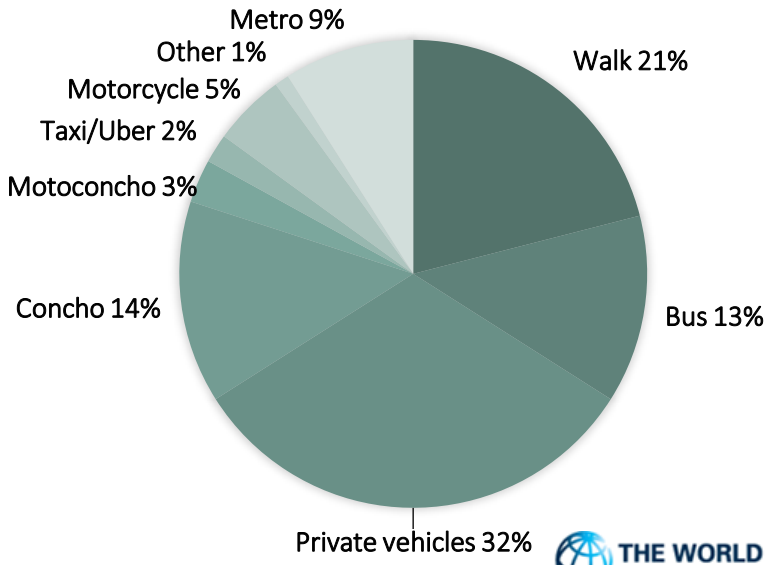
- Santiago (2nd biggest city in DR) became the first metropolis in the Caribbean where Google Maps has information on public transport
- The map includes accessibility and security conditions for the elderly and people with disabilities

Santo Domingo: congestion and poor transit service provision that impact the poor disproportionately

Some mobility characteristics in Gran Santo Domingo (GSD)

- The GSD is formed by the municipalities of: Distrito Nacional (ADN), Santo Domingo Oeste, Los Alcarrizos, Santo Domingo Norte and Santo Domingo Este.
- Travel time in the GSD increases, as one third of the 3.1 million trips a day, are made in private cars. Car ownership has doubled in the last decade.
  - Aggregated (car, bus, walk) average travel time per trip 75 minutes. Average commuting times within the National district > 1 hour (2007)
  - Public transport average speed at peak hours 8 – 10 Kms/h.
- Transit service provision dominated by Conchos. There are 16,000 units(6-times as many vehicles as the total bus and minibus fleet) operated by the "sindicatos" with an average age of 22. Conchos can reach an occupancy of 6 persons
- There are 200 buses (diesel EURO III) operated by OMSA, the public operator. Less than 50% of the buses have validators, accepting debit/credit cards and metro card.
- There are 3,000 Minibuses and Microbuses operated by the "sindicatos".
- The average age of public transit vehicle fleet is 23 years, with high operation and maintenance costs
- The 5-kilometer-long Cable Car is integrated with the metro. Construction is under Unidad Ejecutora para la Readecuación de Barrios y Entornos (URBE) and it is operated by OPRET.
- Transport fares are: Conchos between DOP 25 – 50 (USD 0.44 – 0.88), bus DOP 15 (USD 0.26), and metro DOP 20 (USD 0.35) with its own ticketing system.
- COVID impacted highly the demand of public transportation, however it is back to pre-pandemic levels.
- Transport represents 20% of the CO2 emissions of the GSD with 1 million tons annually: 56% comes from cars, 16% from "conchos" and 15% from buses.

MODAL SHARE, PMUS 2018



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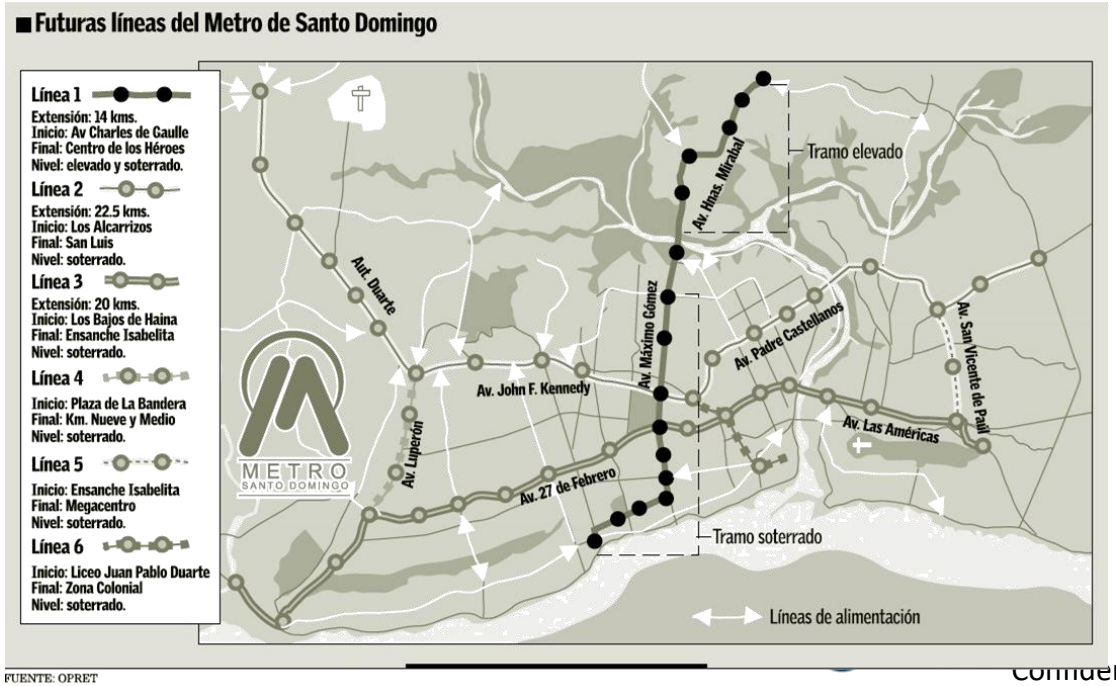
The Gran Santo Domingo's metro system. A way to reduce road congestion and pressure on public transportation

DR does not have an operational national railway system, but since 2009 it has developed an urban metro system serving the capital city of Santo Domingo

- The Metro System is the first in the country and second in the Caribbean.
- Most Dominicans rely on public transportation, which prior to Metro, meant using crowded mini-buses or public cars. According to OPRET, 70% of daily trips during peak hours are made on public transportation, and 85% of Santo Domingo residents do not own cars. However, the public transportation vehicle fleet is disorganized, outmoded, dangerous, and pollutant
- The Master Plan includes the development of 6 lines, of which two have been completed, plus a system of feeder routes and integrated buses.
  - Line One cost just under US$700 million to build and was constructed in a period of three years. It was funded by the government.
  - Line Two opened in 2013 and cost US$830m. Line 2B (a 3.6km extension of Line 2) was financed via an AfD loan of US$210m and opened in 2018.



FUENTE: OPRET

The Gran Santo Domingo's metro system. Good service indicators as part of an optimization process.

Currently, two lines have been completed and more rollingstock is being purchased to optimize the travel capacity of the network.

- In August 2021, eight (8) new three-car Metropolis trainsets for Line 1 were purchased.
- OPRET in 2020 has transported in the Santo Domingo Metro network, 529,303 million users
- Line 1 transported 49.18%, while Line 2 46.53% and Cable car contributed 4.28%.
- The transport service of both the Metro and the Cable Car was interrupted between March-May 2020, due to the state of emergency to reduce the spread of the COVID-19 pandemic. This brought down the average daily toll to 177,484 users. The metro system demand reached 80% of the prepandemic levels in 2021 and today is in 97%, moving 340,000 – 350,000 daily. In 2019, with the opening of Line 2B in 2018, the average daily toll was 345,410 users.

According to OPRET, the service indicators shows a reliable metro service

- Punctuality: 94% on Line 1 and 93% on Line 2.
- Compliance with Frequency: 98% of users in the morning rush hour and 98% of users in the afternoon rush hour.
- Regularity: It did not exceed more than two minutes to the interval offered.
- Service Availability: 91% of the time for Metro service. In the case of Cable Car, availability is at 89%

Technical characteristics of the metro:

Length:	48.5km (Line 1: 14.5km - Line 2: 34km)
Number of stations:	30
Maximum speed:	80km / h

Operation of the Santo Domingo Metro:

State:	In service
No. of lines in service:	2
Total number of planned lines:	3
No. trains:	35
No. wagons:	105
Frequency:	1:30 minutes
Fleet:	Alstom Metropolis 9000
Average speed:	60-70km / h
Operator:	OPRET

With an innovative corridor by corridor model, INTRANT is transforming the old Conchos owners into bus operators, however a scrappage programs needs to be set up

Avenida Nuñez de Cáceres:

- The corridor is 10.2 Kms long with stops every 380 meters. INTRANT negotiated with the former owners of 136 "Conchos" to set new transport companies to procure 30 90-passenger diesel EURO V buses, with the support of the National Bank, and operate. It is moving 7,900 passengers a day at an average speed of 15 km/h. The fare is DOP 35 (USD 0.61). AFD is supporting the training of operators (from Conchos to Buses)

Avenida Winston Churchill:

- 47 90-passenger buses replaced 350 Conchos. 285 drivers became shareholders of the new bus companies. It is carrying 32,000 passengers in 12 kilometers and 64 stops. The metro card can be used as method of payment.

Avenida Charles de Gaulle (East side)

- Opened in late March with 17 kilometers and 69 stops, also using 90-passenger buses

There is no fleet renewal regulation or policy. INTRANT assigns the routes, sets the KPIs and supervises.

Only one of the BRT corridors identified by the PMUS is moving forward at a very slow pace

BRT in Avenida La Independencia - Luperón:

- Avenida La Independencia has been chosen by Egis (AFD) as the highest priority as a BRT corridor, with a connection with the Luperón (previously identified as low-priority). This corridor goes through the center, the most urbanized and consolidated area. Design will include integrations with metro.
- AFD tendered the design and operations of the BRT, proposals were expected by mid-2022, **however the proponents were asked to add components to the scope of work** and the project is stagnant. The studies will be ready in about 9 months.
- Total extension: 20 kilometers
- Estimated cost of infrastructure: USD 7.5 million per kilometer:
  - Dedicated busway, including the improvement of sidewalks and signaling
  - Stations and depots
  - Does not include buses
- AFD has contracted Taryet to update the city's transport model and the demand forecast, it will also include an operational design for buses. This contract has not started yet.
- The schedule for La Independencia-Luperón is:
  - 2022: Detailed Design (It has not started yet)
  - 2024-2025: Construction
  - 2026: Operations
- The corridor is partially operated by OMSA, it is unclear what the model of operation will be, OMSA or a new operator organized by former conchos. Before construction a pilot for e-buses would be run in this corridor and OMSA would operate them. IDB is working on the business model.

Without studies supporting the decision, the Ministry of the Presidency decided to change a BRT corridor into a Metropolitan Train and extended to the airport

Metropolitan Train on Avenida 27 de Febrero

- The government decided that Avenida 27 de Febrero will be a Metropolitan Train connecting with Avenida de Las Américas with final destination the international airport. It will have 41 stations with an expected demand of 20,000 passengers per hour per direction.

- On August 6, 2021, the Ministry of the Presidency published a Request for Expressions of Interest for the procurement, operation, maintenance and financing of the rolling stock for the Metropolitan Train.

- Through the Trust Fund "Fideicomiso para el Desarrollo de Transporte Masivo" (FITRAM), the Oficina de Proyectos de Movilidad opened for the detailed design in February 2022. It has not been awarded yet.

The metro expansion is advancing quickly

Metro:

- Extension of Línea 2C at Autopista Duarte: Construction is ongoing (started in February 2022 and will finish in February 2024), it will connect with Los Alcarrizos Cable Car and it has a construction cost of USD 506 million. AFD and BCIE are interested in financing this extension. An intermodal station is also being built.
- Extension 2D at Avenida San Vicente and it will have the designs ready in May 2022 and the estimated cost is USD 270 million. This extension will have two stations and a Park & Ride facility
- Capacity increase of Línea 1. For Line 1, 18 cars have already arrived and 30 more have been ordered and will arrive in 2023. This will increase the demand to 20 million a year by 2024.
- The current subsidy for the operation of the metro is 85%. The total operational cost is DOP 37 and the fare is DOP 20.
- More than 60% of the metro drivers are women.

Cable car:

- The cable car in operation today moves 10,000/day and has one connection to the metro Line 2. The Alcarrizos Cable Car will be ready by the end of 2022 and will be integrated (fare, ticket, operations and infrastructure) with the metro.

Ticketing:

- The metro has a contact-less card
- Some of the corridors operated by OMSA accept payment with debit/credit cards as well as the metro card
- INTRANT launched SD Go a new card to integrate the payment in the metro, OMSA buses and the cable car

There is an opportunity to implement Transit Oriented Development along the Ecológica Avenue, however there is no agency working on this

Future BRT corridor on Avenida Ecológica:

- PMUS identified it as the corridor with the highest demand potential, however it depends on the new housing development "Ciudad Juan Bosh". As of today, 1/5 of the housing has residents. Today the demand is low
- It currently has an "Express Bus Lane" operated by OMSA.
- With the current demand it has been decided to downgraded from BRT to a Bus Corridor
- There is an opportunity for urban renewal and TOD as the area around is still consolidating.

E-buses:

- OMSA is working with other government agencies in implementing a pilot with 22 50-passenger e-buses. The corridor is to be defined, however the most likely one is the Avenida La Independencia, before the BRT corridor is implemented. A phase two would be in the Abraham Lincoln corridor than connects with Independencia.
- OMSA would be the operator of the e-buses. The procurement is to be decided.
- ADN is working on a Restricted Area Zone (ZAR) where cars, trucks are not allowed. Another project ADN is working on is the electric corridors in the colonial city, cars will not be allowed and 7-meter e-buses will transport citizens in this area.

Enforcement Cameras:

- A private initiative to install cameras to fine traffic violations was presented by the private sector to the DGAPP. DGAPP is in the process of tendering the feasibility evaluation of this proposal

Non-Motorized Transport is inexistent, there is a lack of infrastructure for safe walking and cycling

Bicycle Infrastructure:

- ADN built 7 kilometers of a bicycle path in Avenida Bolívar with very low use. After one year of operation, citizens have opposed to this bike path. Part of the problem is the lack of connectivity, today it only reaches the historic center and is often invaded by cars. The dividers with mixed traffic have been damaged by cars, leaving bike riders unprotected. ADN is in the process of replacing them with more resistant ones.
- ADN is in the process of replacing the dividers of the bicylce path
- The next phase includes the construction of another 14 to 18 kilometers bicycles paths on Winston Churchill and Abraham Lincoln, which would connect with the subway. Users can take the bike in the metro. Additionally, there are 9 kilometers built on the boardwalk.

Sidewalks:

- Sidewalks are narrow and inexistent in some cases
- There are no pedestrian crossings at intersections
- ADN has improved some sidewalks, widening as well as recovery. Lighting has also been improved

In Santiago De Los Caballeros, the second largest city, informality is worse than in Santo Domingo, with Conchos as the main transport mode. A monorail project is underway

General aspects

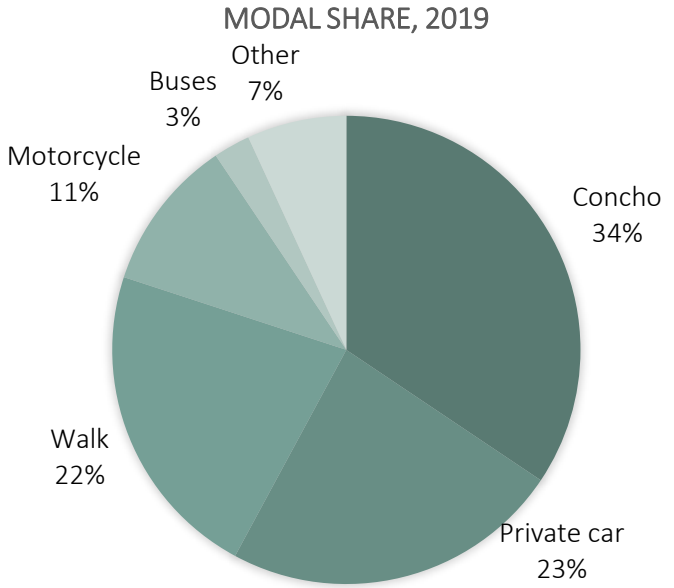
- Population of 1.2 million, 800 thousand in the urban area
- Total of trips 1.2 million
- 56% of trips are made in small vehicles (conchos and private cars)
- There are more Conchos than buses.
- Average trip is of 30 minutes
- Bicycle trips are insignificant

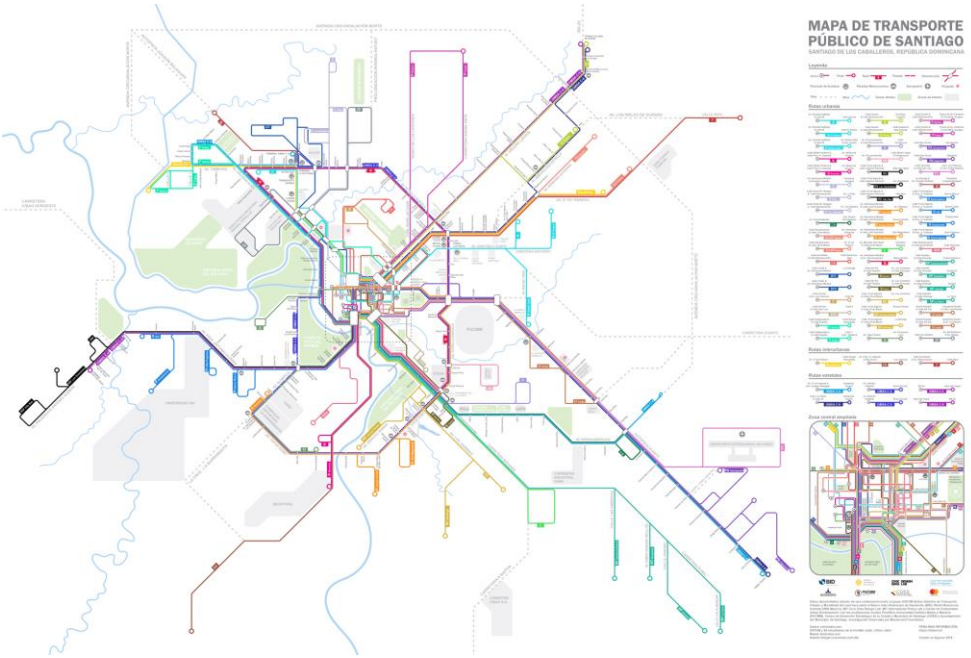
Monorail

- The construction of Phase 1A (15 kilometers of a total of 22) Monorail started in 2022 with a contract with ALSTOM:
  - Phase 1A: Corredor Av. Hispanoamericana – Av. Salvador Estrella Sadhalá – Av. Las Carreras, desde la Carretera de Matanzas (Barrio Pekín) hasta la Terminal Central en la Av. 27 de Febrero.
  - Phase 1B: Corredor 27 de Febrero – Av. Circunvalación, desde la Terminal Central hasta la Terminal Intermunicipal Cibao Norte en Av. Circunvalación Norte (barrio Cien Fuegos).

Transport Model

- AFD will contract a company to update Santiago's transport model. The contract will include operational design for buses.

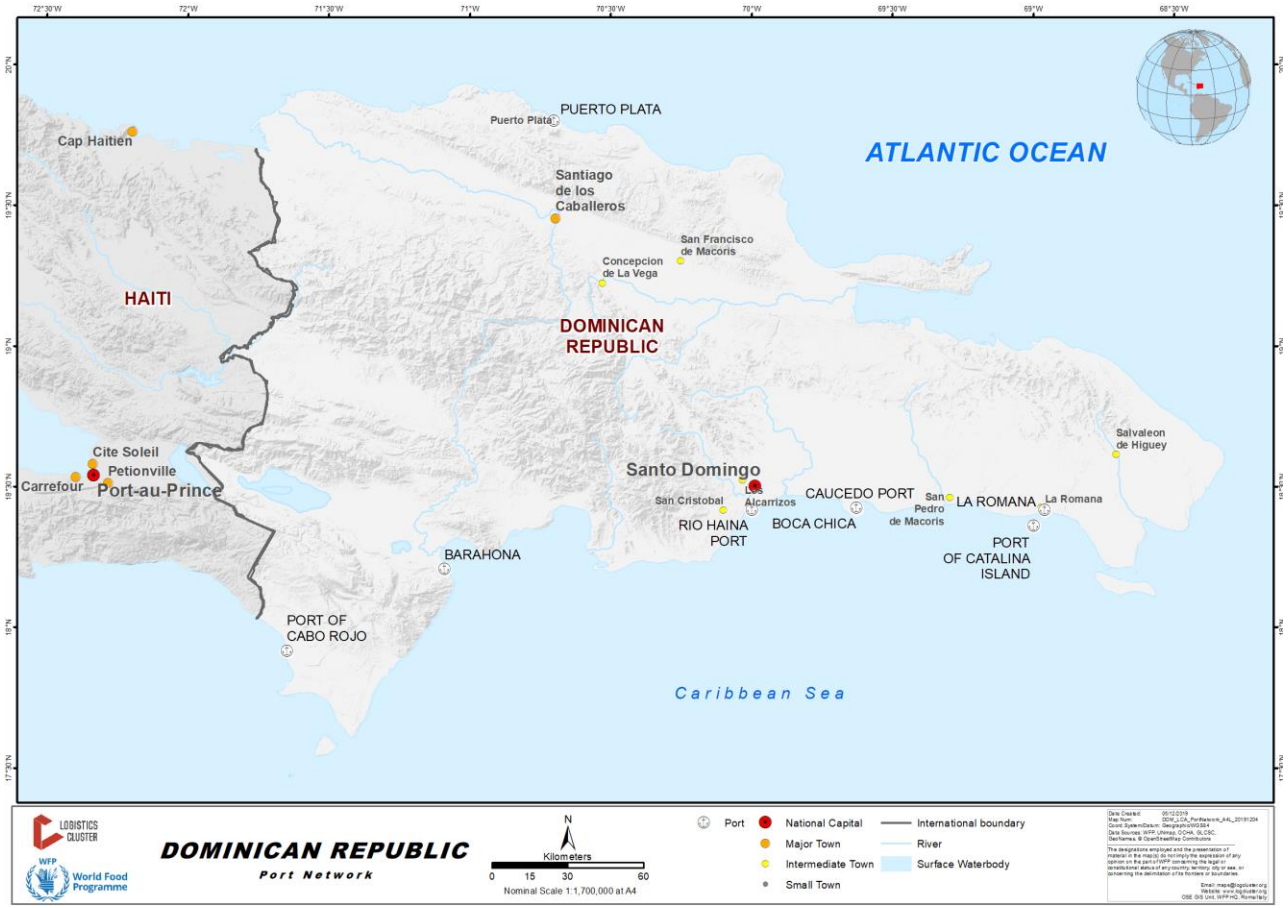




High concentration of port movements in the Santo Domingo area (Haina and Caucedo ports).

Ports and maritime connectivity

- The country's seaport system includes 13 ports, though 70% of all traffic (by tonnage) and 90% of container traffic (in TEUs) is handled only by two ports (Haina and Caucedo). Therefore, there is concentrated of traffic in the south.
- The north coast, in the ports of Manzanillo and Puerto Plata, currently represent only the 5-6% of the total tonnes moved.
- About 80% of the country's international trade is maritime.
- The patterns also reflect a trade imbalance, where 70% of the port traffic is imported, while only the 14% is for export, the remaining 16% being transit traffic.
- Dominican Port Authority is the regulatory body of the National Port System.



The three main ports of the Dominican Republic. Highlights

Caucedo

The Caucedo multimodal port is located in Caucedo, Boca Chica and it is used mainly for handling cargo imports from the Caribbean zone.

This port is managed by DP world and despite being the newest port in the country is also its most modern one and can handle New Panamex vessels.

The port of Caucedo is home to the Caucedo Logistics center which is the first and currently only free trade zone housed within a port facility in the nation.

Haina

Haina port has two terminals: the Haina Occidental and Haina Oriental terminals. This port is primarily responsible for handling the petroleum imports for the country.

It is also close to Santo Domingo, the capital of the Dominican Republic, which is why it moves a lot of the country's imports and exports.

This port is used mainly for regional shipments.

Puerto Plata

This is the main port on the North coast of the country and is located in San Felipe de Puerto Plata.

It is considered the third most important port in the country because not only does it handle container cargo, general cargo and fuel cargo, it also is utilized by the government for military movements.

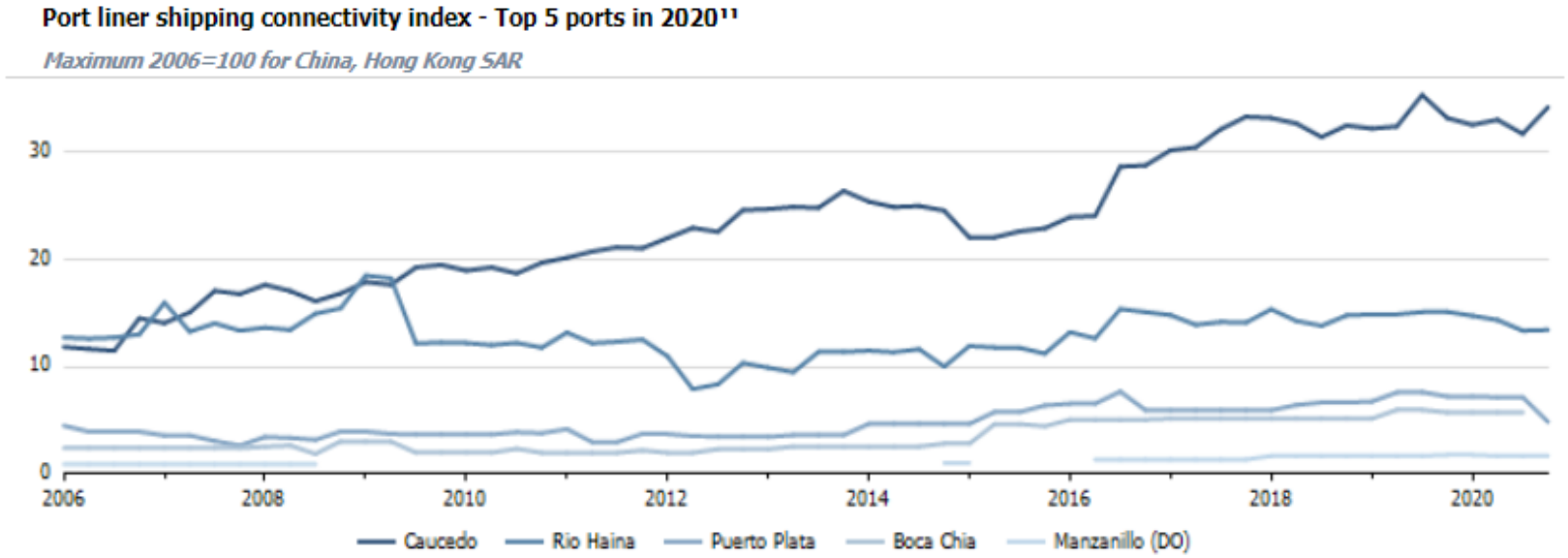
It is the port of call for shipments of agricultural produce like tobacco, sugarcane, rum and coffee.

This port is also popular because of its links to the Cibao Valley which is well known as the country's bituminous coal highway.

The three main ports of the Dominican Republic. Good level of connectivity

- Overall, Dominican Republic's centrality in global merchandise trade is higher than the regional and income benchmarks
- The Caucedo port has LSCI values significantly higher than the rest of the ports, reflecting that it is main port for global shipping and transshipment operations. The import/export in Rio Haina are focused on domestic, regional lines and feeders to ports that are not directly reachable by Caucedo.
- Caucedo is a large size port and has trends that are comparable to other similarly sized ports.
- Haina is second most important port in the country and, in general, has more connections and ships calling at it that its peers
- Puerto Plata, the smallest of the three ports, has the fewest number of shipping lines servicing the port and consequently reflects higher market concentration through its HHI value. Rio Haina and Caucedo both have low market concentration.

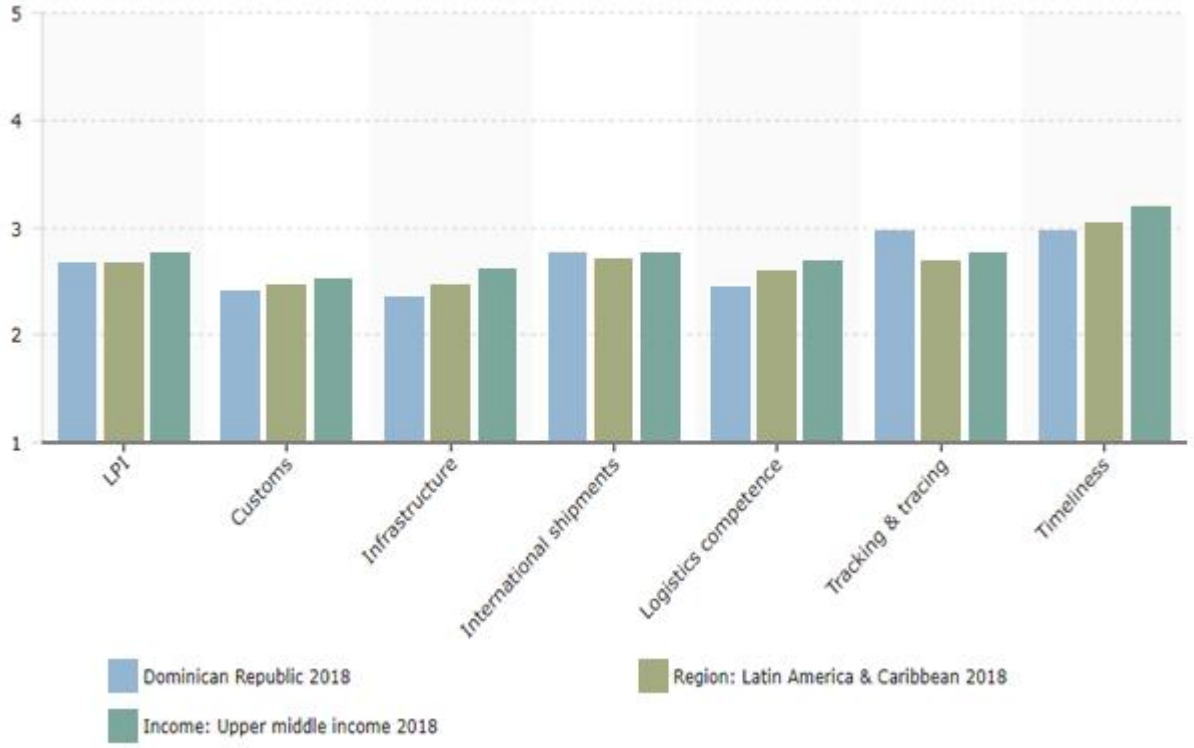
Indicator	LSCI (Index), 2019
Dominican Republic	38.78
LA Median	25.65
Caribbean Median	11.96
Upper-Middle Income median	14.68

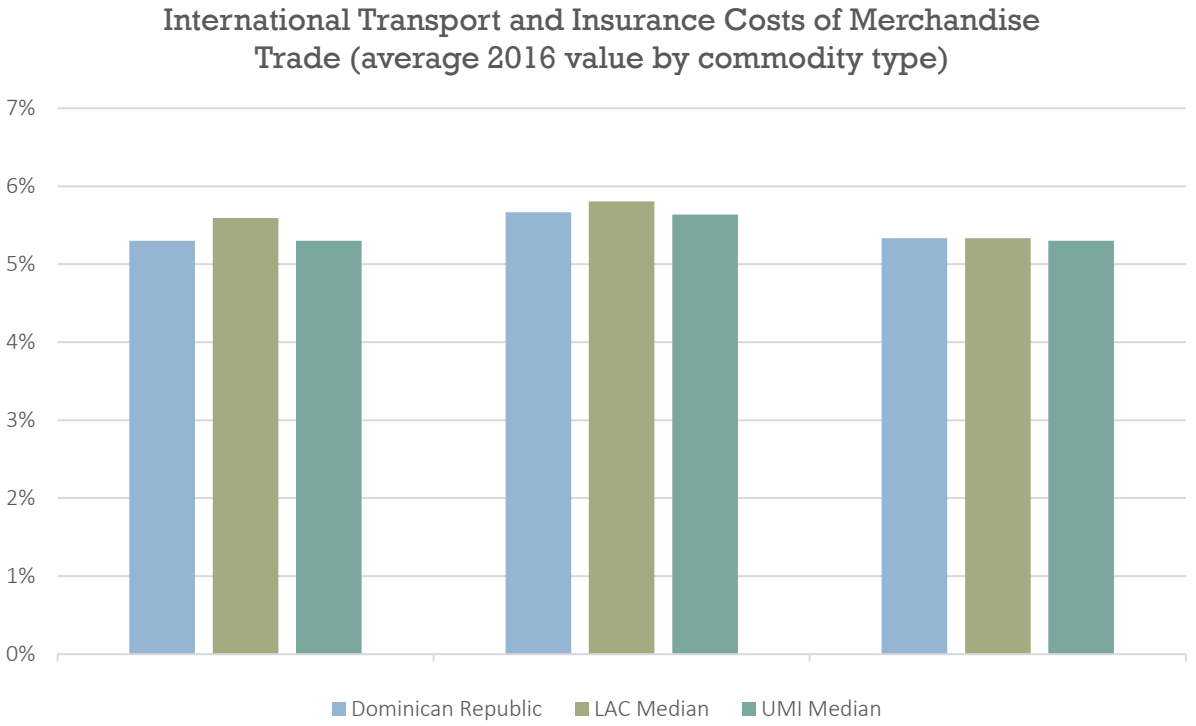


Caucedo was ranked as the 40th best performing container port in the 2020 World Bank Container Port Performance Index, while Rio Haina ranked 146.

Logistics performance in line with regional average

- Logistics performance in the country seems to be comparable to the regional average, but lower than the income benchmark.
  - Specifically, improvements are needed in customs, infrastructure and logistics competence.
- Shipping costs in Dominican Republic are slightly lower than the regional and income benchmarks for container and dry bulk but comparable for liquid bulk.





Note: ITIC is a ratio representing what the proportion of transportation and insurance costs are from the total value of goods in the CIF from customs declarations.

Airports and civil aviation. A crucial sector for a country that is highly dependent on tourism

Dominican Republic has 19 airports, including 8 international airports

- Punta Cana International Airport
- Las Americas International Airport
- Gregorio Luperon International Airport
- Casa de Campo International Airport
- Cibao International Airport
- Samana El Catey Airport
- La Isabela International Airport
- María Montez International Airport

The Dominican Republic Civil Aviation Institute (IDAC) is the civil aviation authority of the Dominican Republic, which regulates and promotes civil aviation in the Dominican Republic; it is the air navigation service provider, contributing to the economic development of the nation

International Aviation

- Punta Cana (7.3 million passengers) and Las Americas (3.5 million passengers) are the two main international airports serving the country.
- Punta Cana International is owned by Grupo Puntocana and Las Americas International is owned by Vinci Airports. Both are private companies.
- A new international airport, Bavaro IA, a privately developed project costing over $200 million, is anticipated to be completed in 2024

Key Takeaways

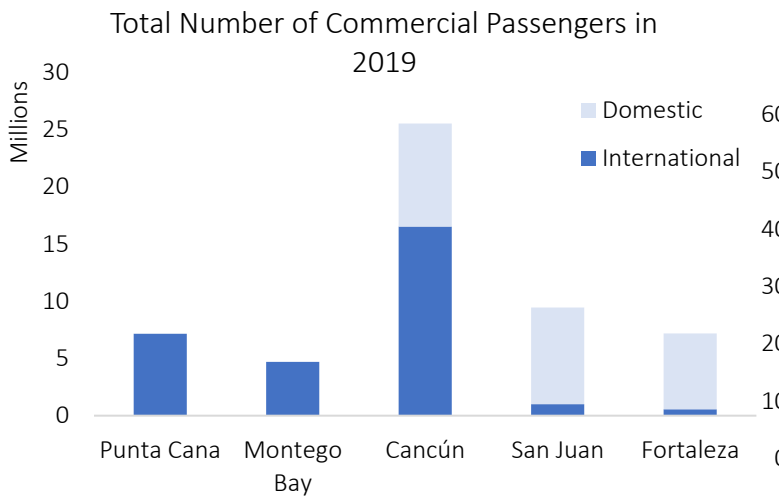
- Given its location and popularity as a hotspot for tourism in the Caribbean, air transport is important for connecting Dominican Republic to economically important cities around the world
- Compared to its peers, Punta Cana's connectivity to well-connected cities can be improved. On the other hand, amongst its peers, Santo Domingo is considered well-connected to well-connected cities.
- Dominican Republic generally outdoes peers in the oversight of regulatory standards for airports, however there is room for improvement in operations

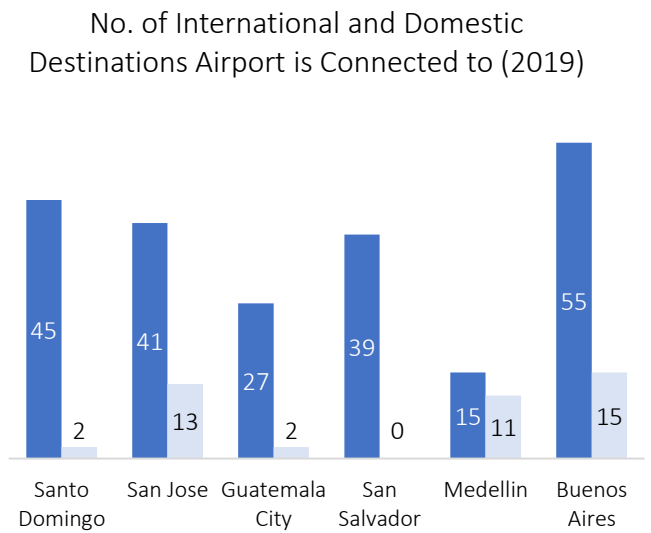
Las Americas International Airport. Well connected in relation to its peers

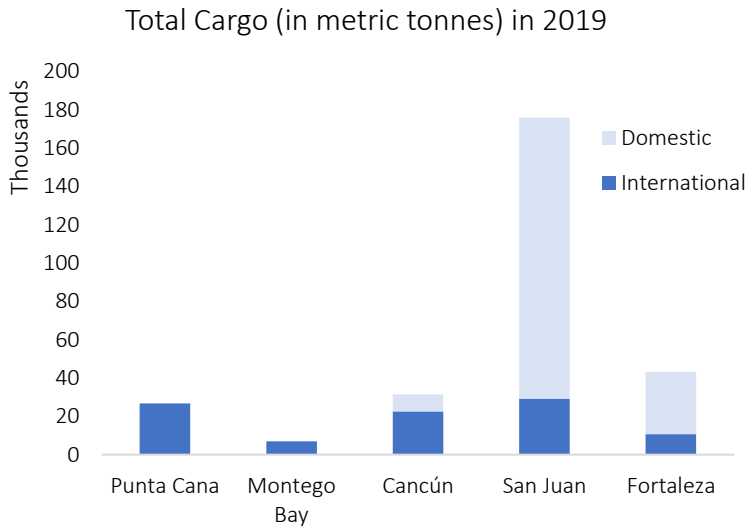
Highlights

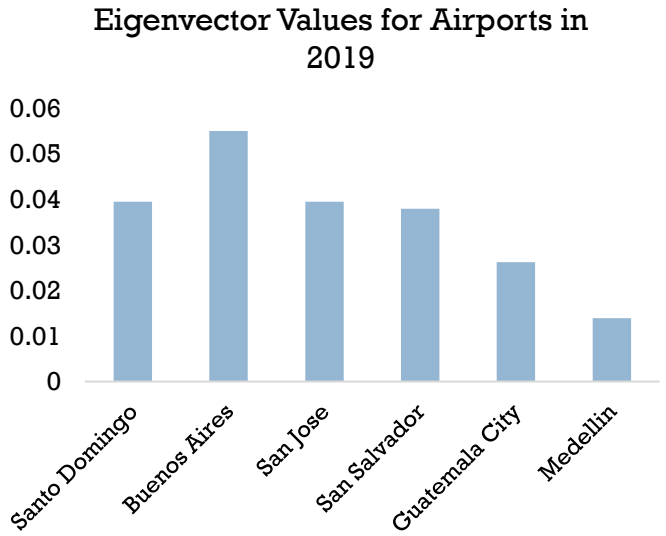
- Like most of its peers, **Santo Domingo** has a large majority of international passengers and freight passing through its airport (with the exception of Medellin)
- A significant majority of destinations which Santo Domingo is connected to are international
- Santo Domingo compares well in connectivity to its peers (except Buenos Aires), but, overall, the connectivity is on a decline, especially when passengers are considered.
  - **Eigenvector centrality** for a city characterizes how well connected is the city to other well-connected cities. However, it does not differentiate international from domestic connectivity.
- Overall, Dominican Republic effectively implements safety regulations compared to other peer countries, though there is room for improvement in operations

SDQ	Las Americas International	Santo Domingo	Dominican Republic
SJO	Juan Santamaria International	San Jose	Costa Rica
SAL	El Salvador International	San Salvador	El Salvador
GUA	La Aurora International	Guatemala City	Guatemala
MDE	Jose Marie Cordova	Medellin	Colombia
EZE	Ministro Pistarini	Buenos Aires	Argentina









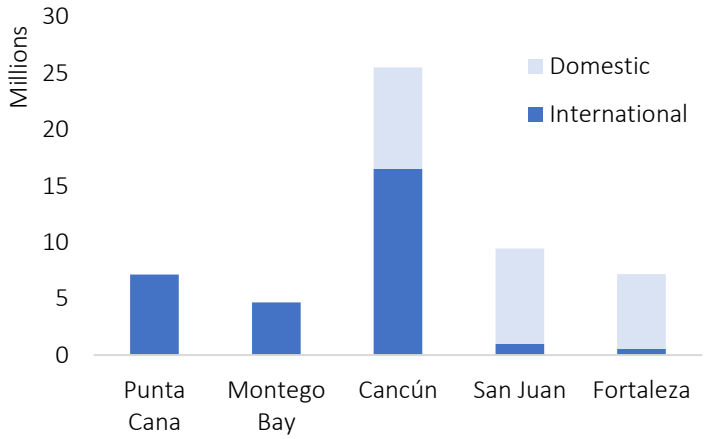
Punta Cana International Airport. Behind its peers in terms of connectivity with a declining trend in the last decade

Highlights

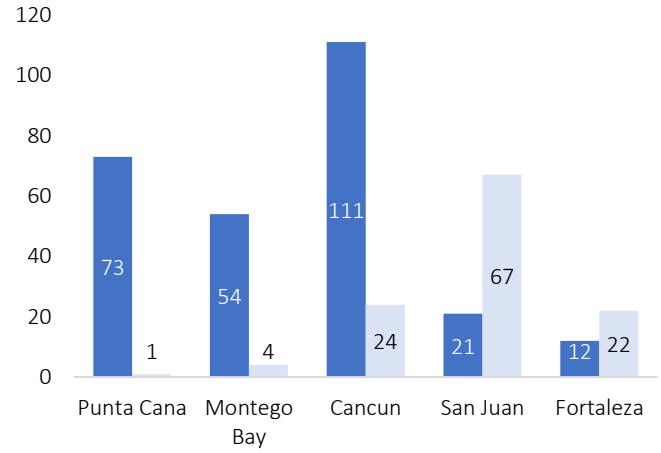
- **Punta Cana** is relatively well connected to international destinations
- A significant majority of destinations which Punta Cana is connected to are international
- Punta Cana is behind its peers in terms of connectivity and has seen a declining trend in the last decade
- Compared to its peers, Punta Cana has a more significant majority of international passengers and freight passing through its airport
- Overseas departure tax revenue has generally increased, however it is an extremely small portion of the total government tax revenue

PUJ	Punta Cana International	Punta Cana	Dominican Republic
MBJ	Sangster International	Montego Bay	Jamaica
CUN	Cancun International	Cancun	Mexico
SJU	Luis Muñoz Marin International	San Juan	Puerto Rico
FOR	Pinto Martins International	Fortaleza	Brazil

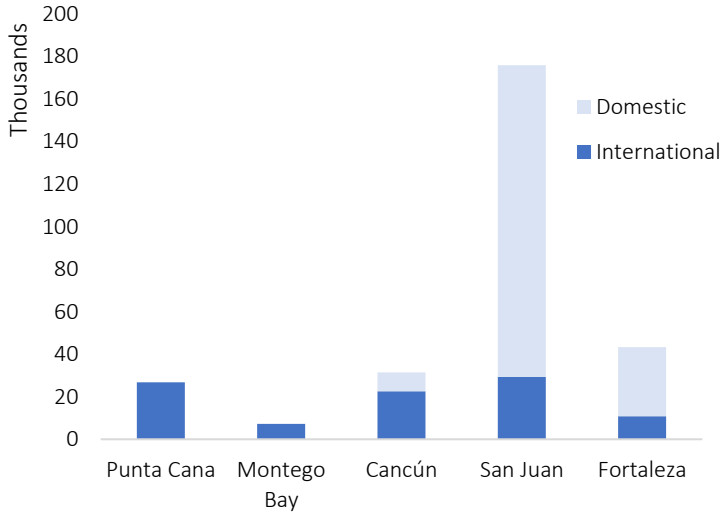
Total Number of Commercial Passengers in 2019



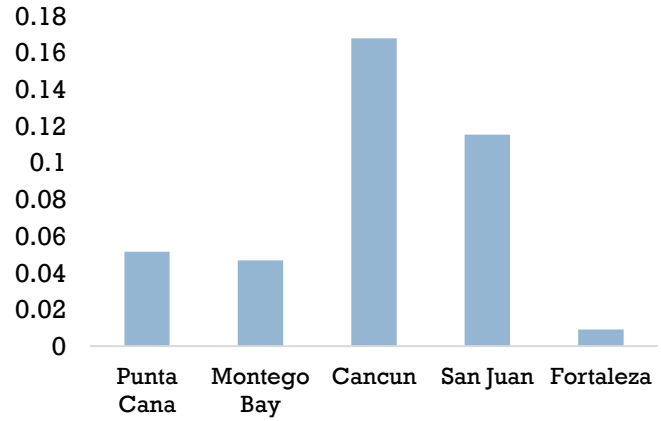
No. of International and Domestic Destinations Airport is Connected to (2019)



Total Cargo (in metric tonnes) in 2019



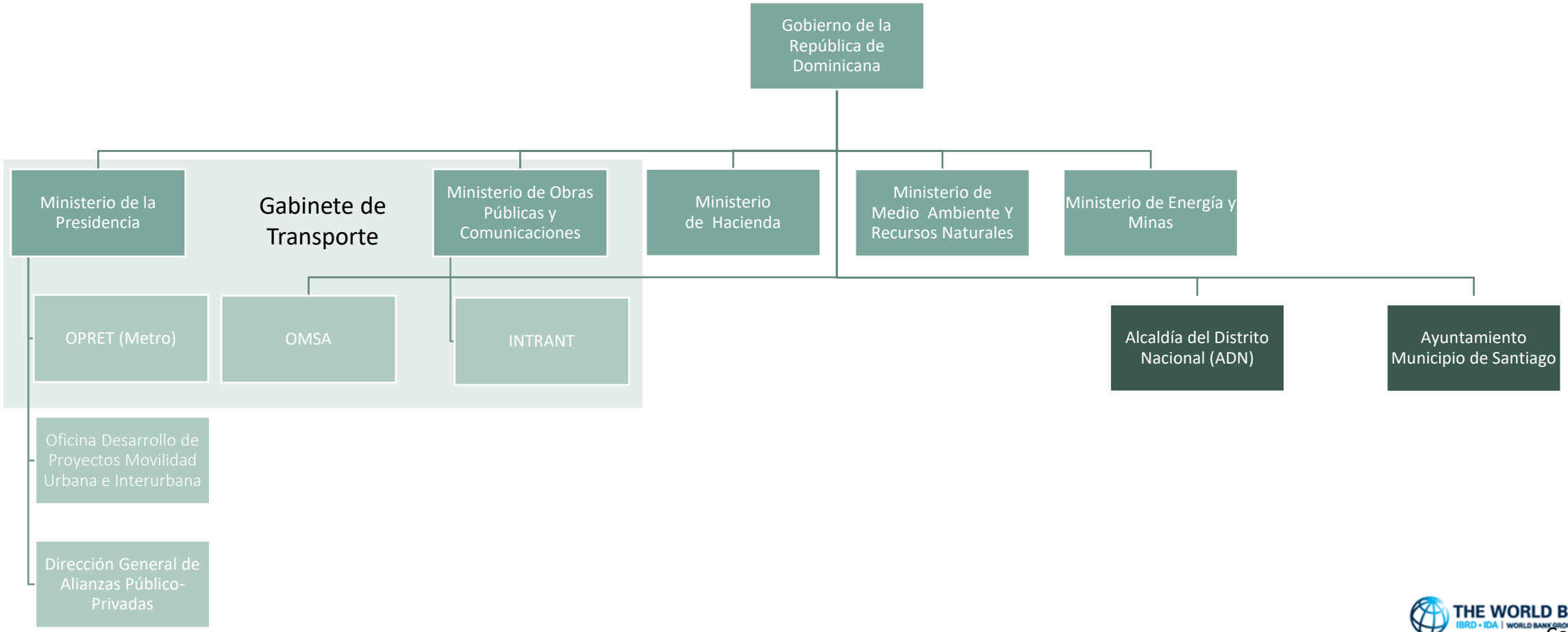
Eigenvector Values of Airports in 2019



Governance, funding, financing and private sector participation in the transport sector

Governance. Transport is managed by the central government

- The Dominican Republic is a centralized country, transport is managed by the central government.
- The main players are Ministerio de la Presidencia (Ministry of the Presidency), Ministerio de Obras Públicas y Comunicaciones – MOPC (Ministry of Public Works and Communications) and Instituto de Tránsito y Transporte Terrestre – INTRANT (Institute of Transit and Land Transport), created in 2017. OPRET was created to build and operate the metro. OMSA is the public bus operator.
- Main decisions are taken by the Gabinete de Transporte, led by the Ministerio de la Presidencia.



The Ministry of the Presidency is the most important in terms of infrastructure investment and the one making decisions regarding urban transport projects

The Office for the Development of Urban and Interurban Mobility Projects of the Ministry of Presidency

- Is an implementing agency created on June 18, 2021, by Presidential Decree 358-21 to lead the financing and construction of main mobility projects. The Office coordinates the implementation of public policy with INTRANT. The main Trust Fund that is managed by the Office is FITRAM, created to finance the construction of the Metropolitan Train in Santo Domingo and the Monorail in Santiago de Los Caballeros.

The Cabinet of Transport

- This is the meeting place for key decision-makers: Minister of Public Works and Communications (MOPC), Ministry of the Presidency, and the directors of INTRANT, OPRET and OMSA. The Minister of the Presidency is the Chair

The Ministry of Public Works and Communication (MOPC)

- Is the transport authority and is responsible for the construction and maintenance of the road infrastructure. The trust funds: RD VIAL and PARQUEAT RD.are under MOCP

INTRANT

- Created in 2017, is the public transport regulator with a technical team, it is responsible for sustainable mobility, freight, passenger transportation, licensing, road safety transit and mort vehicles. INTRANT manages the FIMOVID Trust Fund. INTRANT has been leading on the Bus Corridor transformation from Concho owners to Bus Company operators. A scrappage program for the replaced vehicles has not been established and support for the bus transformations is needed. INTRANT will tender in June 2022 the contract for the vehicle technical inspection, which would start in 2024 and is also working INTRANT on a PPP for traffic cameras.

Public operators

- OMSA operates 350 buses in the country. OMSA was supposed to become a public-private company, but there are not signs of this happening in the near future.
- OPRET was created to build and operate the metro system and is also responsible for the operation of the Cable Car.

At the local level the main player is the Alcaldía del Distrito Nacional (ADN)

- ADN is responsible for the implementation of Non-Motorized Transport projects and traffic. DISEGETT (National Government) is in charge of traffic fines.
- ADN has improved sidewalks, widening as well as recovery. Lighting has been improved to make walking safer.
- ADN is working on a Restricted Area Zone (ZAR) where cars, trucks are not allowed. Another project ADN is working on is the electric corridors in the colonial city, cars will not be allowed and 7-meter e-buses will transport citizens in this area.
- Parking is coordinated with the PARQUEATE RD Trust Fund.

Funding and Private Participation

Urban Mobility

In 2019 the Greater Santo Domingo Urban Mobility Plan (PMUS) was approved, it was financed by AFD and prepared by SYSTRA.

AFD also received from the Caribbean Investment Facility (CIF) for EURO 10 million for the implementation of the PMUS. Egis is the firm implementing the PMUS.

Currently the plan for e-buses is to have OMSA as operator. The procurement is still unclear.

The government signed a credit contract for EUR $86M with AFD to double the length of Metro's Line 1 (from 3 to 6 cars) to move 6,600 additional passengers per day.

Infrastructure

IDB financed the Plan Nacional de Infraestructura 2020 – 2030, it is the principal planning instrument to guide decision-making for public and private infrastructure investment and is led by the Ministerio de Economía, Planificación y Desarrollo.

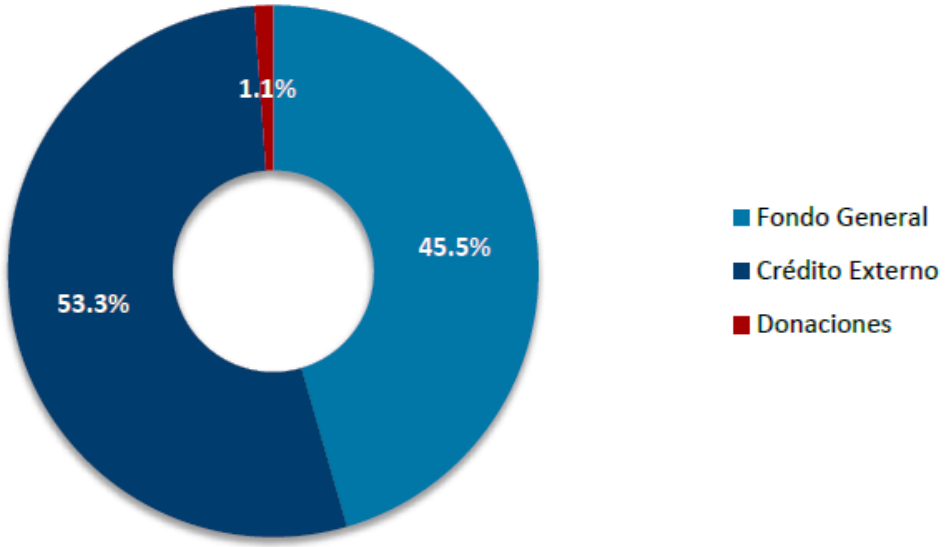
In December 2021, the government of DR signed The Estrategia National de Desarrollo 2030 to expand coverage and improve quality and competitiveness of transport and logistics infrastructure and services and transform the country into a regional logistics hub

The Plan Nacional Plurianual del Sector Público 2021-2024, prioritizes programs and projects to be implemented by the Public Sector along with the required investment to tackle: Ineffective institutions, financial framework dissociated from investment funds and operations/maintenance, lack of integrated transportation infrastructure and services and road safety.

Funding and Private Participation. The Plan Nacional de Infraestructura 2020 - 2030

Plan Nacional de Infraestructura 2020-2030

- For the 7 infrastructure investment priority sectors:
  - 1.334 programs and projects were identified
  - Amounting to USD 37.724 M
- For the Transportation sector:
  - 199 programs and projects were identified
  - Amounting to USD 10.973 M
- The majority of the total 2021-I projects were financed with external credit



SECTOR	NUMBER OF PROGRAMS & PROJECTS	COST (USD M)
Transportation	199	10.973
Electric Energy	290	11.929
Water, Sanitation and Solid Waste	502	5.989
Water Resources and Irrigation	17	2.100
Telecommunications	5	213
Health	119	1.254
Education	202	2.266
TOTAL	**1.334**	**34.724**

Recommendations for the transport sector

Recommendations 1/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Interurban Transport	Inconsistent maintenance of road network leads to increased rehabilitation costs and road safety risks	Enhance road asset management by extending coverage to the entire network under long-term, performance-based contracts (Crema, PPPs)	Assured commitment to road maintenance leading to lower required funding and longer asset lifecycles	Medium	Medium(1)	High
	Land freight transportation inefficient and costly, hurting competitiveness	Expand capacity in the Duarte Corridor; consider alternatives e.g. duplicating the highway, building a rail line, or improving conditions for short sea shipping (cabotage)	Alleviated freight traffic between Santo Domingo and Santiago, improving congestion and safety; potential for lower CO_2 emissions	Medium	Long	High
		Reform the trucking industry: increase formalization and regulation of providers, while ensuring open and contestable freight markets	Higher operational efficiency leading to more reliable and affordable service; improved safety	Medium(2)	Short	Medium
	Inadequate transport connectivity hinders the development of lagging regions	Prioritize rehabilitation and all-season improvements in underserved areas e.g. Southwest and border regions	Increased access to markets and public services of local population, supporting a more equitable territorial development	High	Medium	Medium
	Road network increasingly exposed to extreme weather events	Mainstream climate resilience into road network planning, designs, and management	Wider adoption of proactive interventions and resilient designs, reducing the likelihood of damages and disruption	High	Medium(1)	High

(1) Requires extensive capacity building .
(2) Requires careful stakeholder engagement and management.

Recommendations 2/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
	Imprudent behaviors of vehicle operators magnify risks to road users' safety	Boost the enforcement of vehicle registration, speed limits, helmet usage, and driving under influence; intensify educational campaigns	Reduced frequency of road accidents due to behavioral factors	Medium	Medium	High
	Inadequate infrastructure amplifies risks to road users' safety	Prioritize remediation of inadequate road accesses, intersections, signaling, and user protection features, informed by effective use of crash data	Safer infrastructure leading to lower frequency death or injury from road accidents	Medium	Long	High
		Increase resource mobilization towards investments in road safety, including in partnership with the private sector		High	Medium	High
	Inadequate compliance in the replace of old vehicles which consume more fuel, break down often, and pose a safety hazard	Implement a scrapping program for private and commercial vehicles	Increased operational safety, lower energy consumption, reduced pollution and CO_2 emissions	Medium	Short	Medium
		Adopt stricter age, safety and emissions requirements for used vehicle imports		High	Short	Medium
		Implement best practices in vehicle scrappage programs Implement best practices in the design of the vehicle inspection PPP	Reduced frequency of road accidents due to vehicle malfunction; reduced pollution and CO_2 emissions	High	Short	Medium
	Slow progress in improving road safety outcomes	Strengthen INTRANT's leadership to empower it to coordinate implementation of national road safety plan	Accelerated implementation of the PENSV 2030 and its subordinated strategies (motorcycle, pedestrian)	High	Short	High

Recommendations 3/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Urban Transport	Inadequate coordination and fragmented decision-making authority are obstacles to effective delivery of major urban transport projects	Clarify institutional leadership and accountability to define priorities and deploy resources, based on demand geared at implementing the strategy laid out in the Santo Domingo mobility master plan	Accelerated implementation of major PMUS projects besides the metro expansion, i.e. BRT corridors	Medium	Short	High
		Provide capacity building on the public investment and PPP project cycles, to ensure technical quality and alignment of efforts among multiple stakeholders	More effective institutional cooperation towards delivering the prioritized pipeline	Medium	Medium	High
	Public transport modal shares remain modest in a context of increasing motorization and congestion	Accelerate the expansion and integration of public transport networks in main cities, while improving reliability and comfort; implement integrated fare system	Modal shift from private vehicles to public transport; reduced congestion, pollution, CO_2 emissions, and improved safety	Medium	Long	High
		Improve feeder bus services, enhancing coverage, frequency, and reliability to support increasing ridership to mass transit Traffic Demand Management measures to reduce car use and achieve modal shift		Medium	Medium	High
	High age of urban fleet increases operational costs, aggravates pollution, and worsens congestion due to frequent breakdowns	Support fleet renewal by incentivizing scrapping/replacement/recycling of old vehicles; stricter new and used vehicle standards. International best practices	Increased operational efficiency, reduced fuel consumption, air pollution, and CO_2 emissions	Medium	Short	Medium
		Scale up the successful transition of informal providers (Conchos) to formal transit line operators	Less congestion, pollution, higher safety; improved livelihoods for concho drivers	High	Medium	Medium

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Recommendations 4/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Urban Transport	Growing congestion reduces travel times for public transit as well, hampering ridership	Evaluate additional traffic demand management measures, such as congestion pricing, with the potential to mobilize revenues for funding public transit	Increased average travel times for all modes, with lower fuel consumption and CO_2 emissions	Low(1)	Long	High
	Urban sprawl with low densities unfavorable to service by mass transit	Clarify institutional roles and build capacity for implementing transit-oriented development solutions in cities. Empower a national agency to run TOD projects.	Urban densification around transit network nodes increases ridership and property values, while reducing km traveled and CO_2 emissions	Medium	Long	High
	Informal street parking bolsters private motorized transport, while clogging streets to the detriment of pedestrians	Ensure an adequate supply and pricing of parking space; implement paid on-street parking to mobilize revenue while strictly enforcing penalties for irregular parking	Better managed urban space that is more friendly to active mobility, and potentially restrictive to private car commuting thus reducing congestion and CO_2 emissions	Medium	Medium	High
	Urban configuration that is hostile to pedestrians and cyclists, reinforcing the desire for a private vehicle on safety and convenience grounds	Elevate the profile of non-motorized transport infrastructure, assigning high priority to implement cycleways and pedestrian master plans in cities	Increased uptake of active mobility trips, entailing lower CO_2 emissions; reduced safety risks to cyclists and pedestrians	Medium	Long	High
		Non-motorized mobility policy should emphasize user safety, convenience, and integration with public transport (bicycle parking, walkability)		High	Short	High

(1) Traffic demand measures could face fierce popular resistance in the Dominican Republic and would therefore require careful planning and communication.

Recommendations 5/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasability	Timeframe	Criticality
E-Mobility	Lack of readiness to accommodate penetration of private electric vehicles	Ensure the definition of industry standards, including environmental aspects such as battery disposal; ensure adequate coverage of charging network	Friendlier environment for mass adoption of private electric vehicles	Low	Long	Medium
	Fast-growing CO_2 emissions from transport, fueled by increasing motorization and stark congestion, threaten fulfillment of NDC	Assess adequacy of electricity grid to accommodate additional demand from large-scale adoption of electric vehicles	Improved preparedness to implement policies in support of electric mobility transition, required for attaining emissions reduction commitments	Medium	Medium	High
		Work, in parallel with the bus corridor transformation, on the Implementation of a e-bus corridor.		High	Short	Medium
		Build capacity at INTRANT and other entities to prepare for e-mobility transition; develop and implement a clear roadmap for adoption of electric vehicles in urban transport		High	Medium	High
	Difficult financial viability of spontaneous e-bus adoption by operators	Reform the business model to allow for separation of asset ownership and operations; provide adequate incentives to e-bus acquisition and financing; ensure the provision of appropriate maintenance and charging facilities	Leaner business model allows bus operators to focus on service, while capital investors reap returns over the asset's useful life; auxiliary facilities allow seamless operations	High	Short	High

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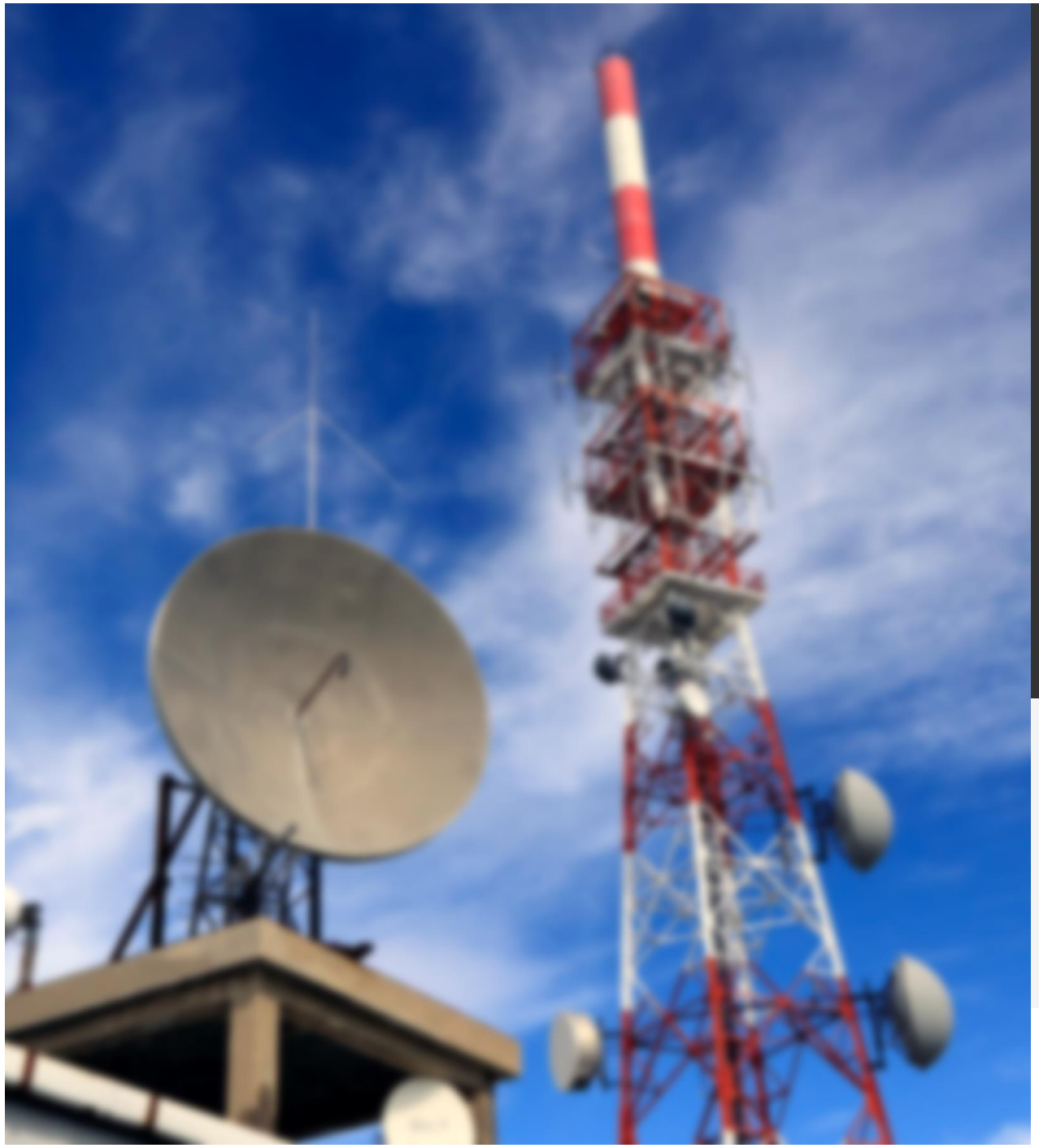


Digital

Is the digital sector delivering in Dominican Republic?

This section covers the following issues

1. Overview of the digital sector in Dominican Republic
2. Governance, funding, financing and private sector participation in the digital sector
3. Deep dives: competition assessment of the internet subsea cable market
4. Recommendations

Overview of the digital sector

The telecommunications in the Dominican Republic present high levels of concentration in various segments.

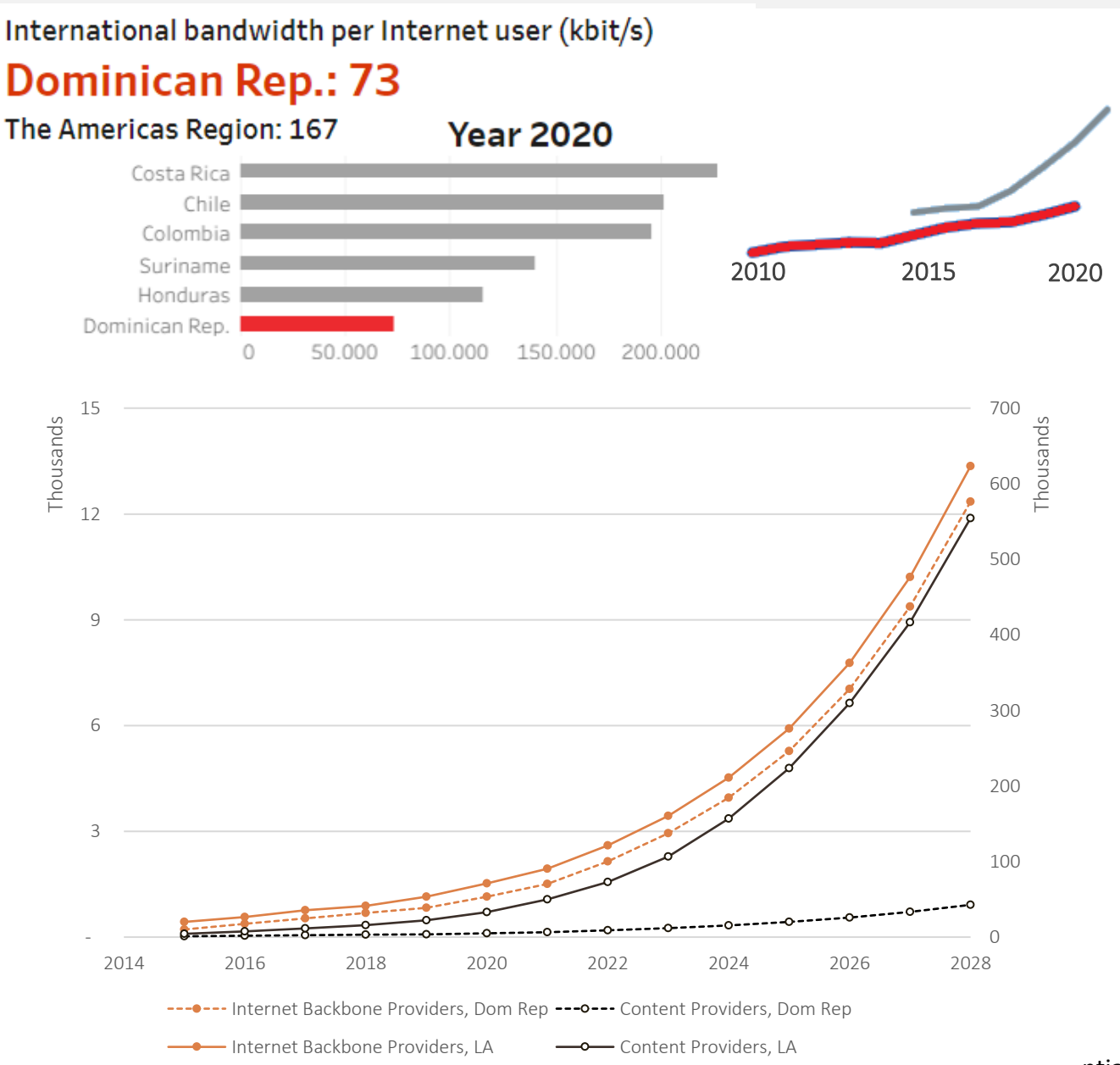
Key aspects

- Two consortiums manage 5 subsea cables connecting the Dominican Republic: America Movil and C&W Networks.
- America Movil is a vertically integrated firm providing services in the first, mid and last mile of the telecom industry.
- Four firms provide carrier services in the mid mile. However, only in 60.3% of the municipalities, the service is available.
- Claro, a subsidiary of America Movil, provides 72% of the services for fixed telephony; 62% of pre-paid lines for mobile services, and 59% of post-paid lines. Claro also holds 59% of total subscriptions for internet and 57% for Pay TV.
- The Dominican Electric Transmission Company (ETED) manages the National Network of Optical Fiber (RNFO). It has 1,540 km of optical fiber cables along the electric network. However, RNFO is not yet connected to any submarine cable and provides transport services mainly for government agencies.

Consumption of international bandwidth below LAC average, with major participation of internet backbone providers

Trends in the consumption of international bandwidth in the Dominican Republic and Latin America

- Consumption of international bandwidth in the Dominican Republic (DR) is below the average for the American Continent. In DR, average consumption was 73 kbps per user by 2020, while the average for the continent was 1.3 times bigger.
- Worldwide, content providers are acquiring a major role in the consumption of international bandwidth—this is also a fact for Latin America. By 2021, content providers consumed 64% of the international bandwidth in LA, while Internet Backbone Providers (IBP) consumed the remaining 36%. Forecasts for 2028 indicate that content providers will gain a larger share.
- By 2021, in the DR, IBP consumed 92% of total international bandwidth, and content providers, the remaining 8%. In contrast to LA, in the DR, forecasts indicate that IBP will keep practically the same proportions.
- In the Dominican Republic, there are two subsea cable projects planned to land into the country.
  - Cable Sam-1 (Telxius) is already operational in LA, and it was planned to connect the DR. However, the connection is not yet effective.
  - Cable BSCS (Blackburn Technologies) is planned to be operative by 2023.



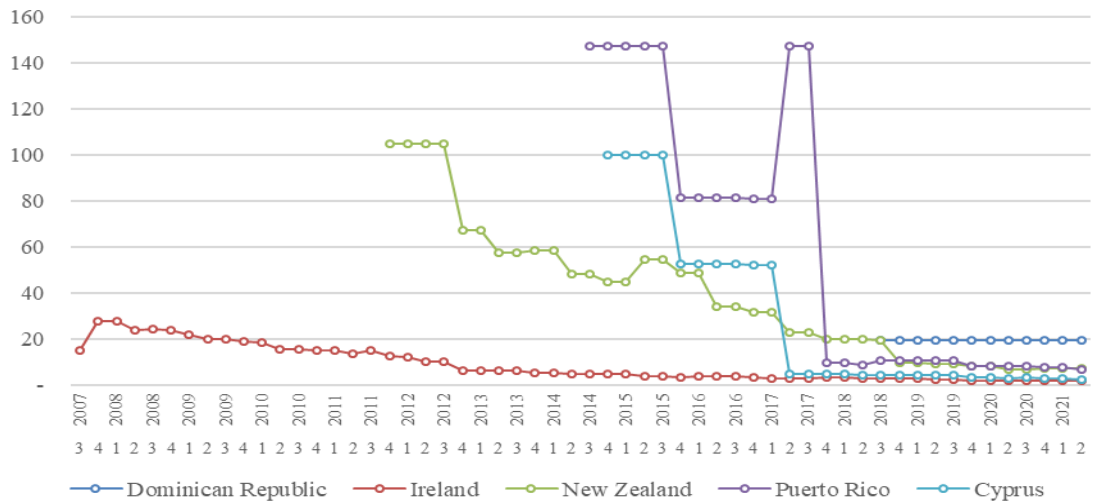
Source: OECD 2020 / WB 2018

What do average IP transit prices indicate regarding the level of competition in the Dominican Republic?

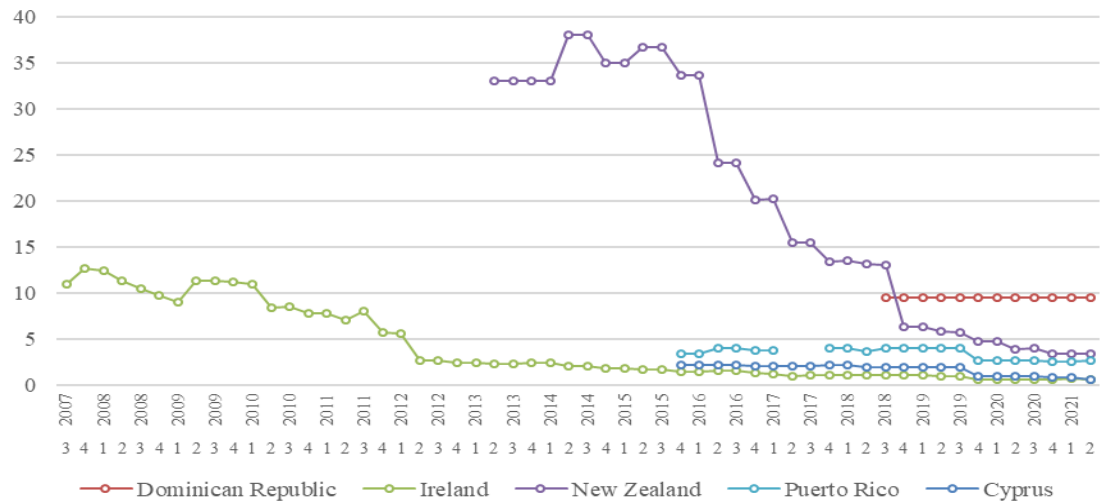
Prices for international bandwidth (IP-transit) provided by submarine cables are above the average of Latin American countries and peer islands across the world.

IP transit prices do not follow the downward international trend. In contrast, they were stable in nominal terms for the last four years. This outcome could be the result of a set of structural characteristics influencing market players' behavior.

Evolution of bandwidth prices for IP transit with 200 CDR
Circuit GigE, $/mbps, Quarterly



Evolution of bandwidth prices for IP transit with 2000 CDR
Circuit 10 GigE, $/mbps, Quarterly

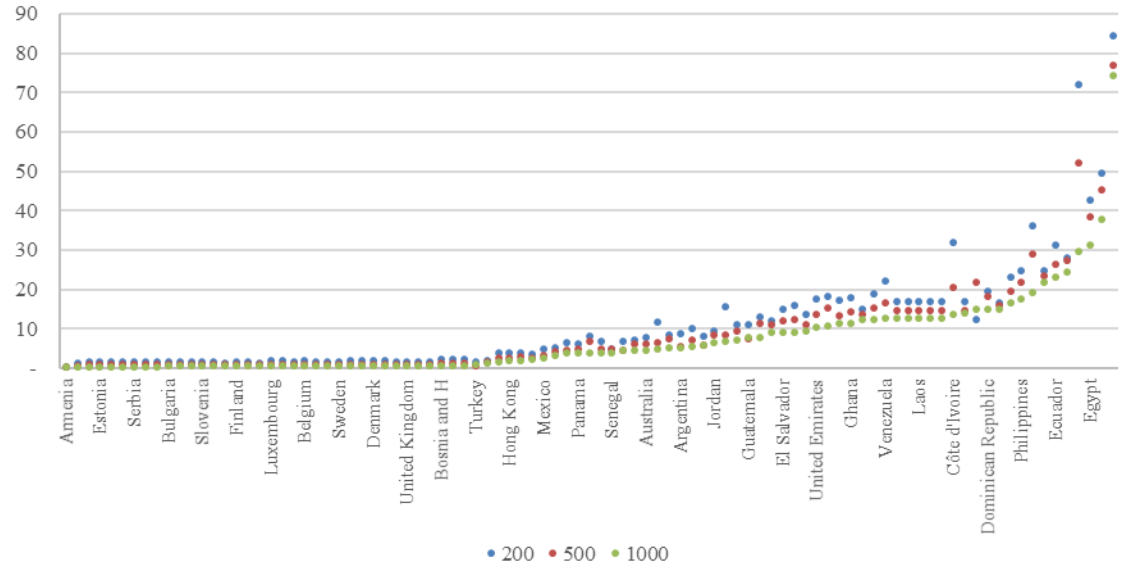


What do average IP transit prices indicate regarding the level of competition in the Dominican Republic?

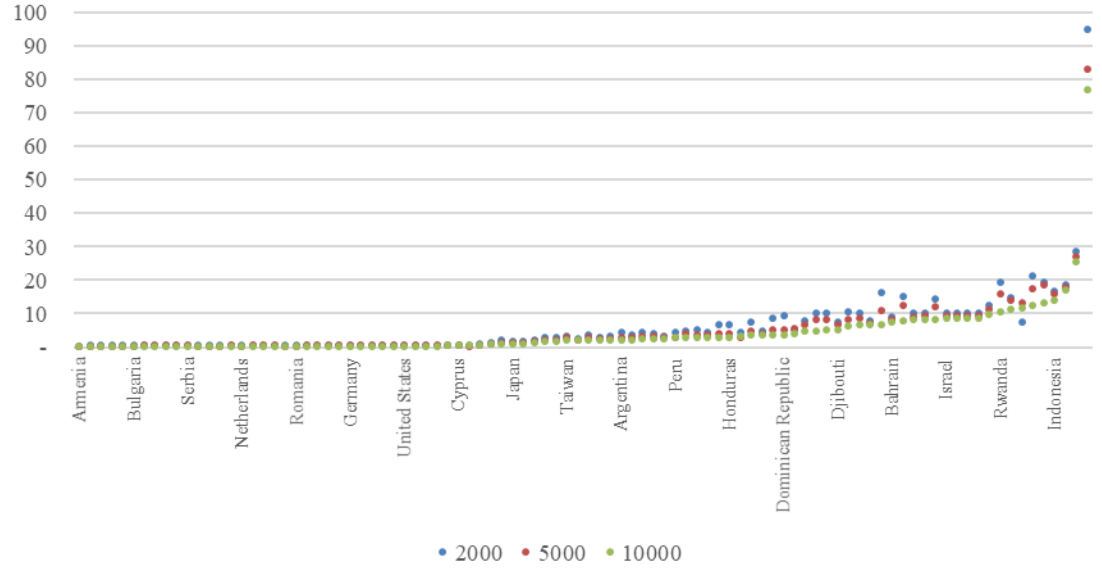
Moreover, IP-transit average prices in the Dominican Republic are among the highest in the world for equivalent speed transfer technologies. However, for faster technologies relative prices for the Dominican Republic become more competitive.

Structural conditions may include the degree of market concentration, the institutional capacity, the regulatory environment, the existence of barriers of entry, and incentives for investment, among others.

IP-transit prices according to committed data rate (CDR) and technology GigE. 2021 2Q
$/mbps



IP-transit prices according to committed data rate (CDR) and technology 10 GigE. 2021 2Q
$/mbps



Source: TeleGeography (2022)

International bandwidth in the Dominican Republic: Key Findings

Average prices for the provision of international bandwidth (IP transit prices) in the Dominican Republic (DR) are among the most expensive in the Latin American Region, but also at a worldwide level.

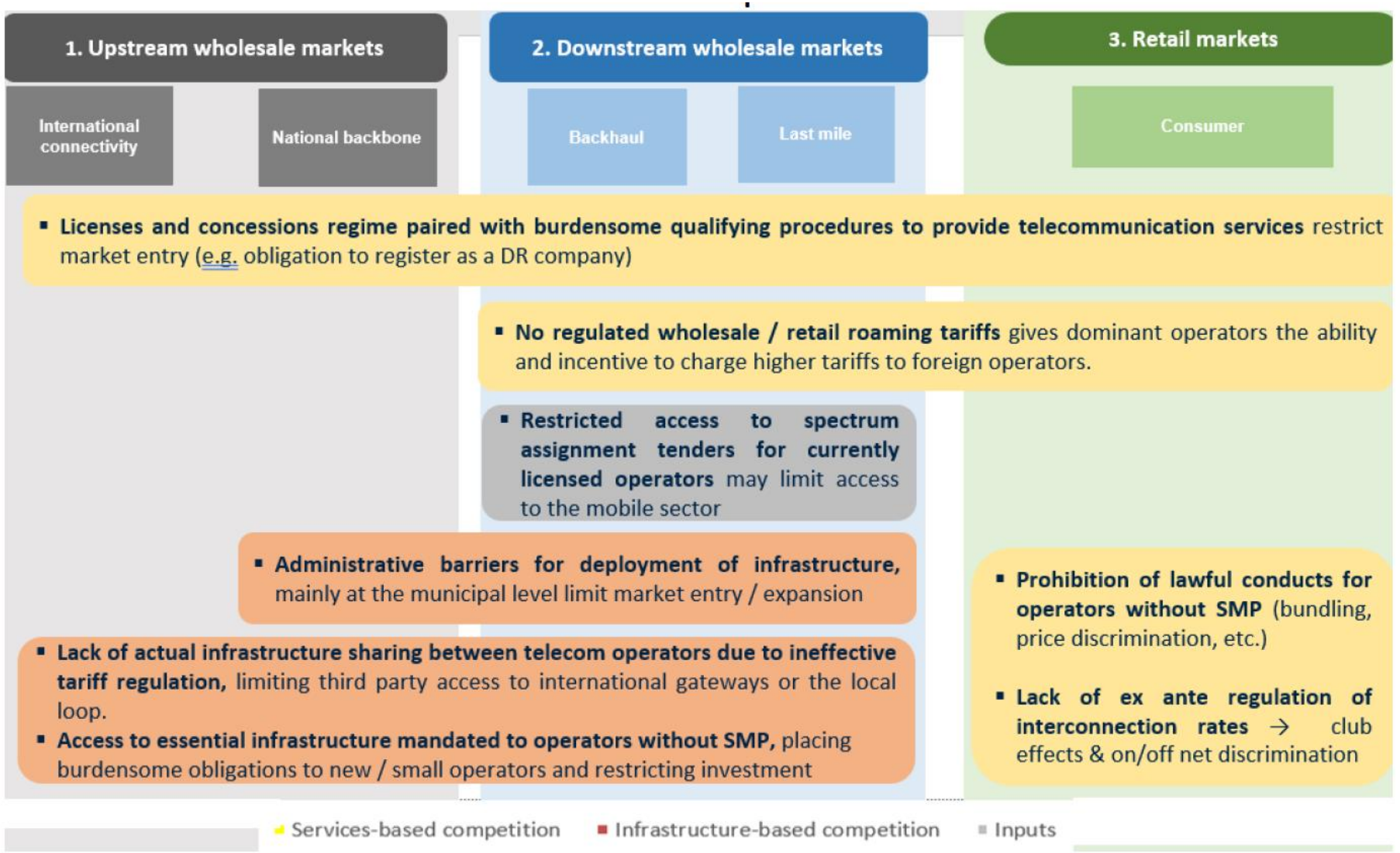
- IP transit prices in the DR do not follow a decreasing trend as international experience suggests. Average prices have remained fixed for the last four years.
- Bandwidth is provided through 5 submarine cables and terrestrial interconnection from Haiti. However, two consortiums operate subsea cables, which indicates high concentration levels, increasing the risk of collusion.
- Geographical market assessment suggests that there are four subnational markets in the DR: in Puerto Plata there is a duopoly market structure while in Punta Cana, Santo Domingo and Haina there are monopolies.

Structural conditions in the Dominican Republic would have negative impacts on the incentives for investment on submarine cable networks.

- The regulatory framework for laying and preserving subsea cables in the Dominican Republic is not complete. This could reduce incentives for investments.
- Complex regulatory formalities could create significant barriers to enter.

Governance, funding, financing and private sector participation in the digital sector

Several competition barriers exist in all segments of the value chain.



Source: World Bank Group Global Competition Policy Team.

The two main challenges are competition and taxes

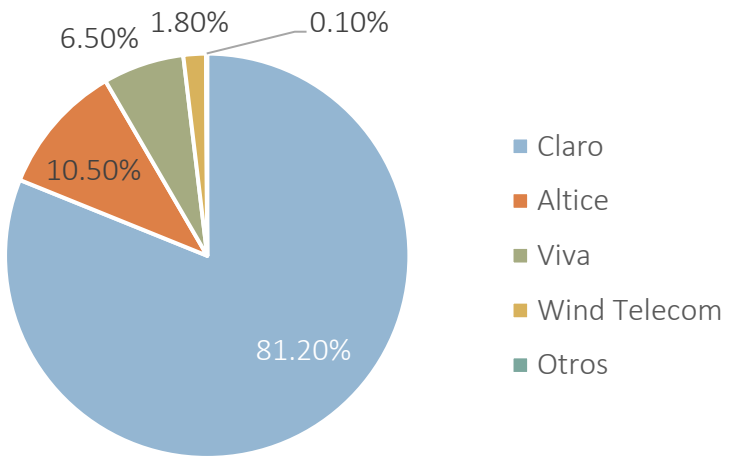
Competition: Claro leads the fixed and mobile telephony market, as well as the fixed broadband market. The fixed, mobile and internet markets are concentrated.

Mobile telephony market

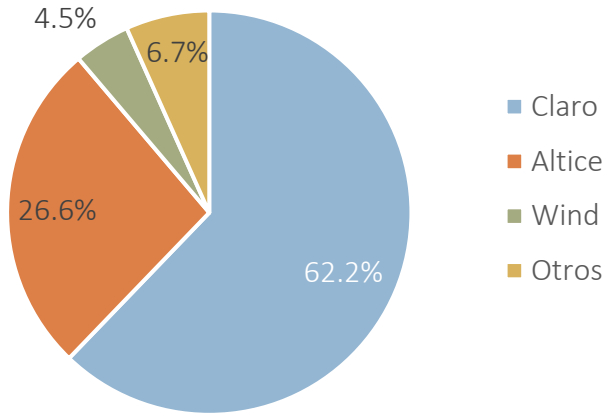
Operador	Propietario	Servicios	Tecnología y Espectro	Participación de Mercado
Claro	America Móvil	Telefonía y Banda ancha Móvil	GSM GPRS EDGE 850 MHz / 1900 MHz - UMTS HSPA+ 850 MHz - LTE 1700 MHz / 2100 Mhz	58,2
Altice	Altice Hispaniola	Telefonía y Banda ancha Móvil	GSM GPRS EDGE 900 MHz/1800 MHz/1900 MHz - UMTS HSPA+ 900 MHz - LTE 1800 MHz / 1900 MHz	36,3
Viva	Trilogy	Telefonía y Banda ancha Móvil	GSM GPRS EDGE 1900 MHz - UMTS HSPA+ 1900 MHz - LTE 1700 MHz / 2100 MHz	5,5

Source: Telesemana

Fixed telephony market



Fixed broadband



The two main challenges are competition and taxes

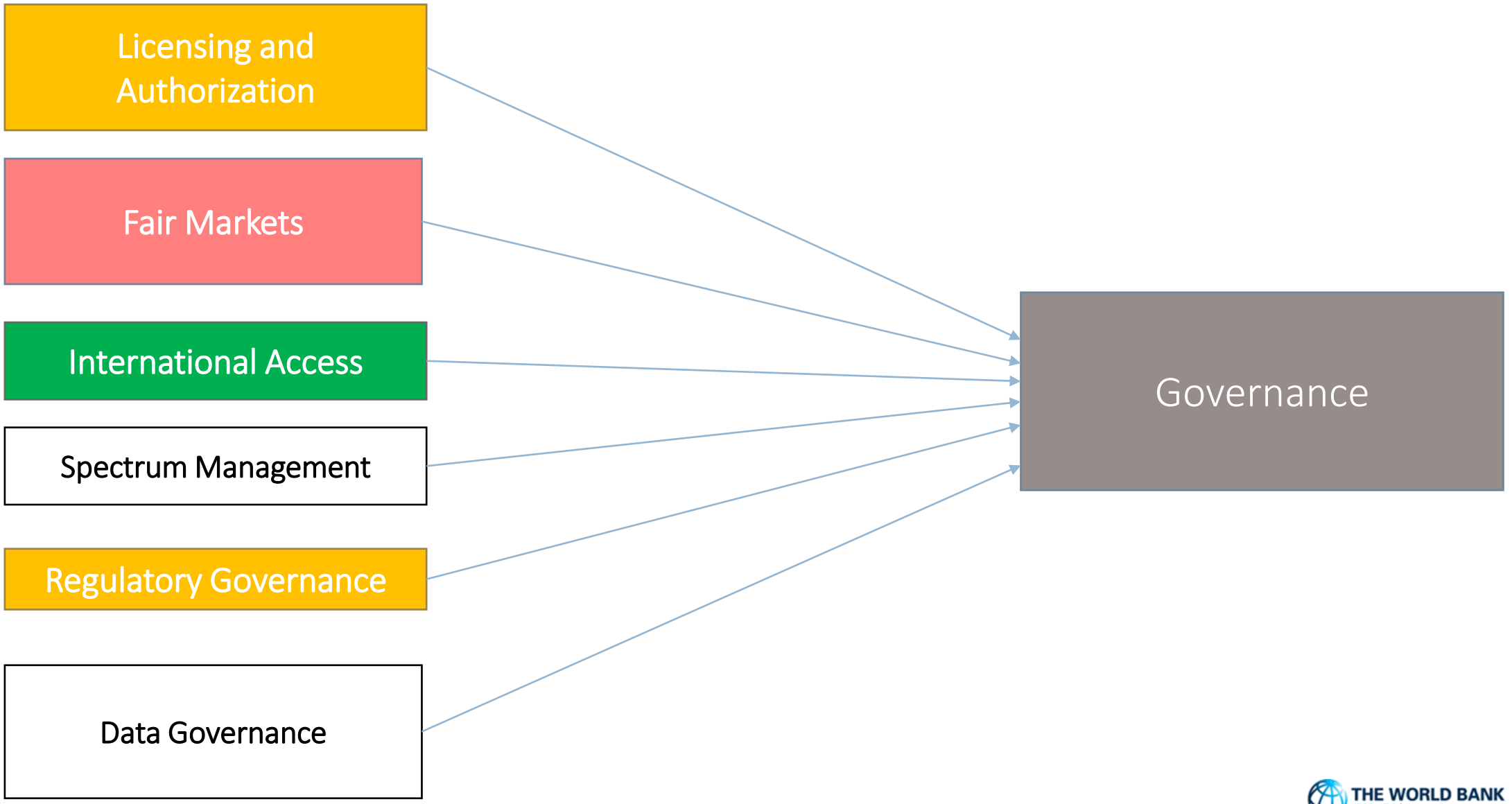
Licenses: Claro and 5G concession/operating licenses of frequencies.

- Claro company will contribute 53.1 million dollars for two decades of concession, while the Altice company will contribute 20.6 million that guarantee 14 years of spectrum use.

Taxes: second country in Latin America that taxes telecommunications services the most, with 30% direct taxes.

- To clients: 18% Tax on the Transfer of Industrialized Goods and Services (ITBIS), 10% Selective Consumption Tax (ISC) and 2% Contribution to the Development of Telecommunications (CDT).
  - ISC is only present in 6 countries in LAC
- To MNOs: 27% of Income Tax.
  - In addition, they must pay the municipalities for the deployment of their networks, for administrative costs, permits and authorizations.

Relative to regional and income group benchmarks, Dominican Republic could improve on several indicators in terms of governance



Deep dive: competition assessment of the internet subsea cable market

The Dominican Republic has access to several submarine cable links and fiber optic cables running through all major cities.

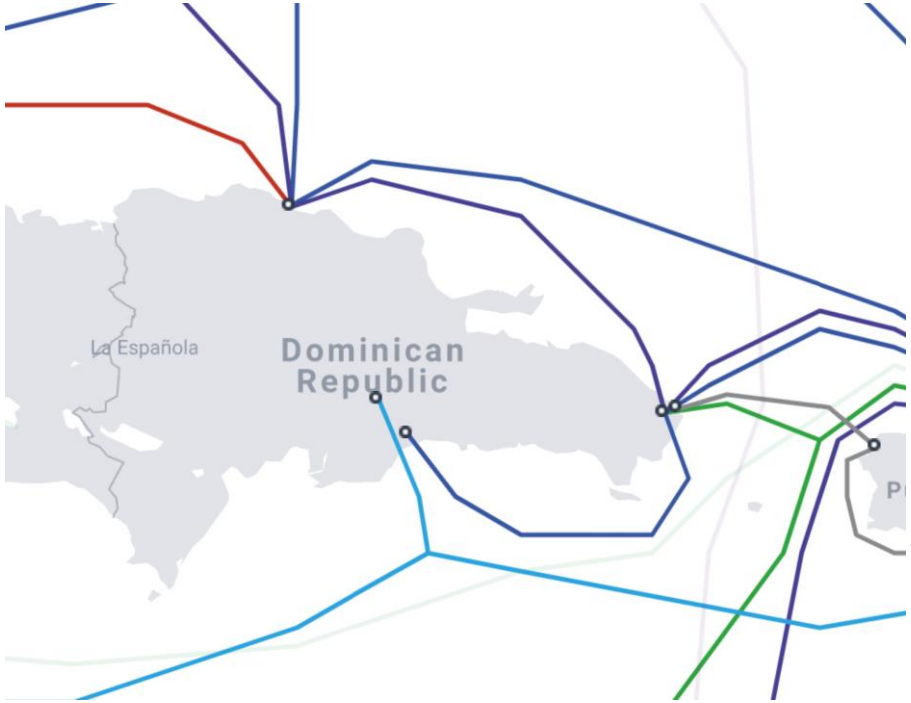
Submarine cable systems

The Dominican Republic is well-connected to 6 submarine cable systems with a planned connection in 2023 to the Boriken Submarine Cable System (BSCS).

1) AMX-1: 2014 - 17,800 km
2) Antillas 1: 1997 - 650 km
3) ARCOS: 2001 - 8,600 km
4) East-West: 2011 - 1,750 km
5) Fibralink: 2006 - 1,000 km
6) South America-1: 2001 - 25,000 km
7) BSCS: 2023 - 670 km

Fiber optic

Fiber optic cables run through most major cities in the country, with several planned links to lesser populated areas.



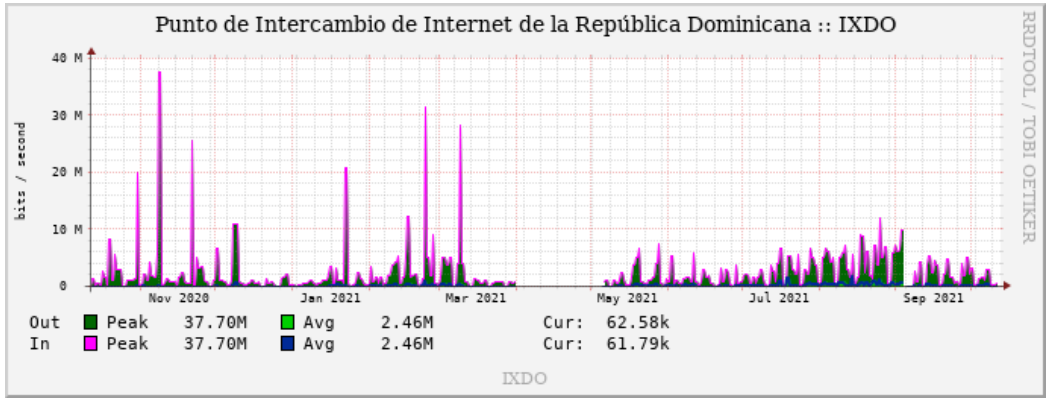
Source: Telegeography, ITU, Indotel

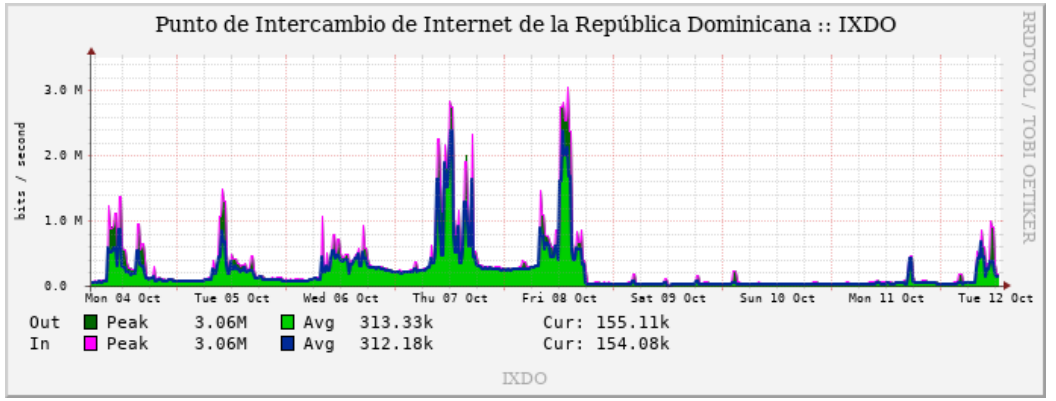
In terms of data infrastructure, there are two IXPs, but no colocation centers or cloud on-ramps

The Dominican Republic has **two active IXPs**, one set up in 2005 and another more recently set up in 2020.

Traffic flows from the IXDO set up in 2020 (yearly average) is about **2.5 Mbps**, which is quite low and shows an early stage IXP with scope to grow and attract peers.

There are no colocation centers or cloud on-ramps.





Source: PCH

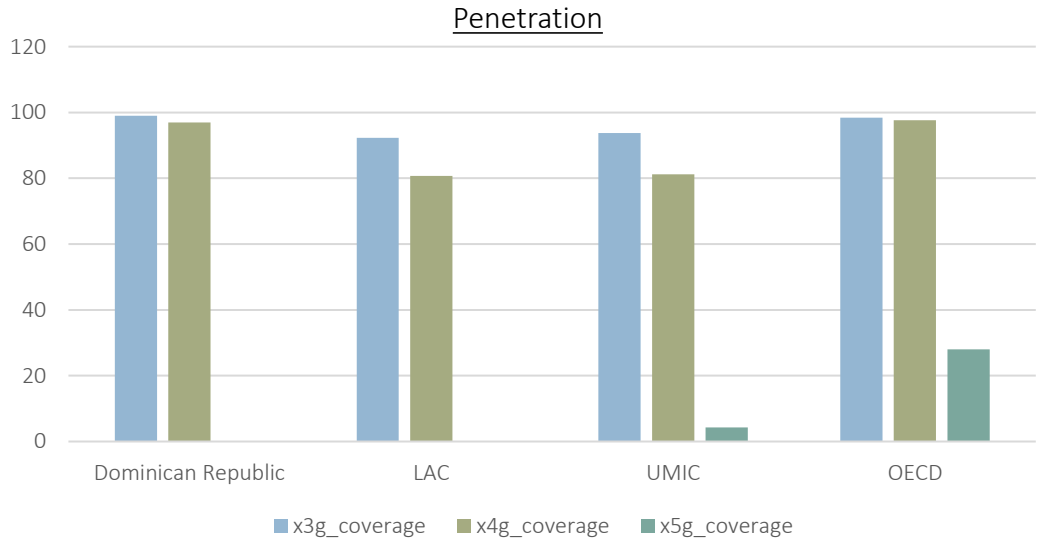
IP	FQDN	Ping	ASN	Organization
45.184.132.20		No	AS23520	Columbus Networks
45.184.132.25		No	AS263212	NETWORK ACCESS POINT DEL CARIBE - DR
45.184.132.35		No	AS28053	ONEMAX S.A.

3G and 4G coverage comparable to OECD benchmarks. The country is yet to roll out 5G but bidding is underway.

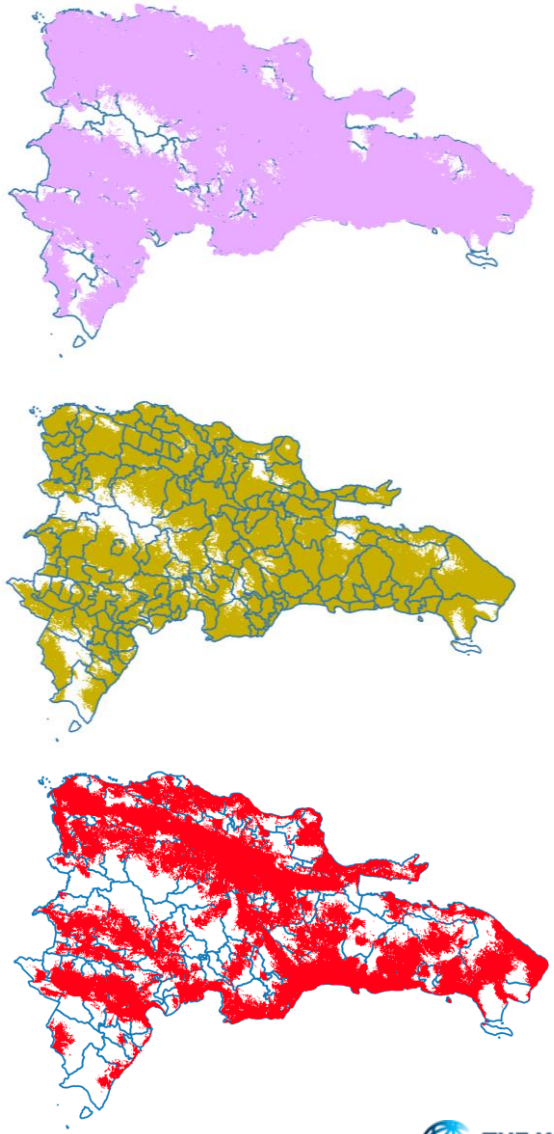
3G coverage is at 99% and 4G coverage at 97% of the population

The country has yet to begin 5G rollout, however concession and operating licenses of frequencies have already been given

The South-West provinces (e.g., Pedernales and Independencia) are the least covered areas, as well as Santiago and northern San Juan



L to R: 2G, 3G, 4G by 2020



Source: Collins Bartholomew, MCE 2020

Fixed-phone and internet at home penetration remains low and unequal amongst regions

Low fixed-phone penetration: Only 36% of all households respondents have a home phone

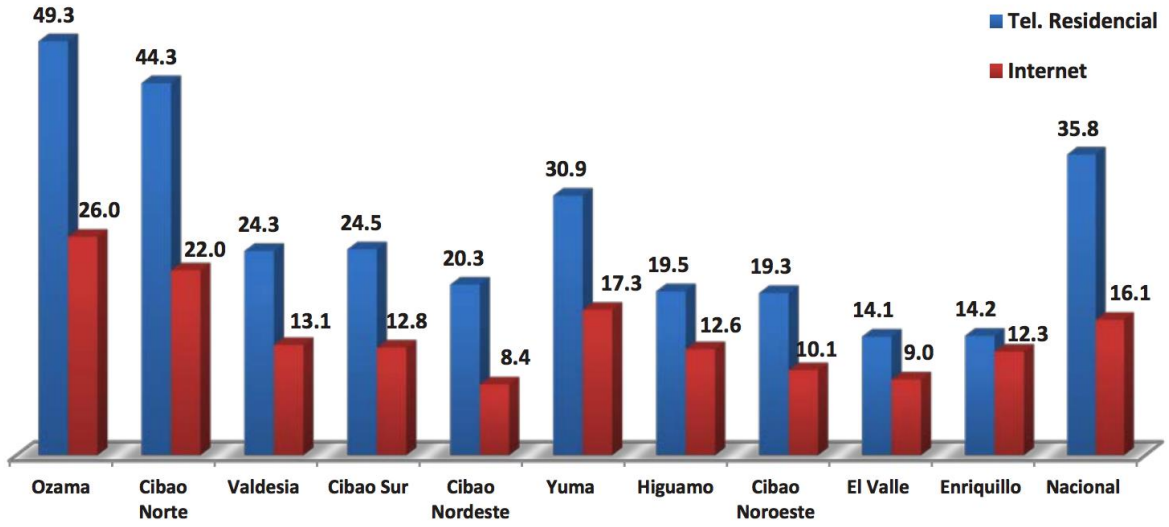
- Households established in **El Valle** have the lowest percentage with 14.1%

Low penetration of internet at home: only 16.1% of households have internet

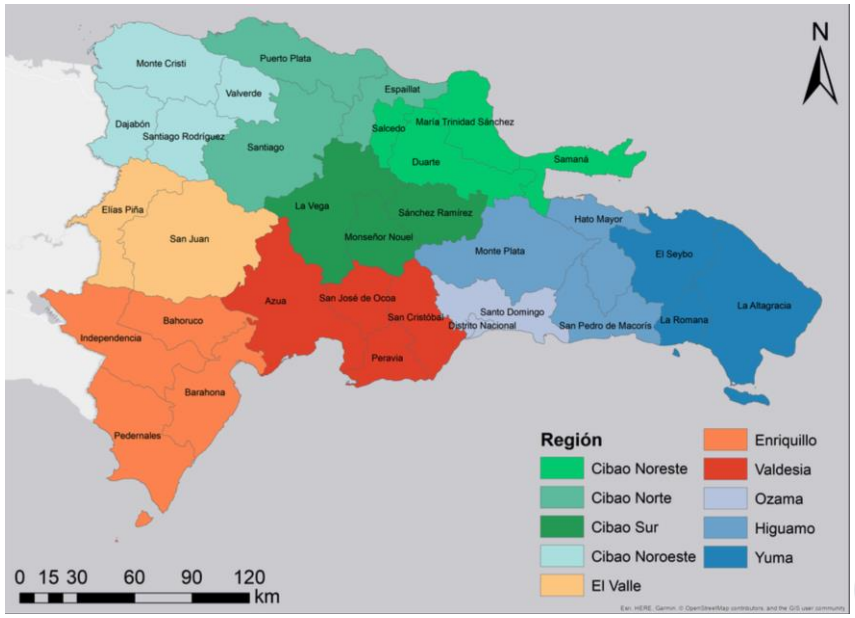
- **Cibao Nordeste** is the region where the lowest percentage of households have internet access (8.4%).

Handset ownership: 80.5% of the heads of households surveyed have a mobile phone.

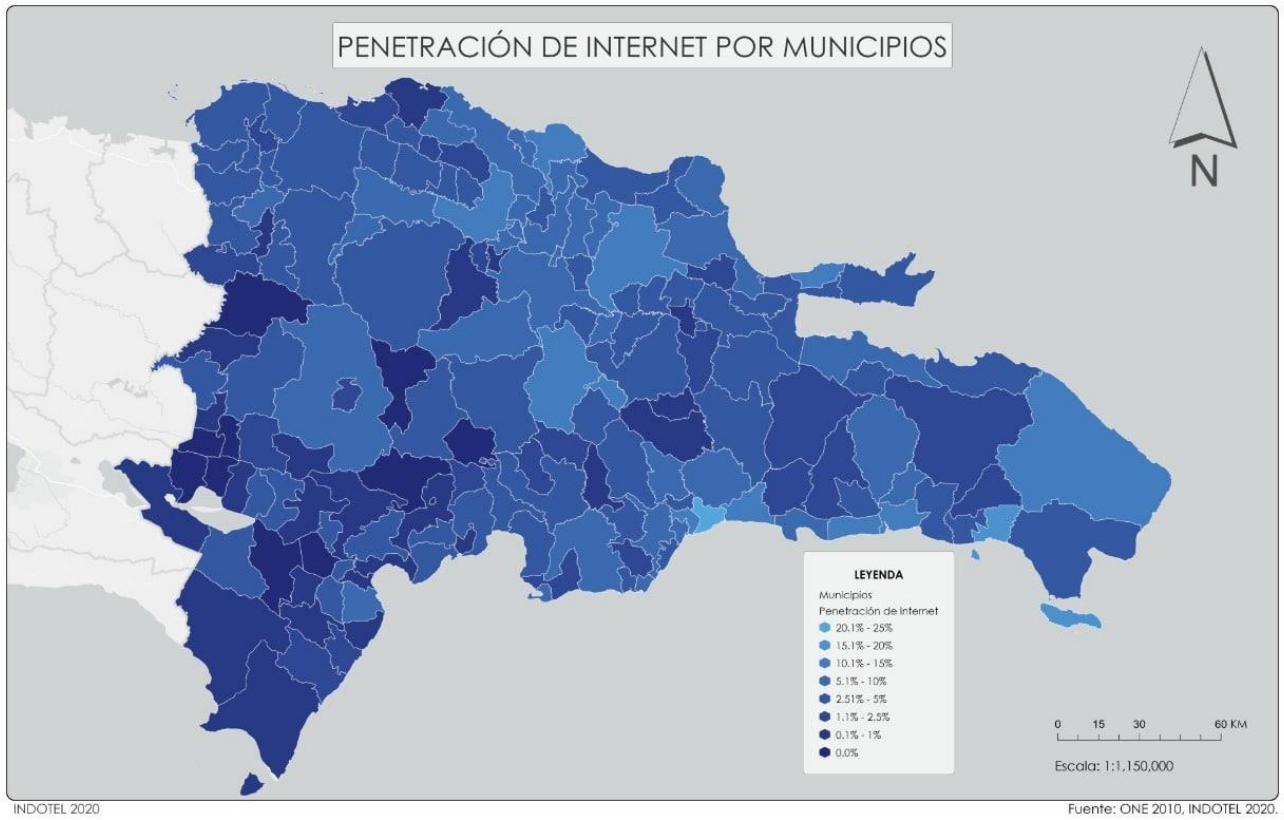
- **El Valle** (86.9%) and Cibao Nordeste (81.7%) have the highest values.



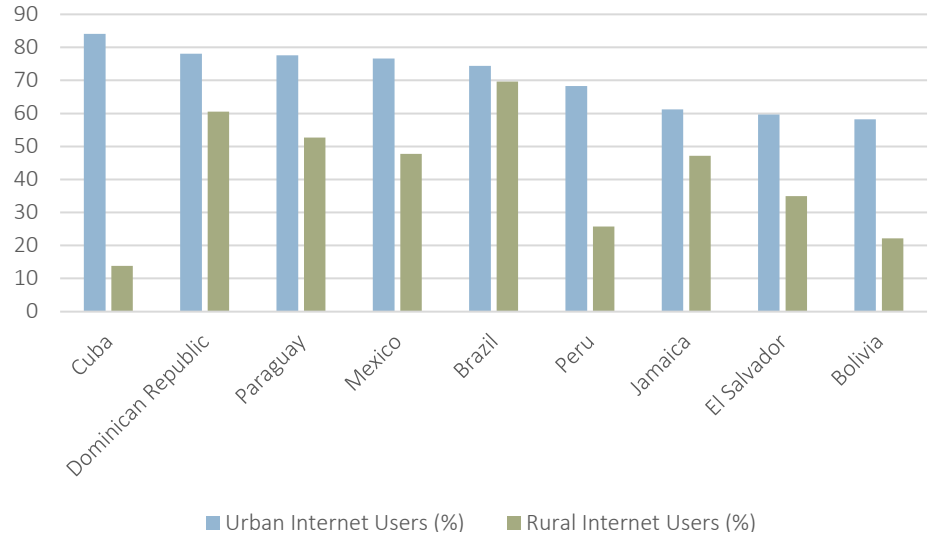
Source: ESEH, 2015



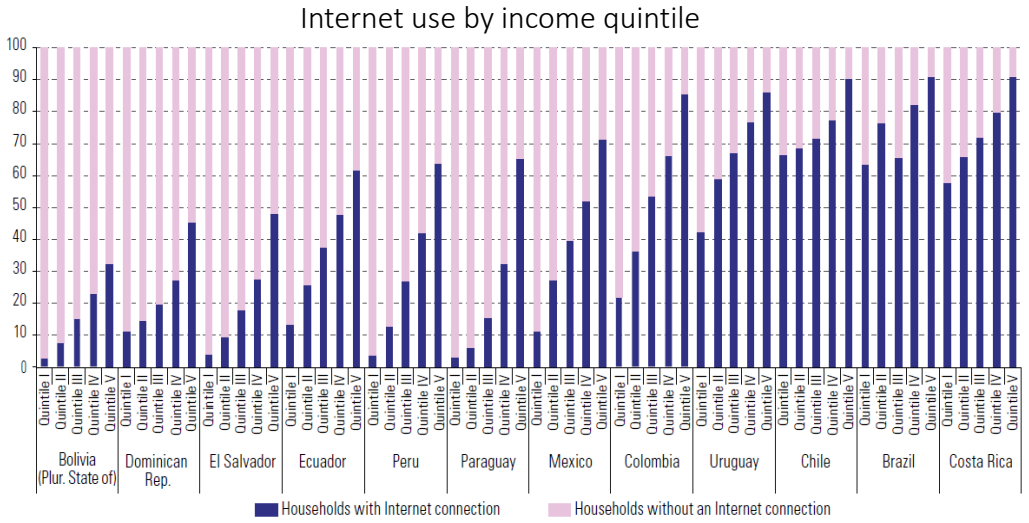
Usage is lower than regional and income group benchmarks, with rural-urban and large income quintile gaps



Source: Indotel, 2020



Source: ITU, 2019



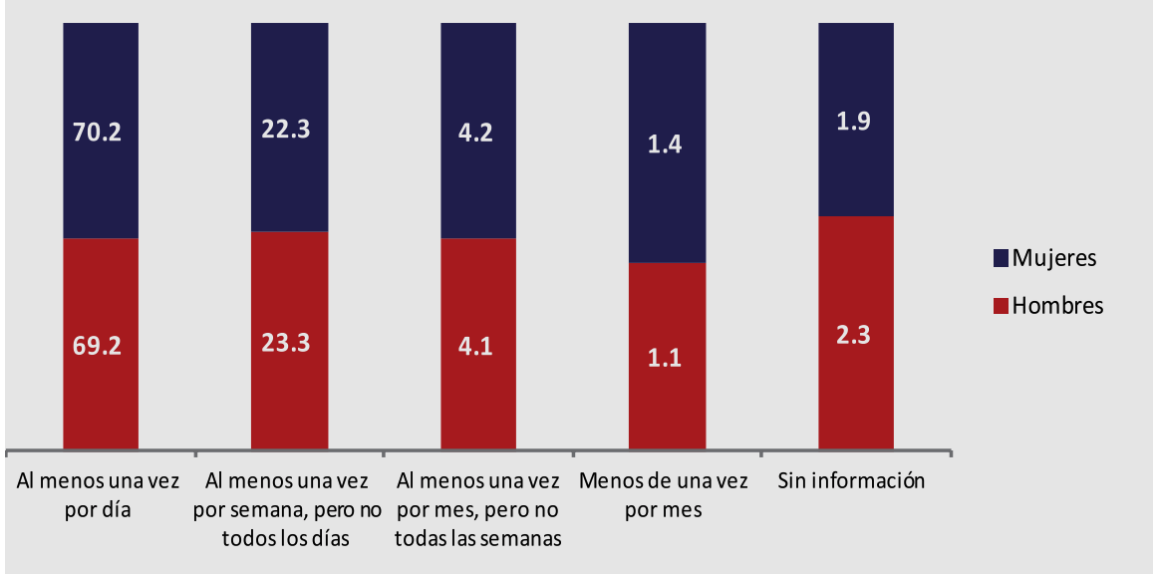
Source: ECLAC, 2019

The gender gap continues closing but not so the skills gap

By 2017: -0.2 for the use of computers, -0.9 for the use of the internet, and no gap in the use of cell phones.

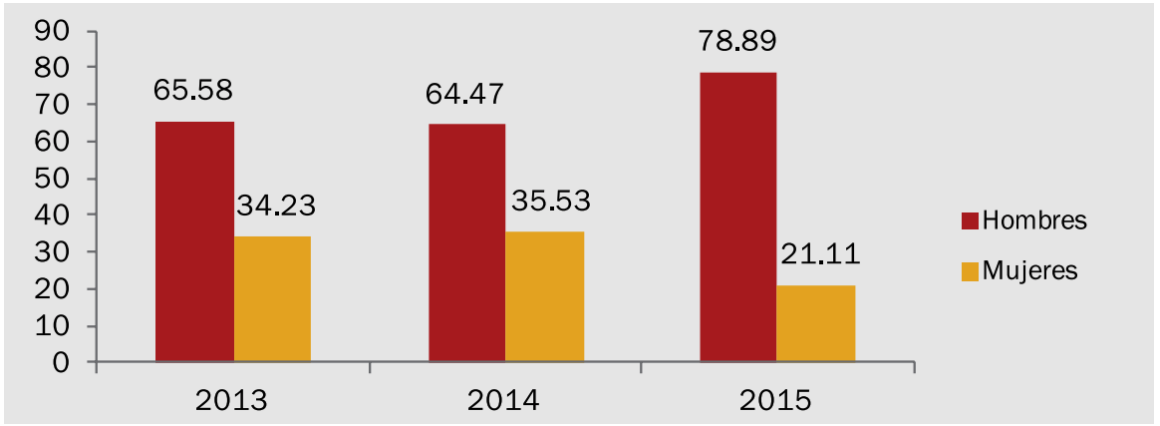
In 2013 and 2014 the gap was of around 30 pp and, by 2015, this almost doubled, positioning itself at about 58 percentage points.

Percentage composition of the population 12 years and over who use the internet, by frequency of use



Source: ENHOGAR, 2015 & Oficina Nacional de Estadistica

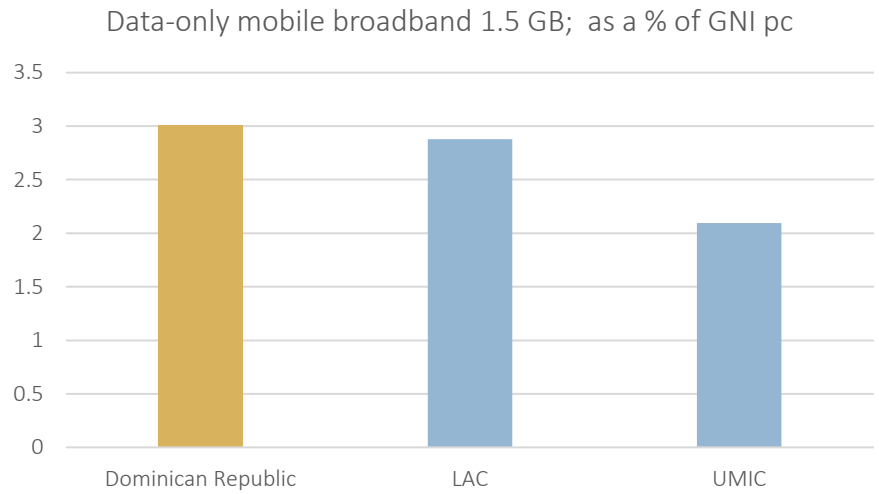
Percentage of enrollment in majors related to ICT, by gender, 2013-2015

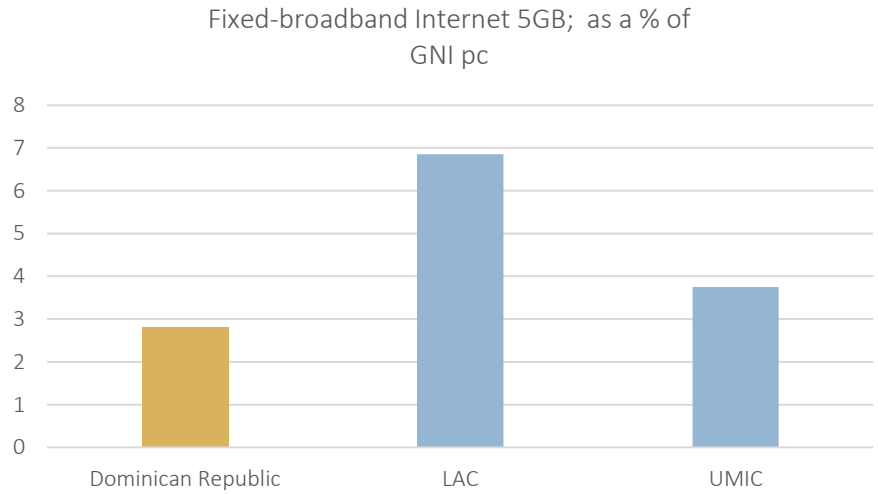


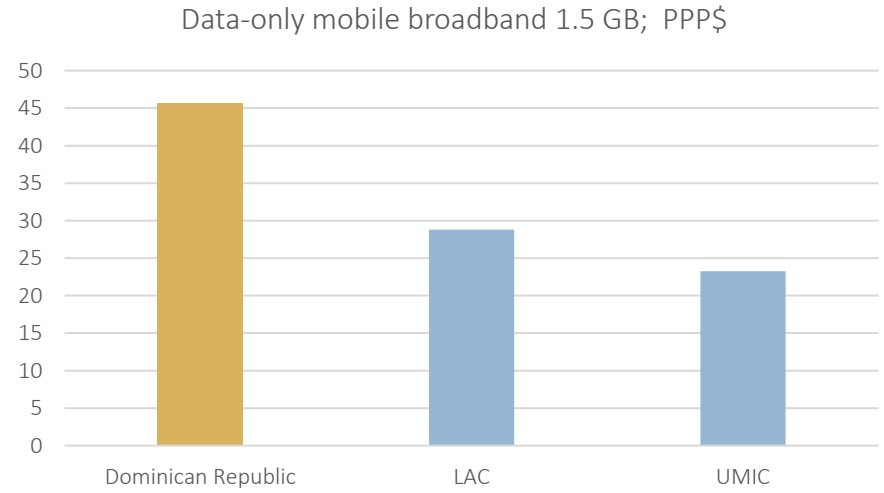
Source: Ministry of Education & Oficina Nacional de Estadistica

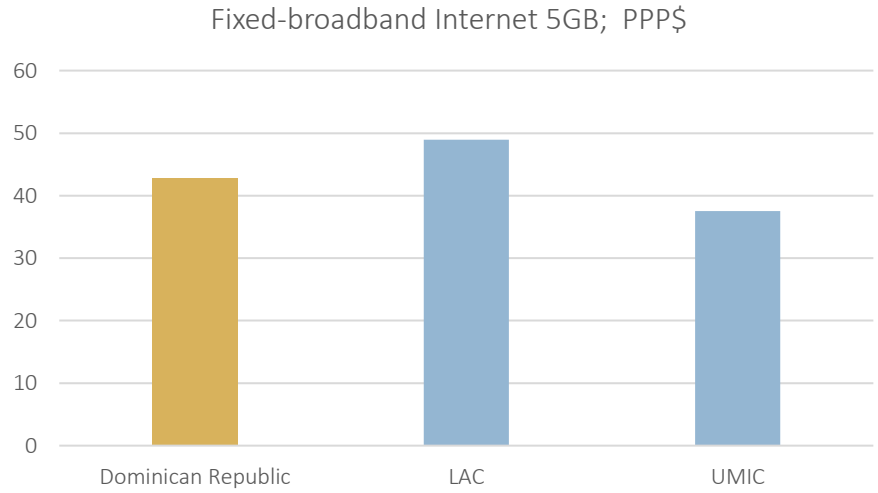
Affordability can be improved for both fixed and mobile broadband.

Affordability for both fixed and mobile broadband is higher than 2% of GNI per capita, the level set by the ITU





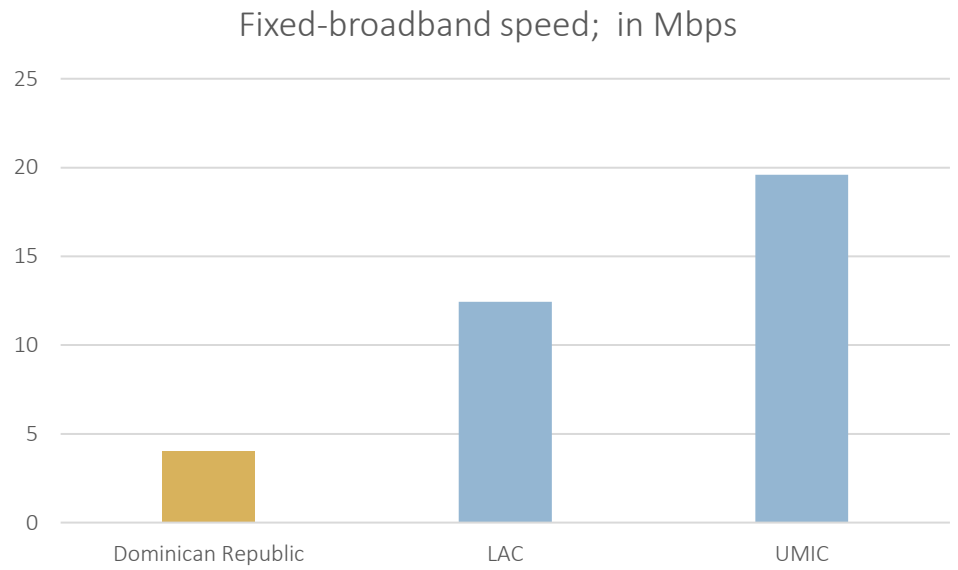


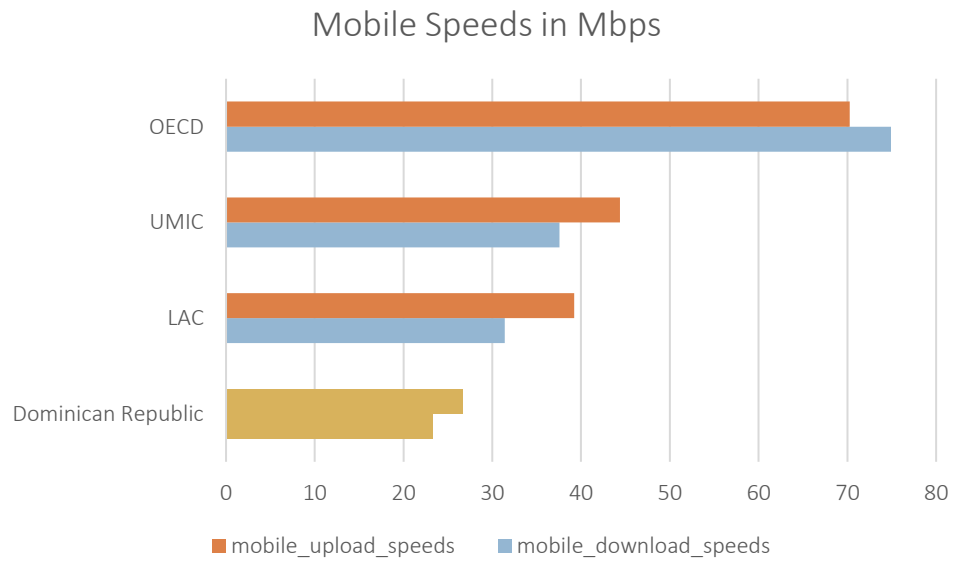


Source: ITU, 2020

Quality of both fixed and mobile broadband is lower than regional and income group benchmarks

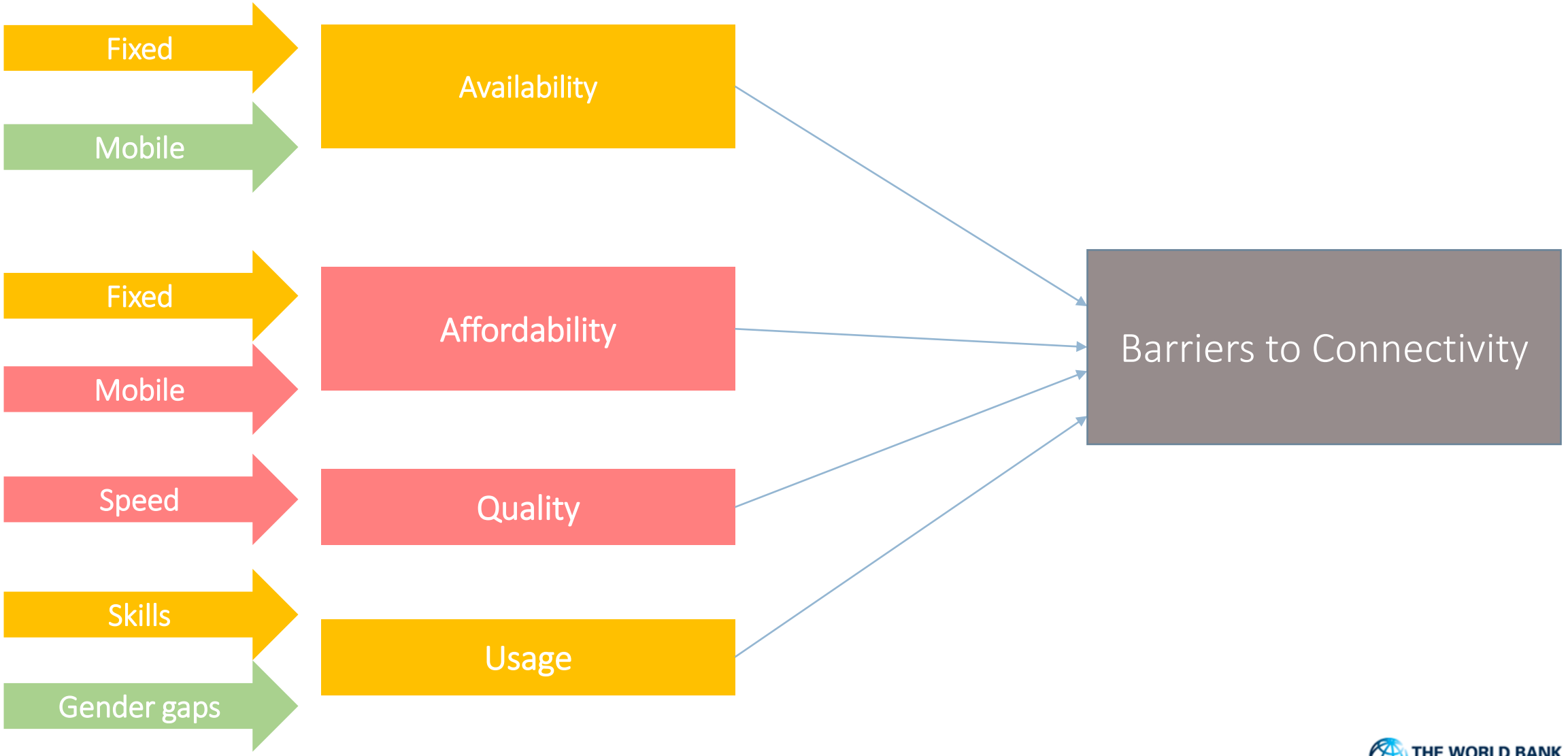
Internet quality is still an issue, particularly in provinces such Montecristi, Santiago Rodriguez, Independencia, Elian Pina, Bahoruco, El Seibo, Monte Plata, others.





Source: ITU and Ookla, 2020

DR could improve on all barriers to connectivity.



Recommendations for the digital sector

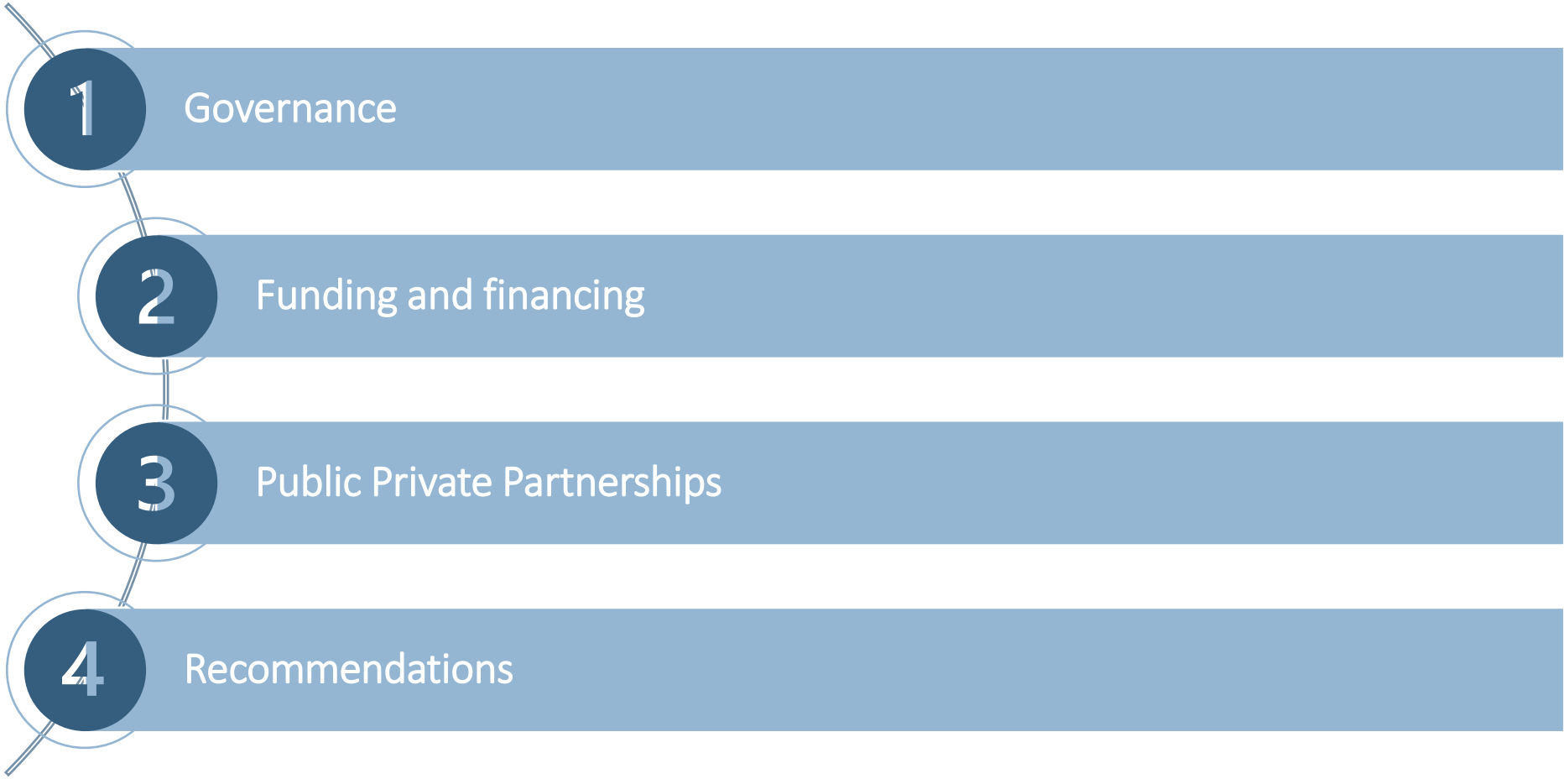
Recommendations

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Criticality	Feasability	Timeframe
Regulatory framework	Implementing an effective regulatory framework for laying and preserving subsea cables	Launch an ex post regulatory impact assessment in order to improve the regulation in place.	Identification of priority areas where the regulation should be improved	High	Medium	Mid-term
	Implementing an effective regulatory framework.	Develop the regulatory framework for laying and preserving subsea cables, according to best practices and based on evidence.	Improvement of the conditions that could guarantee the expected returns for investments.	High	Medium	Mid-term
	Implementing an effective regulatory framework.	Launch an administrative simplification strategy to make the investment process less burdensome.	The reform of regulations that create entry barriers in the subsea market.	High	Low	Short-term
Infrastructure	Full operation of the National Network of Optical Fiber managed by ETED.	Promote the interconnection with subsea cables and the use of such infrastructure to induce competition in the provision of internet bandwidth.	Make subnational markets for the provision of international bandwidth into a national wide-market.	High	Medium	Mid-term
Information	Improving the institutional capacities of INDOTEL.	Launch a strategy to collect and update information about the telecom sector.	Increase the information available to the sector, in order to take policy decisions based on evidence.	High	Medium	Mid-term

Cross cutting issues

How is infrastructure governed and funded and how can the private sector be leveraged?

This section covers the following issues



Infrastructure investment governance

Beyond improvements, there are still several governance issues that prevent greater private sector participation in infrastructure

Given the need to improve the provision of infrastructure and associated services and considering the various constraints faced by the country (funding and structural), greater private sector involvement becomes necessary.

However, according to InfraGov (World Bank 2020), there is an infrastructure governance gap that hinders greater private sector participation.

While the Government of the Dominican Republic (GoDR) has recently taken important steps....

- Until recently, private sector participation in infrastructure services was only regulated by the Procurement Law (Law 340-06 amended by Law 449-06).
  - Procurement was the only regulated aspect of PPPs and concession.
  - There was no single institution responsible for overseeing all the stages of the project cycle from development to implementation.
  - The roles and responsibilities of the involved agencies were unclear, and the processes were vaguely defined.
  - Enforcement of the existing legal framework was poor, and so was PPP-related technical capacity in the involved public agencies
- The new Law on Public-Private Partnerships (Law 47-20) approved in 2020 solves some of this issues by providing a comprehensive legal framework and dedicated institutional setup for PPPs/concessions.

.... this is necessary but not sufficient, as several governance bottlenecks remain, related to different topics that define the quality of the overall public investment management (PIM) and PPP/concession frameworks and processes

- Project development, appraisal and selection
- Affordability and fiscal risk
- Value for Money
- Procurement

See the following slides for details

Source: World Bank – DR InfraGOV

Strengthened project development, appraisal and selection would help ensure that projects with private sector participation increase societal value

Key aspects

- While the PIM legal framework is mostly in line with international best practice, its implementation arrangements do not serve the intended purpose with respect to project selection and prioritization.
- Until recently, regulation of PPPs/concessions only involved the procurement process. The newly adopted PPP law provides a comprehensive framework, including for project development, appraisal and selection.
- To ensure that its implementation will produce projects that are sustainable and increase overall public welfare balancing financial and non-financial considerations, institutional functions need to be strengthened, supportive regulations, methodologies and guidelines need to be produced and technical capacity in all relevant agencies enhanced.

RECOMMENDATIONS

Medium term – Low priority	Short term – High priority	Medium term – High priority	Short term – High priority
Develop a strategy for using PPPs that can guide and incentivize the line ministries to put forward a pipeline of bankable projects and provide the private sector with a vision of investment opportunities	Develop regulations, guidelines and methodologies for PPPs/concessions	Conduct a training needs assessment and build capacity in relevant institutions	Follow de jure project selection and prioritization in PIM Eliminate the potential for conflicts of interest in the new process for PPP promotion and project approval

Source: World Bank – DR InfraGOV

Rigorous affordability analysis and fiscal impact assessment of projects would help safeguard the government against unnecessary risks

Key aspects

- Ministry of Finance (MoF) lacks the methodologies and technical capacity to play a strong role in project approval and public funding. This makes it difficult for the Government of the Dominican Republic (GoDR) to manage the fiscal implications throughout the PPP contract.
- This is particularly of concern in the case of unsolicited proposals (USPs), the majority of PPPs/concessions currently in place in the DR.
- The new PPP law requires for affordability analysis and fiscal impact assessment. MoF will need to develop the corresponding regulations, methodologies and guidelines and build technical capacity to fulfill this this legal mandate.

RECOMMENDATIONS

Short term – High priority

Embed affordability and fiscal impact assessments in the project appraisal

Develop relevant MoF methodologies and capacity

Short term – High priority

Make MoF a gatekeeper on VfM, affordability and fiscal risk in project selection and prioritization

Medium term – Medium priority

Integrate investment decisions with the budget process

Source: World Bank – DR InfraGOV

Procedures and methodologies to assess the value for money offered by private and public financing mechanisms would improve the quality of projects

Key aspects

- Due to the lack of established VfM methodology in the PIM and PPP frameworks, decision-making on the financing modality of infrastructure currently seems to be an informal process, without any formal mechanism to consider alternative financing modalities (including private sector involvement).
- While the new PPP law will undoubtedly strengthen the PPP process –and its VfM outcomes– it does not make any references to the PIM process. Instead, it establishes a separate process for the preparation and development of PPPs/concession, which would run parallel to the PIM process.
- Ensuring a systemic comparison between a PPP/concession option and traditional public finance option would underpin a strong VfM analysis, particularly if applied early on in the project design phase.

RECOMMENDATIONS

- Short term – High priority: Integrate the existing PIM and new PPP frameworks
- Short term – High priority: Conduct VfM analysis iteratively, including for USPs
- Short term – High priority: Build capacity on VfM in contracting agencies

Source: World Bank – DR InfraGOV

Increased competition and scrutiny of bidders would lead to better tendering outcomes and improve the quality of projects

Key aspects

- By law, the contracting of PPPs and concessions is required to follow standard bidding and procurement procedures. However, limitations in the Law on Procurement and Contracts hinder effective identification of financial risks when contracting for PPPs and concessions. Deficiencies in project preparation hinder the development of high-quality bidding documentation.
- Opportunities for competitive bidding seem particularly limited for unsolicited proposals (USPs), even though by law they are required to undergo competitive bidding.
- The new PPP law introduces significant improvements to preparation and bidding processes for PPPs/concessions (including USPs), such as a more comprehensive timeline for project development and longer time for the tendering process.
- However, it is important that a stronger quality control and integrity mechanisms are put in place for the procurement of both public works and PPPs/concessions.
- Systematic capacity-building on project and tender preparation is also needed for all contracting agencies developing infrastructure projects, and particularly PPP/concessions.

RECOMMENDATIONS

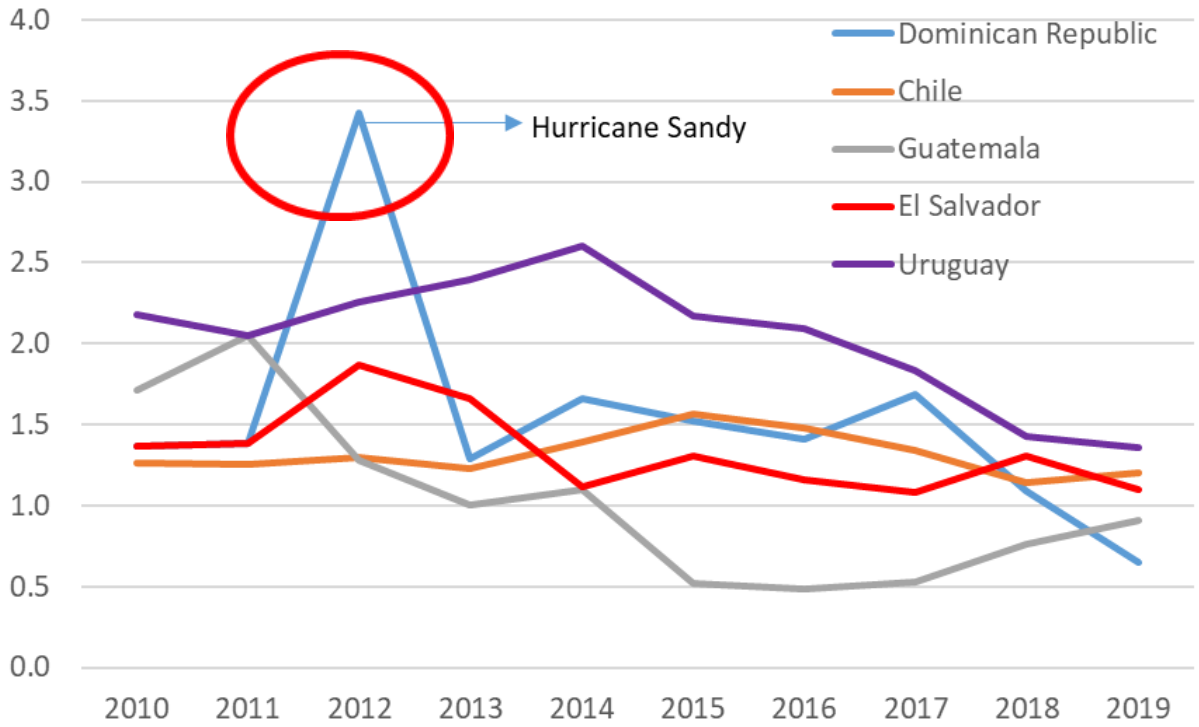
- Short term – High priority: Better enforce the public procurement legislation to improve competition
  Develop procurement regulations and guidelines for PPPs/concessions
- Medium term – Medium priority: Increase capacity in developing tender documentation for both public investments and PPPs
- Medium term – Low priority: Publish and address any concerns raised by DGCP's technical opinion on the design and structure of the bidding process provided to the National PPP Council
- Medium term – Medium priority: Ensure that USPs are adequately evaluated and to the extent possible competitively tendered, as per the PPP Law

Source: World Bank – DR InfraGOV

Infrastructure Funding and Financing

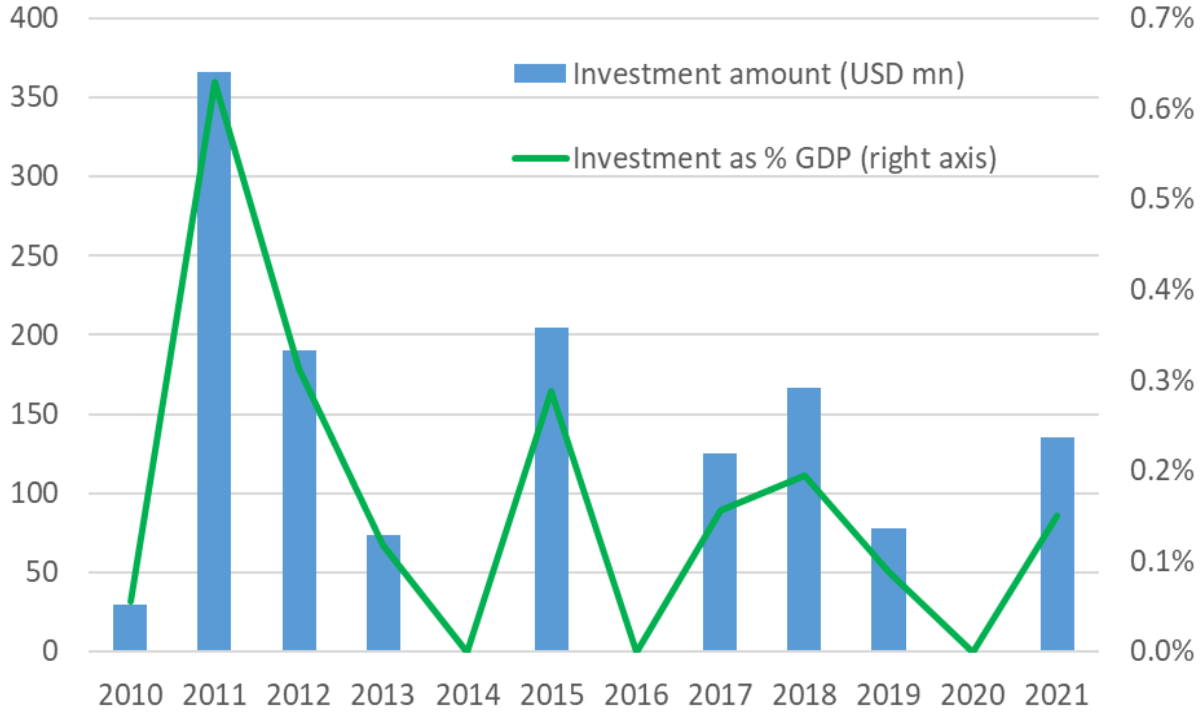
Public sector investing has dropped while private sector participation via PPPs has not compensated the trend

Public sector investment in transport and telecommunications infrastructure (% GDP)



Source: Infralatam 2021

PPP investment in infrastructure in value and as portion of GDP



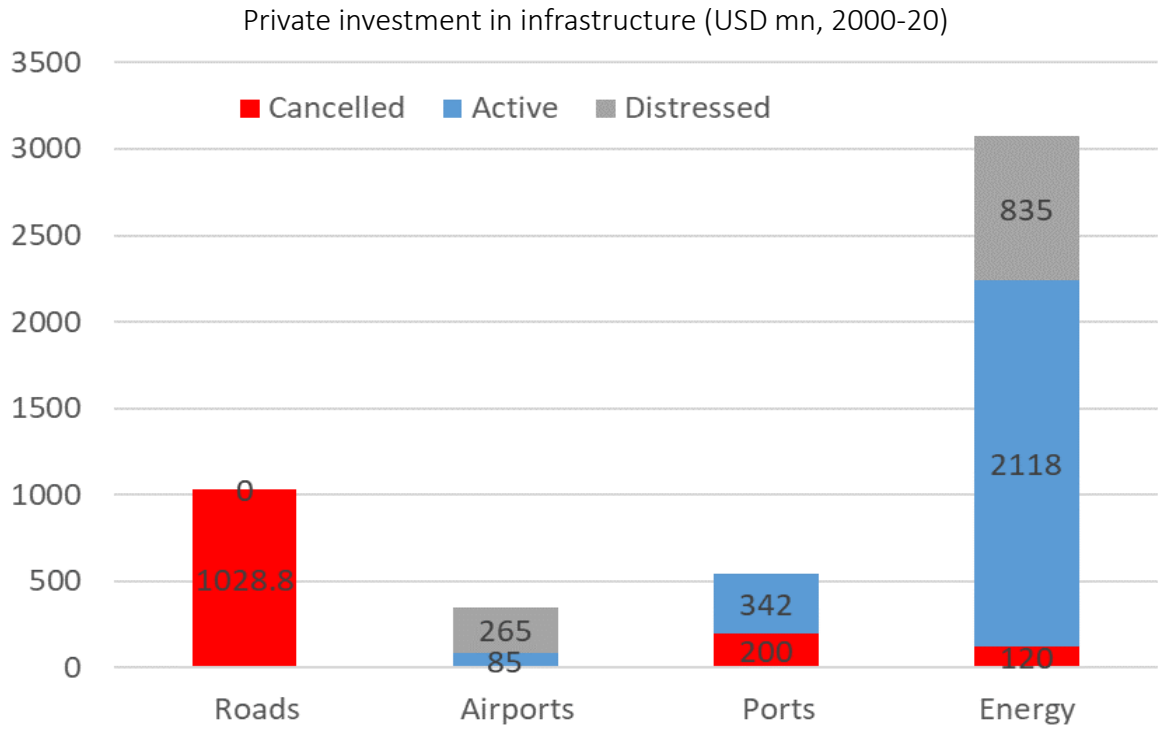
Source: PPI 2021

Some private sector capital to infrastructure investment has been added, but the trend has been downward in public sector investment

Investments in transport show a high proportion of distress or cancellation, especially in the road sector

Investments between 2000 and 2020 have gone mostly to energy mobilizing USD 3.1 bn, with transport generating lower interest (USD 1.2 bn)

- Slightly less than half of the projects have required MDB support with a higher proportion in the transport sector
- About half of the projects are PPPs, albeit under a previous framework, with more prevalence in the transport sector
- The proportion of distressed or cancelled capital is higher in the transport sector, particularly in roads representing all of total investments
- Financing at the project level done limitedly for energy projects since 2017, although with MDB (IFC) participation and no local bank involvement



Source: PPI. Cancelled: project is interrupted by the government after being awarded. Distressed: projects defaults or restructures one or some of its obligations.

Autopista Nordeste and Boulevard del Atlantico are examples of poor preparation affecting private sector financing

Minimum revenue guarantees

- Government provided MRG for both projects based on demand estimates
- As demand projections were too optimistic and never materialized the so-called shadow toll payments became a burden for the government as this risk was not hedged via a contingency mechanism
- Estimates of government payments for 2022 were USD 81 mn and USD 2.4 bn up to 2038

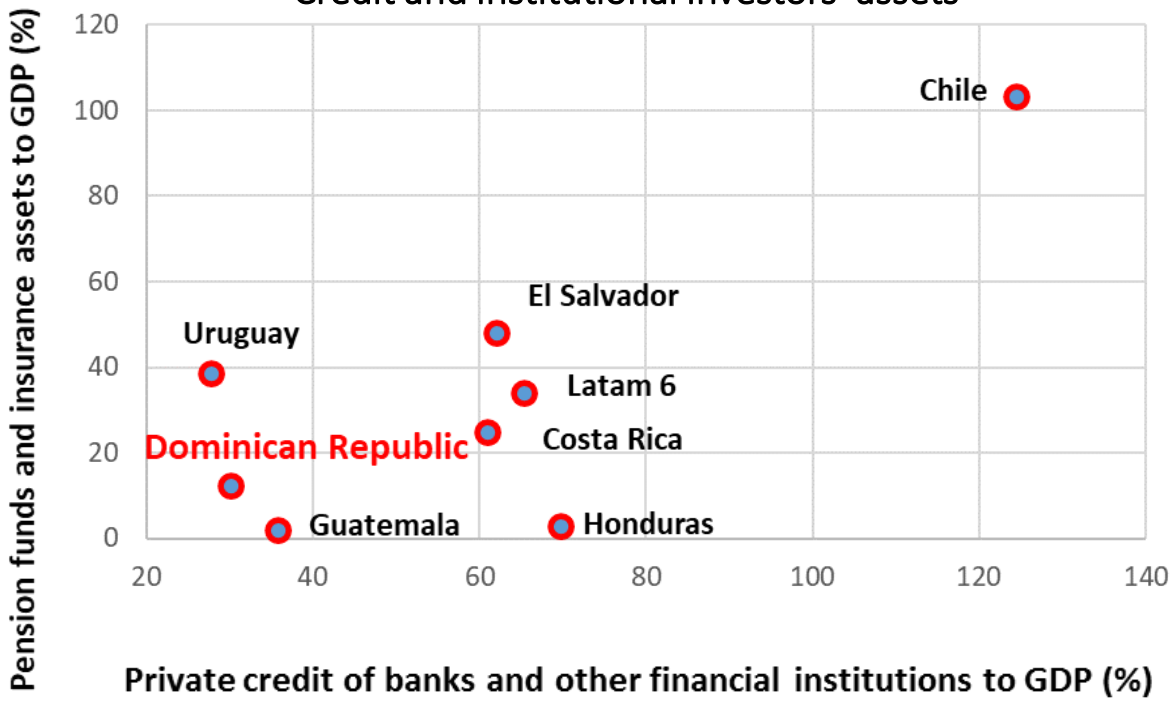
Government actions

- Payments were delayed reaching about 300 days in 2020 putting some strain on the project as only a third of the income came from tolls
- Given the expected high payments the government decided to terminate early the concession announcing a compensation of USD 410 mn to call the outstanding amount of USD 53 mn in bonds and pay loan creditors (IDB, EIB, CAF, BNY-Mellon and Banco Popular)

Small size of investors and inefficient banks complicate the financing of infrastructure

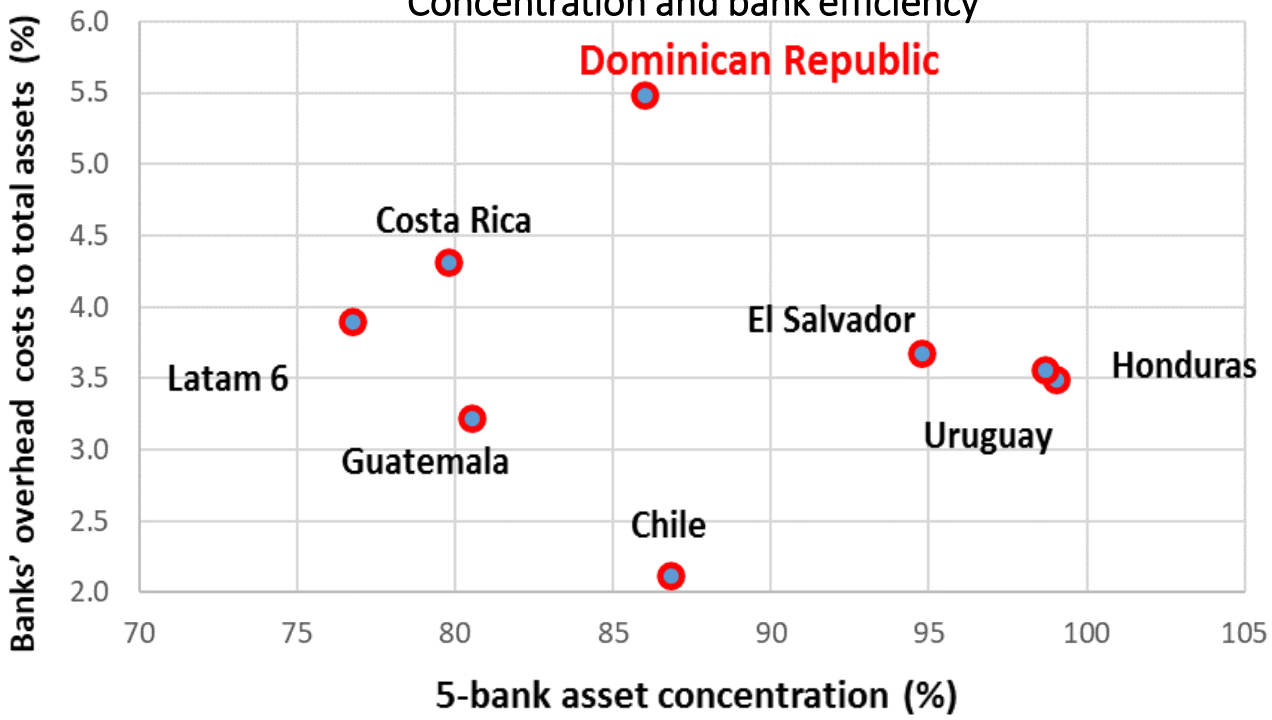
- Credit to the private sector is rather low just like the presence of institutional investors in the economy, limiting the sources of capital, albeit high growth and an evolving ecosystem should improve this situation with time.
- Banks are the most inefficient of the peer group.
- Nevertheless, any solution should incorporate these two players even in the case of pension funds to make them comfortable with project risks.

Credit and institutional investors' assets



Source: Financial Statistics Database, World Bank November 2021. Note: Latam 6 Argentina, Brazil, Chile, Colombia Mexico, Peru.

Concentration and bank efficiency



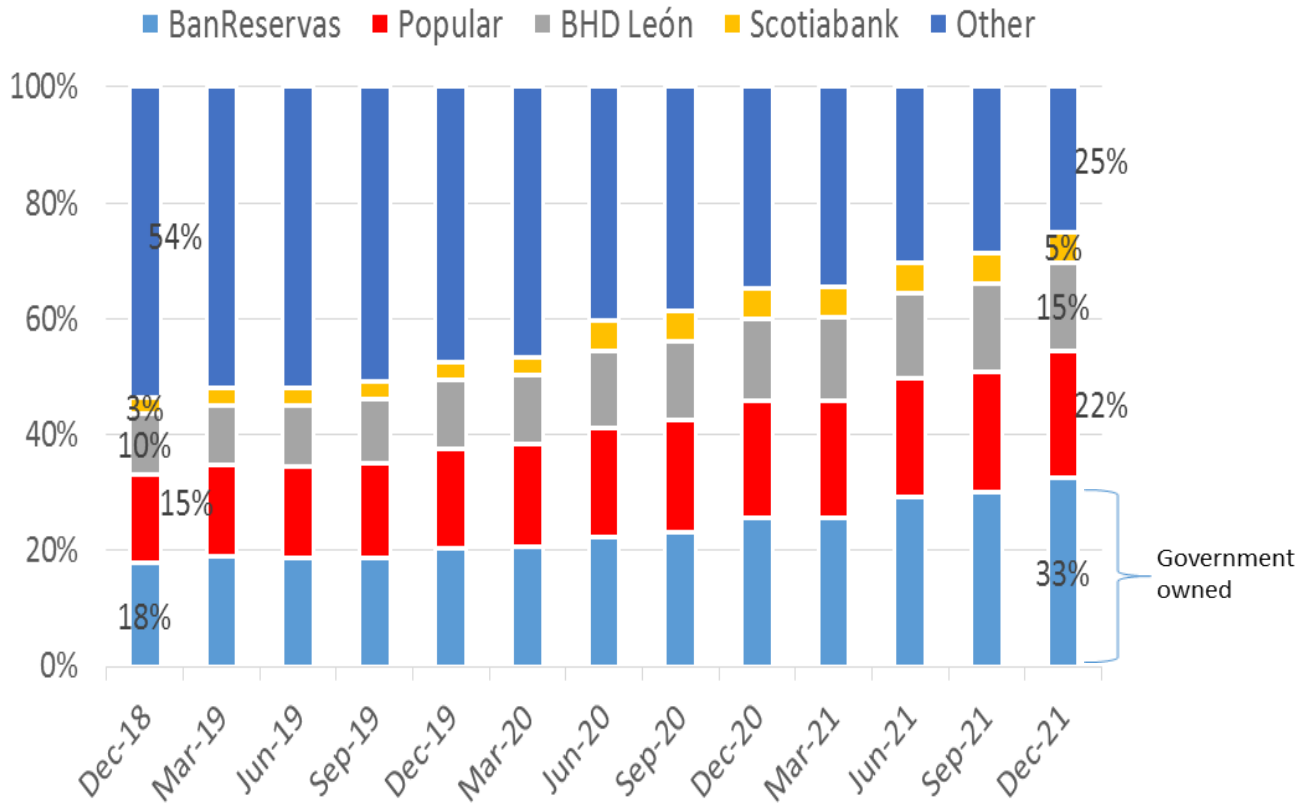
Source: Financial Statistics Database, World Bank November 2021. Note: Latam 6 Argentina, Brazil, Chile, Colombia Mexico, Peru.

High and increasing concentration of banks makes infrastructure financing a matter of mobilizing a few players

Concentrated banks make credit to infrastructure rely on the preferences and expertise of a small number of decision makers, which could put pressure on higher returns of projects but may also increase the capacity to lend

- Growing presence of BanReservas, Popular, BHD Leon, and Scotiabank, has reached 75% of total assets from 46% in 2018
- Legal lending limit of 10% means that lending to a single sponsor cannot surpass USD 417 mn. If a sponsor is present in a number of project thus amount is divided by the number of projects.
- By end 2021 the total banks' loan portfolio of USD 20.6 bn was healthy, with only 1.2% in past due loans, but rate increases and past forbearance may increase this number
- Lending to energy and utilities (83% in USD) represents 2.1% (USD 518 mn) of the credit to the private sector portfolio, suggesting that the largest players are foreign institutions while construction is 5.8% (USD 1.4 bn) with a fifth in USD

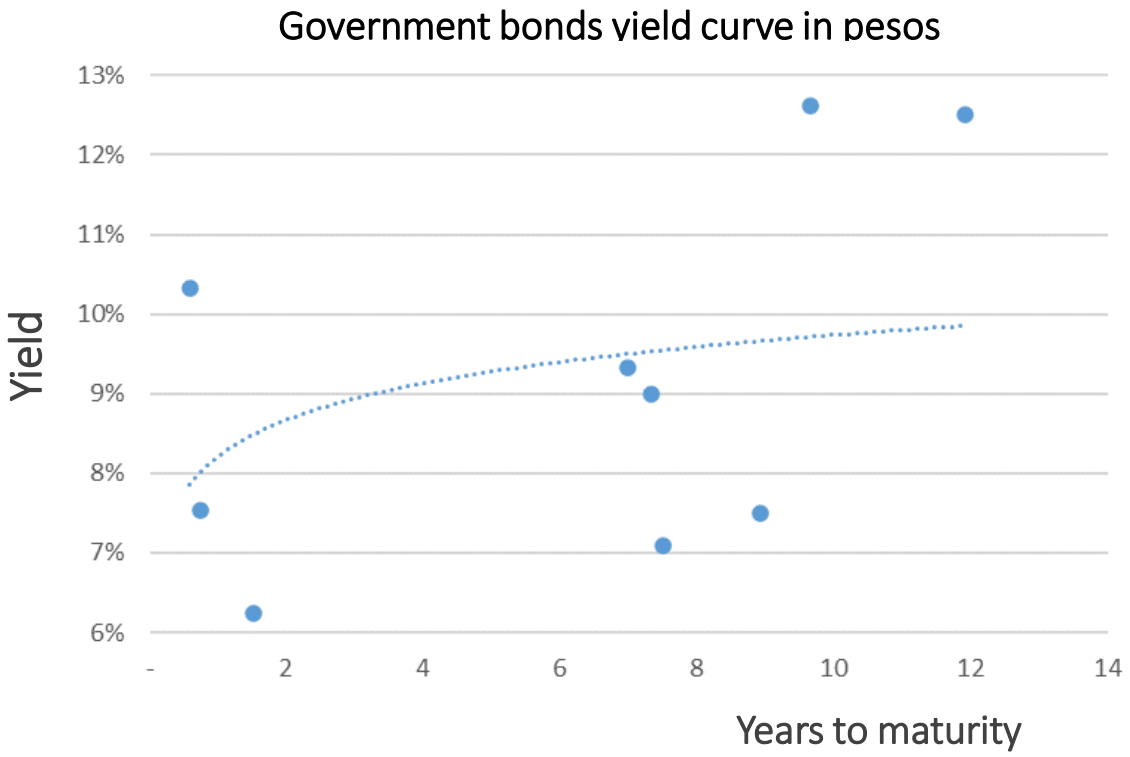
Assets per bank (% of assets in the credit sector, 2021)



Source: SB.

Government bond market is fragmented and has a relatively low liquidity even it is the most relevant fixed income market

There are two yield curves, one in dollars and another in Dominican pesos none with large trading amounts, complicating the capacity of investors to properly price risk of other financial assets



Source: Credito Publico, Ministerio de Hacienda.

Government bonds

Issuance fragmented in two markets and in a large number of series -in pesos- results in low trading amounts, while USD bonds have the opposite problem a number of references that is too low

- Trading amounts of both yield curves do not reach an average USD 50 million a day and most transactions are in a single bond in pesos

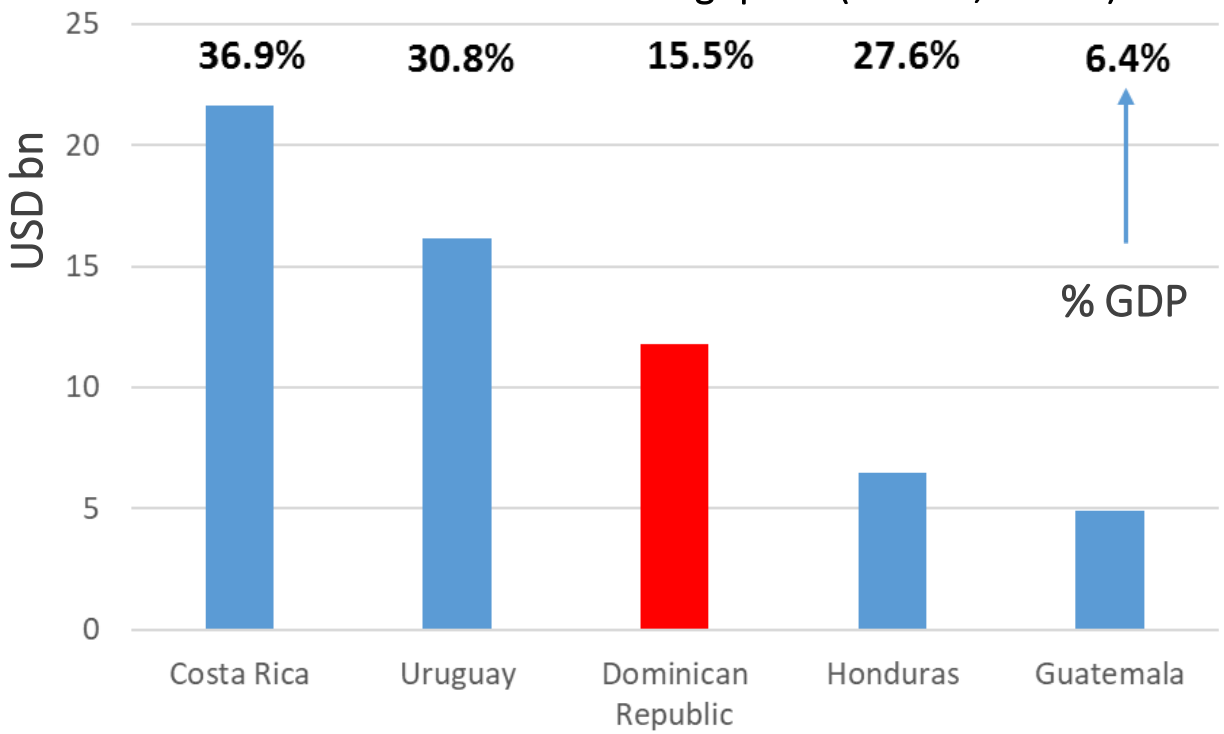
- Issuance is done following a calendar of one auction a month for eleven months

- Given poor liquidity and small amounts per issuance foreign investors represent less than 2% of total holdings

Asset growth of pension funds will make them a relevant player over a mid term horizon

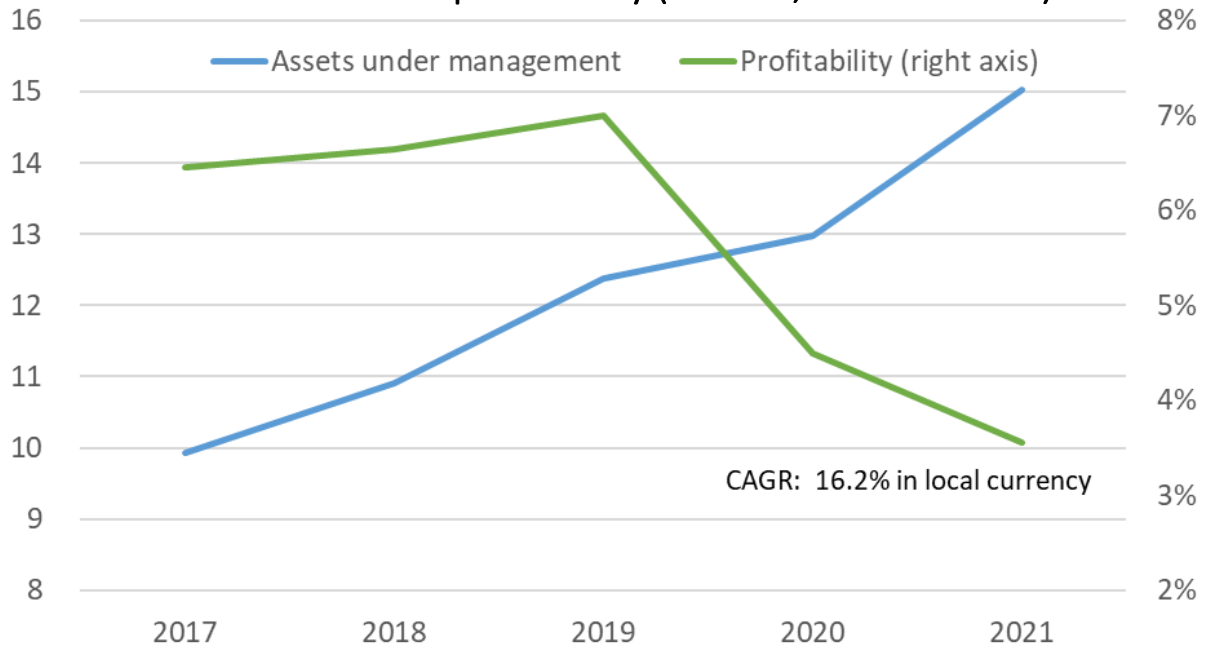
Retirement savings plans AUM over GDP were not high in 2020 (15.5%), but they have grown at compounded average annual rate of 16.2% in local currency in the previous five years and should become relevant over a mid term horizon, meanwhile profitability has dropped

Total assets in retirement savings plans (USD bn, % GDP)



Source: OECD 2020, IMF authors calculations for Guatemala and Honduras .

Portfolio size and profitability (USD bn, annual return)



Source: SIPEN 2021

Insurance companies are too small to be relevant, comprising total portfolios for only USD 860 mn (1% of GDP) so are not considered

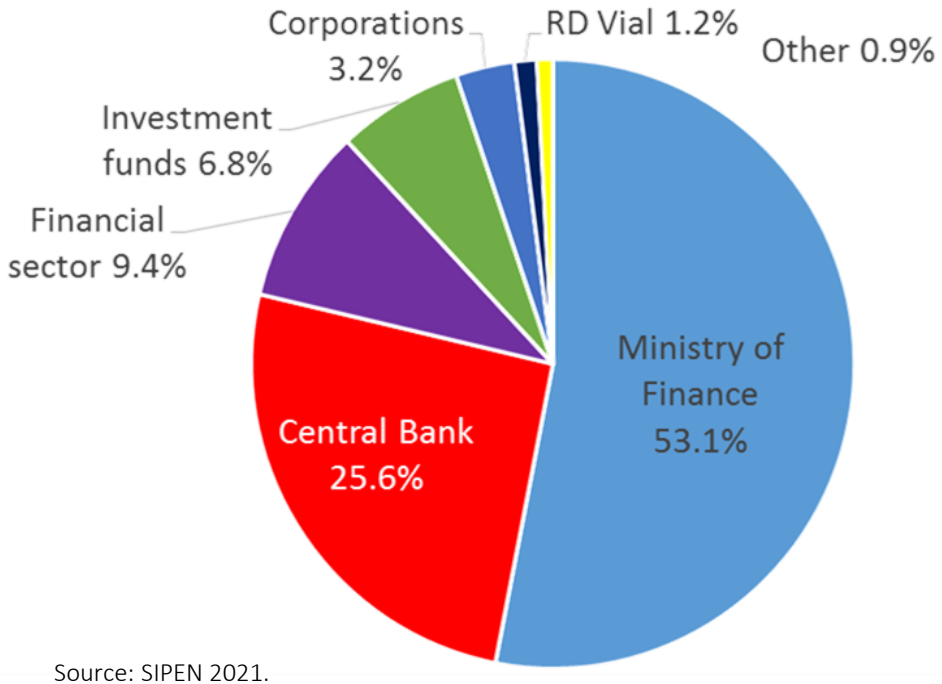
Pension funds' investments are concentrated in government securities given poor incentives to diversify portfolios and probable crowding out

Despite a regulation that would permit infrastructure investing, there is not a specific category, while regulation incentivizes investments in highly liquid pension funds have no experience in infrastructure investing so capability limitations are probably an issue

Regulation disincentives for infrastructure investment

- Regulation is very generous with investments in government bonds (60% of total portfolio), central bank securities (50%) and banks' instruments including deposits (75%). There is an additional separate category for government infrastructure bonds (10%) but these are not project bonds
- While there is no specific category for private sector infrastructure instruments, closed funds and trust funds' securities have allocations of 15% each. RD Vial bonds fall in the latter category. These categories are all underused, however
- Technical capabilities for risk taking in investment teams while improved are still below the standard needed for infrastructure investing
- Small quantity and size of projects are a limitation for pension funds to invest in projects

Pension funds' portfolio composition (2021)



Source: SIPEN 2021.

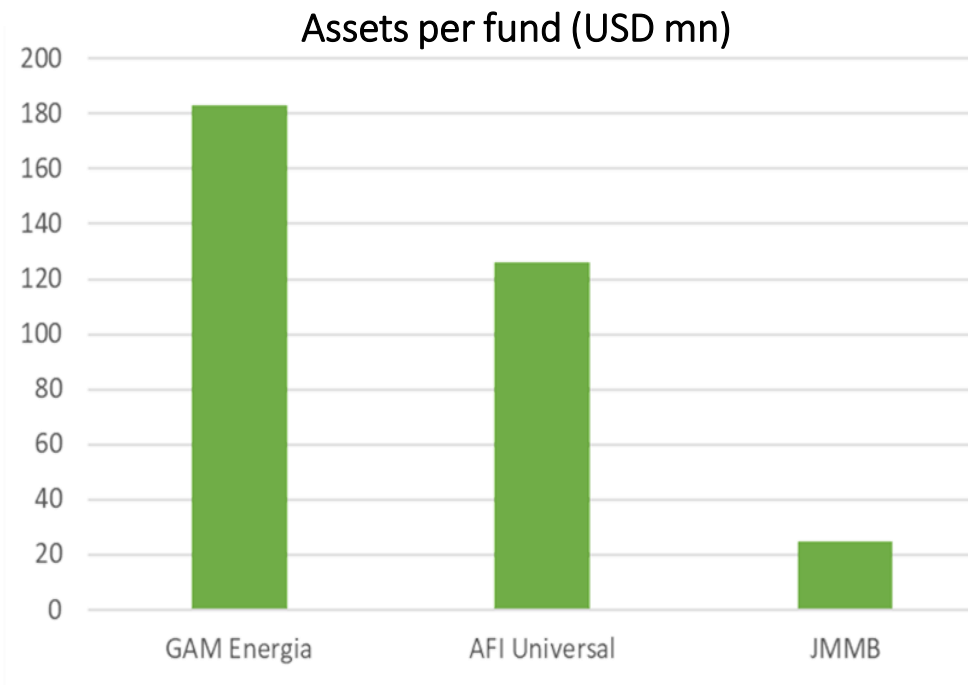
Infrastructure funds are a novelty in terms of private sector investments, but their impact is limited. Other instruments that may be relevant are underused

IInfrastructure funds are relatively new and have drawn interest from pension funds, which are the main investors, attracting 2% of their portfolio. Funds are closed with terms between 15 and 25 years securing capital for the long term.

Features and limitations

- Funds tend to take more risk via longer tenors or subordinated stances than banks given their risk profile
- Pension funds rely on investment funds' specialized knowledge in infrastructure investment
- Limitations: lack of enough projects prevents funds from reaching significant scale. Lack of capital calls: infrastructure funds cannot call capital from pension funds as needed by the projects

Securitization and project bonds have no limitations to be issued but have not attracted the interest of investors due to aversion to take direct risk



Source: AFI Universal, GAM, and JMMB. Net worth for JMMB.

Trust funds are a locally designed solution with high potential, but they prevent direct investment in projects and their design needs improvement

Government trust funds

Diverse vehicles set up by the government to facilitate funding or provide capital direct to projects. Each with a focus on a sector (e.g. roads, urban transport), region (e.g. Pedernales) , or both (parking lots in downtown Santo Domingo

Characteristics

-Each trust fund is created specifically by the government with an allocation of resources such as existing roads or an amount of funds

-Linked to a ministry or specific agency that determines the governance

-Usually allowed to issue bonds or contract loans to lend or invest via equity

Mobilization

Capital has been mobilized by issuing bonds (e.g. RD Vial). Investors, however, are prevented from taking project risk.

Most resources mobilized are the government's. Cash generating government assets or simply funds are allocated to each trust fund

Risk Management

Contingencies are neither properly accounted nor properly hedged. Risks involved in equity investments not fully incorporated

While trust funds are not officially guaranteed by the government ratings do benefit from the link with the sovereign, leading to some confusion in risks involved

Governance and Mandate

No truly independent members in the governance of the funds

No explicit mandate to co-lend or co-invest with private sector entities, limiting the potential catalytic role of the trust funds

From a more general perspective, trust funds should follow a coordinated consistent strategy and share best practices and capabilities

Efforts to coordinate trust funds' actions

-Trust funds are an instrument of choice used ad hoc for specific projects at the subnational or national level for general (roads) or specific purposes (parking lots), but there is no consistent strategy for their use

- Specific regulation however, is lacking as they were created for mortgages only. New public trust fund bill in congress aims to provide a framework improving governance but restricting the use with private sector capital

-Capabilities vary across all the trust funds, skills and procedures are not formally shared between trust funds

-There is no contingency accounting for all the funds by the Ministry of Finance or other institutions

Efficiencies could be achieved by developing a common strategy and sharing capabilities across trust funds

Guidance on operations standards and recommended best practices, specially on risk management and governance, could improve the management of funds

Incorporation of private sector capital should be contemplated to leverage resources

RD Vial is the most developed fund but needs a stronger financial management and could incentivize other players by co-investing

RD Vial is the most developed fund with the longest history, although financial management might be problematic

Trust fund created in 2013 with a mandate to support O&M of existing roads. Currently exploring the expansion of the mandate to provide guarantees and other credit supports to projects

- Assets for over USD 1 bn with a high portion of cash (USD 446 mn)
- High leverage (12.8x). Local loans and bonds for USD 449 mn and USD 468 mn, respectively
- Debts are not explicitly backed by the government
- AA+ rated (highest local rating) given the link with the government
- Income comes from tolls or roads that have reverted to the government
- There is no specific allocation to support of each project or hedging of contingencies
- Project support is done via equity investments, although there is no clarity of the financial implications
- There are no independent members in its corporate governance

Sources: RD Vial, FitchRatings.

Other funds with a more specific and narrow mandate could become mobilizers of private sector capital

Newer, smaller and less developed trusts have been created with specific mandates. However, none of these trusts mobilize private sector capital as of yet.

FIMOVIT

- Created in 2018 to support the development of urban corridors dependent on INTRANT (MOPC). Funded with government budget, issuance of driving licenses and a gasoline tax. FIMOVIT provides a payment cascade to ensure that debt is repaid first, subsidies to transport and income support for unforeseen events such as exogenous drops in demand.
- Contingencies are not hedged and risks are not properly quantified, however.

ParqueaT RD

- Created in 2019 to build parking spaces in congested urban areas, **ParqueaT** RD trust fund has built its first parking building in downtown Santo Domingo and is building a second one.
- Income is derived from parking spaces operation, which is not outsourced. At some point private sector capital may be sought for operation component.
- Its initial capital was provided by the government, but the fund may be leveraged.

FITRAM and Pro-Pedernales are even newer although the government is putting its weight behind them

FITRAM

- Incipient fund linked to the presidency created in late 2021 to support development of massive transport.
- Mandate to become sustainable with resources for USD 12 mn

Pro-Pedernales

- Created in 2022, this regional trust fund has a mandate to promote the development of infrastructure to promote tourism in the South-West region of DR. The fund is linked to Presidency and has the ministries of planning, environment, finance, tourism and the DGAPP in its board.
- This trust fund can issue bonds or contract loans.

Sources: INRTANT Presidency of the Dominican Republic, Ministry of Finance.

Most players needed for infrastructure investment are in place, but implementation is deficient

Overall financing

- Local: Banks have some exposure and pension funds have minor portions and no expertise
- International: MDBs and bilateral institutions have a clear presence but insufficient
- Environment: comfortable with private sector capital, however there is a high portion of distressed and cancelled projects given poor preparation

Banks

- Market and structure focus: low efficiency, high concentration and focus on traditional secured or short tenor lending

Pension Funds

- Government concentration: pension funds do not show expertise in infrastructure investment. Infrastructure funds provide an indirect vehicle but this is dwarfed by government concentration

Trust Funds

- Financial management: risk management is not clear as evidenced by high leverage, possible lack of clarity in risk asymmetries (equity investments and debt liabilities) and lack of independent governance

Infrastructure funds

- Investment strategy: funds pursuit annual investment returns and trading strategies, which is inconsistent with infrastructure investment

Public Private Partnerships

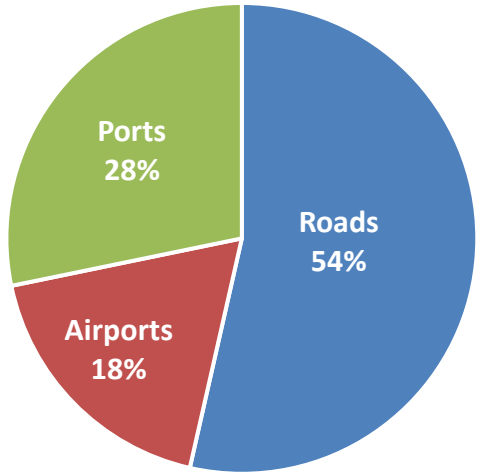
Transport sector had a relevant although inconstant and diverse PPP experience applying different legal frameworks for concessions

Diverse and disperse experience in transport infrastructure through PPPs: between 2000 and 2013 were initiated 12 projects (4-Roads, 3-Airports & Ports) with aggregate investments up to USD 2 bn.

- Between 2009 and 2019, the private investment was equivalent to 11% of public investment in transport sector, which reflects the sparse private participation in the recent years;
- Last projects were two port terminals concessions in 2013 (only projects in 12 years).

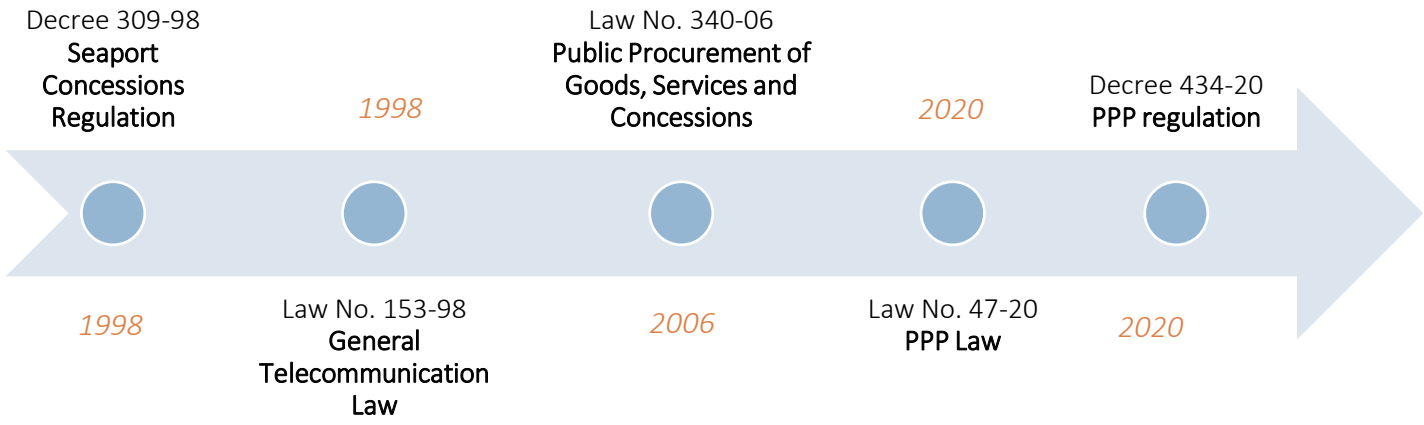
From 2010 to 2019 the value of infrastructure PPPs in the Dominican Republic represented 5% of the country's total infrastructure spending, on average

PPI by transport mode
% participation 2000-2013



A variate legal framework has supported private participation the last two decades:

- These laws establish minimum requirements for contractors, mechanisms for tenders, durations of concessions and reasons for revocations and are approved on a case-by-case basis by the national legislature. EIU (2019)
- Most concessions were granted using **sectorial** legislation
- In 2020 the PPP law substituted the general concessional framework and keep the sector-specific regulation.



Source: World Bank PPI Database (2021); EIU (2019); World Bank (2020)

Port and airport projects have had good dynamic for private investment with strategic projects under operation

Private investment and operation of airports has a long track record and has contributed to country competitiveness. Both concessions and private airports have proved workable business for private investors.

- As 67% of the airport are under a concession contract (44% of the traffic).
  - Currently there are 3 active concession contracts involving 8 airports.
  - The main public airport (Las Americas) with other 5 airports* are under concession as a group since the end of 1999.
  - Last concession awarded
- One 100% private international airport (Punta Cana) operates since 1982

The port authority have relied on the private sector to expand and manage strategic port terminals

- 46% of the port terminals are under concessions: 3 private and 3 public port terminals.
- Last concessions awarded in 2013 were Amber Cove Cruise Terminal, and the Samana port terminals (investments of USD 73 million)

Public port terminal concession

Puerto Santo Domingo

Puerto Río Haina

Puerto de Cabo Rojo

* El Higüero, la Isabela, en Santo Domingo; Gregorio Luperón en Puerto Plata; El Catey provincia de Samaría; Juan Bosch y Arroyo Barril en Samaná; y María Montez en Barahona

Source: World Bank PPI Database (2021); EIU (2019); World Bank (2020); BID (2020); Autoridad Portuaria Dominicana https://portuaria.gob.do/blog/puertos/puerto-de-cabo-rojo/

Track record of early terminated projects related to large contingencies and not compliance in road concessions

Currently there are **no road concessions outstanding**, all contracts signed since 2001 were terminated before time

- Privately-run toll roads, operated under concession contracts, have been among the most difficult, in terms of risk allocation and unforeseen fiscal costs: three of the road concession contracts carried out unexpected fiscal costs to the government
- Government payments up to USD 590 million: **repayment of executed investments and compensations**
  - Large contingencies related to toll income guarantees induced Government preference for a rescue plan and negotiate compensations for early termination (3 projects).
  - Sentence from an international arbitration court as the government did not fulfill different contractual obligations (toll booth installation; tariff update; land expropriation) (San Pedro Marcori La Romana and Las Americas)

Road concession contracts with early termination

Project	Signing year	Contract term (Years)	Estimated investment (USD million)	Early termination year	Compensation (USD million)	Main issues	Contracting entity
San Cristóbal-Bani	2001	30	85	2003	NA	Non completion by contractor. Government unilateral action	MOPT (SEOPC)
San Pedro Marcori La Romana and Las Americas	2001	30	149	2012	45	Non completion of works; non-compliance from the Government (tolls installation, tariff update, endorsement of exchange rate risk mitigation)	MOPT (SEOPC)
Santo Domingo Puerto Plata Highway	2010	30	472	2013	135	High contingencies related to tall income guarantee	MOPT
Santo Domingo – Samaná (Autopistas del Nordeste)	2001	30	250	2021	286,1	High contingencies related to tall income guarantee	MOPT (SEOPC)
Boulevard Turistico Del Atlantico	2007	30	180	2021	124,1	High contingencies related to tall income guarantee	MOPT (SEOPC)

Source: EIU (2019); World Bank (2021) PPI Database

Possible causes:

1. Insufficiently rigorous project due diligence and planning (poorly specified).
2. Governments may have accepted risks that they may not be best-placed to manage and that could have been transferred to the private sector.
3. Even where risk assigning is reasonable, insufficient fiscal oversight let to acceptance without careful assessment of their costs and potential fiscal impacts.

New PPP legal framework was needed to address gaps in terms of governance, institutional capacity and project preparation.

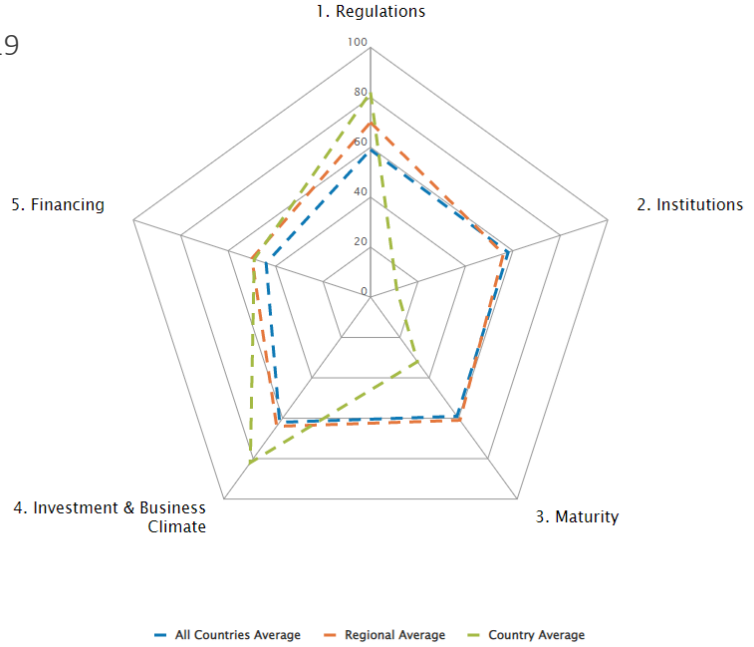
Standardized international assessments for PPP framework were done previously to the new regime, highlighting the gaps to be addressed by the new PPP regulation, starting with a weak institutional framework.

In addition, the Infrascope index (2020) shows that challenges were also related to: i) the lack of a dedicated agency and ii) the government payment risk.

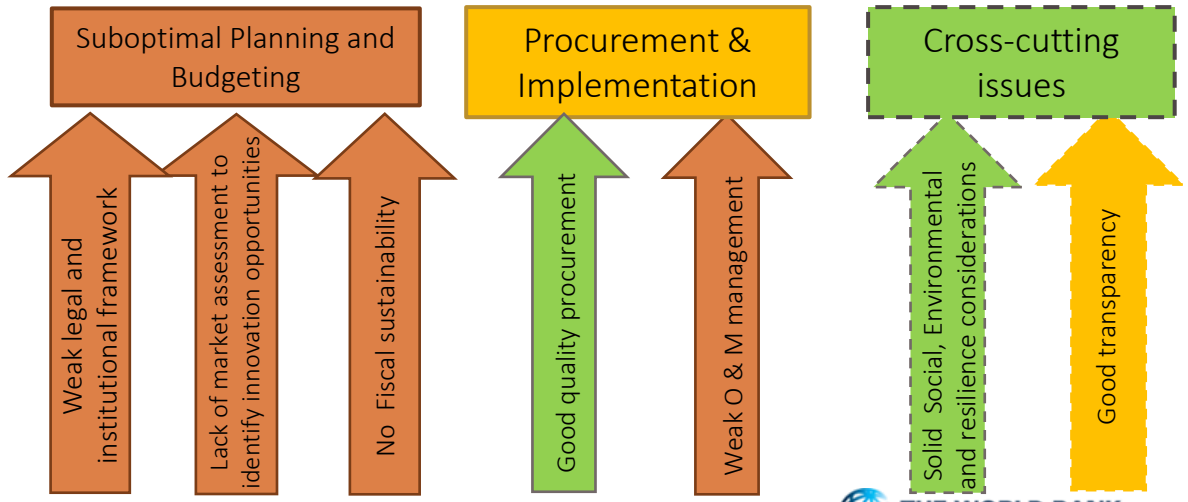
For the PPP Benchmarking Infrastructure Development (2020), some relevant gaps along the project cycle were related to:

- Preparation: i) Project approval before launching the procurement process and signing the contract, and methodologies to conduct typical PPP assessments; ii) The treatment of USPs should further ensure that they are consistent with government priorities. iii) critical technical and economic assessments;
- Procurement: Expanding the methods of procurement available and allow unsuccessful bidders to contest the decision of award by implementing a standstill period.
- Contract management: Tools to consolidate systems to manage, monitor and evaluate the PPP contracts more efficiently.

Infrascope 2019



PPP Benchmarking Infrastructure Development (2020)



Source: EIU (2019); World Bank (2020) PPP Benchmarking

The legal framework stablishes a new governance arrangement specific for PPPs, including a desirable although intricate checks and balances system

Specialized actors for the PPP regime:

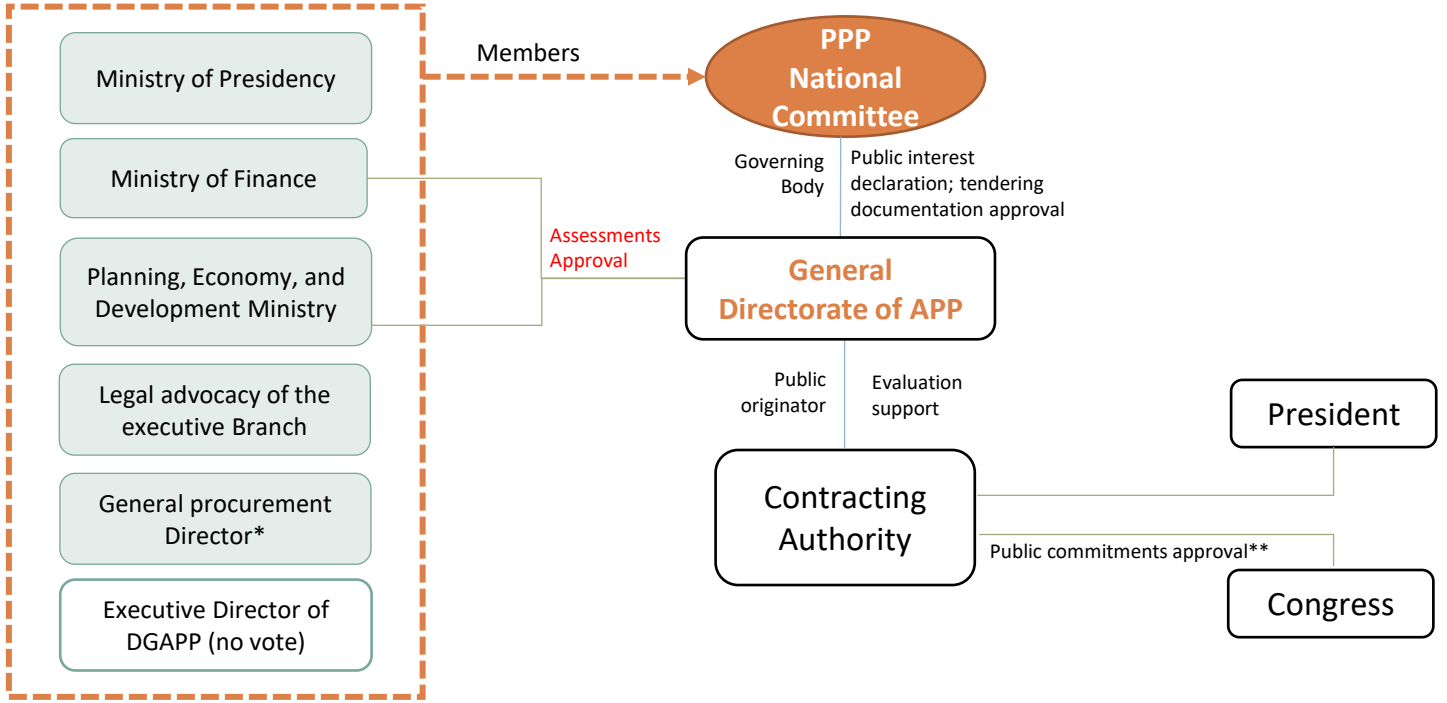
- A 100% public governing body at ministerial level
- A centralized PPP Unit – DGAPP for:
  i) evaluating prefeasibility and feasibility studies,
  ii) consolidating fiscal and economic assessments
  ii) structuring contract and tendering documentation;
  iii) managing the procurement process, and
  iii) oversighting contract

Ministry of Finance and Ministry of Planning have the gatekeeping role for assuring socioeconomic rationality, value for money, and fiscal sustainability.

Contracting entities, in charge of project preparation and contract management, need to complement or build interdisciplinary capacities for delivering the projects under the PPP scheme

Interinstitutional coordination and alignment are critical for efficiently implementing the PPP agenda

PPP Public sector ecosystem



* With vote exclusively for the design and structuring of the competitive procurement processes

** Contracts (and addendums) that include State assets disposal, allocation of national proceeds, tax exemption, and public credit operations.

The new framework private participation in infrastructure has successfully ignited several and diverse proposals, mainly originated by the private sector

The PPP program started with great momentum

- 13 project proposal are in process in the DGAPP
- Already 4 projects have public interest declared (Estimated investment over USD 533 million)
- The Duarte Port-Arroyo Barril project has one valid bidder-the originator (bid submission by end-January)

A diverse PPP scope and current pipeline

- As the concession scheme was substitute by the PPP regime, a broad variety of services and infrastructure would be contracted under as a PPP contract, (although not a really fit as PPP): First PPP project (failed awarding) was a registry for movable asset-based guarantees.
- 4 projects in the pipeline are related to service provision in diverse sectors (financial services, transport, utilities, etc)

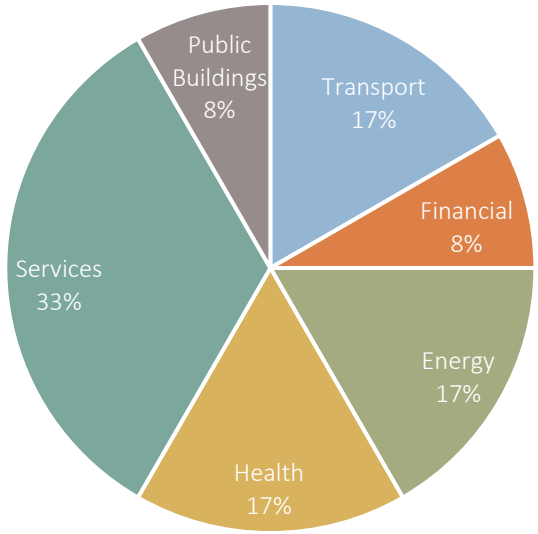
Private initiatives are taking the lead in the PPP agenda

- 83% of the projects under evaluation has a private originator.

Projects with public interest declared

No.	Project	Investment (US$ million)	Type of initiative	Stage	Contractual term (years)
1	Electronic system to register movable asset-based guarantees (collaterals)	0,5	Public	In tendering process (Bid submition on 4-jul-22)	15
2	Ambar Highway	400	Private	Public interest declared. In preparatory activities	40
3	Duarte Port - Arroyo Barril (Cruise terminal)	60	Private	Public interest declared. In bidding process	40
4	Vehicle technical inspection program	93	Private	Public interest declared. In preparatory activities	15

Sectorial participation in the pipeline under evaluation



Source: DGAPP website

The new legal framework has improved significantly enabling conditions for PPPs, although some relevant gaps still need to be addressed

- There is a specialized government entity that facilitates the PPP program (PPP Unit)
- Ministry of Finance and other entities/body approve the PPP project before launching the procurement process, but no before signing the PPP contract
- Approval from a government authority, other than the procuring authority, is required for modification or renegotiation of the PPP contract (CNAPP and Congress (if applied))
- Mandatory fiscal affordability, value for money, and financial viability assessments for projects approval.
- Fiscal treatment for PPPs (budgetary, reporting and registry requirements), including a global fiscal limit.
- Inclusion of PPPs in the national public investment system
- Lender step-in rights to be included in the PPP contracts
- A standstill (or pause) period after the contract award and before the signing of the contract in order to allow unsuccessful bidders to challenge the award decision
- Possibility of general models of specifications, and standard contracts and clauses.
- Liability monitoring and reporting. The Ministry of Finance (or government more broadly) would disclose PPP liabilities on an online platform/database.

- There is not a central project preparation fund (financing mechanism)
- Only an aggregate fiscal limit, not on year basis to smooth projects' fiscal impact
- Not regulation or guidelines regarding accounting PPP projects and their fiscal commitments.
- Lack of mandatory market sounding/ assessment - Including the potential interest from PPP developers and the capacity in the market for implementing the contract
- The bid evaluation committee members are not required to have any specific qualifications. The CNAPP, with members of ministry level, is in charge of bid evaluations without any specific support of a specialized technical committee.
- Not competitive tendering/bidding with pre-qualification stage
- It not clear that the authority must/could conduct a pre-bidding conference with potential bidders
- There is not a mandatory threshold for contract expansion/ addition (e.g., additional construction or service provision obligations)

Although different legal reforms to address some of the gaps have emerged, there is lack of consensus and support to move forward the legislative approval

Although good practices elements are in place, some challenges remain that could affect the credibility and capacity for PPP project execution

A. Regulatory and institutional framework

- Track record of preferences for trust funds as a project delivery platform
- Uncertainty and low institutional credibility
- Application of sectoral legal frameworks versus PPP scheme, and the terms to define when a project does not math with the PPP definition
- Potential misalignment of incentives as public entities will be funded by the projects' cashflows
- Harmonization of PPP into the national public investment system.
- Differentiate approval process for those project that do not fully can be conceive as PP of those project that don not entirely

B. Delivery capacities

- Alignment of private initiatives to Government priorities and development goals
- Efficient approval process in Congress (still to be proved)
- Development of capacities and knowledge concentrated in DGAPP could affects checks-and-balances arrangement
- Long preparation processes with political risk
- Incipient structuring and evaluation capacity for PPPs in contracting entities
- Coordination and opportunity in land acquisition by the government

C. Financing capacities

- Public works prioritized for short-term economic recovery, reducing available resources for public commitments in PPPs.
- Consistent funding for project preparation. Insufficient pre-investment funds
- Funding for road projects as RD Vial have the rights on existing toll revenues.
- Financing rinsed by RV vial is not related to the performance of the underline assets.
- Concentrated capacity for project financing in few financial institutions
- Few experience of local financiers and institutional investors in project finance for infrastructure under PPP scheme

D. Business environment and support

- Risk of perception of poor project preparation or execution meeting international standards
- Political and social risks a concern because of track record of public opposition to concessions (mainly related to user charges)
- Recognizable perception of corruption. The Transparency International Corruption Perception Index ranks the Dominican Republic as one of the lowest worldwide (ranked 137 out of 180).
- Consultation process with affected communities needs to be clearly stated into the socio-environmental impact assessment
- Private sector perception of costly and rigid preparation process for private initiatives

Source: World Bank (2020) Benchmarking ; Infrascope (2020);

Recommendations for cross cutting issues

Recommendations 1/3

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasability	Timeframe	Criticality
Governance	Projects' prioritization does not seem to be systematically backed by and assessed through comparison and ranking based on technical, financial, social and environmental criteria	Make MoF a gatekeeper on VfM, affordability and fiscal risk in project selection and prioritization	Increased impact of infrastructure service provision through greater societal value of projects, under fiscal management constraints	Low (need for technical capacity and political support)	Short / Medium	High
	Strong political incentive and institutional pressure to act (too) quickly on project preparation	Develop regulations, guidelines and methodologies for PPPs/concessions	Methods are clear at each stage of the PPP (and USP) cycle	High (on-going – see 1)	Short	High
		Build capacity on VfM and project structuring and procurement in contracting agencies	Contracting agencies (and public authorities more generally) are well equipped to manage project preparation, structuring and tendering	High (on-going – see 1)	Short	High
		Follow de jure project selection and prioritization in PIM	Increased capacity and credibility of public sector in managing private sector participation processes	High (on-going – see 2)	Short	High
	Private sector participation tracks differ, depending on which entity is in charge	Allow for a broader range of PSP approaches at all levels (while today several entities are used to applying one mode only)	Lines Ministries and other public authorities (including subnational level) are incentivized to correctly select the procurement method and structuring approach, to put forward a coherent pipeline of bankable projects	Low (need for technical capacity, political support and cross-sectoral coordination))	Medium	Medium

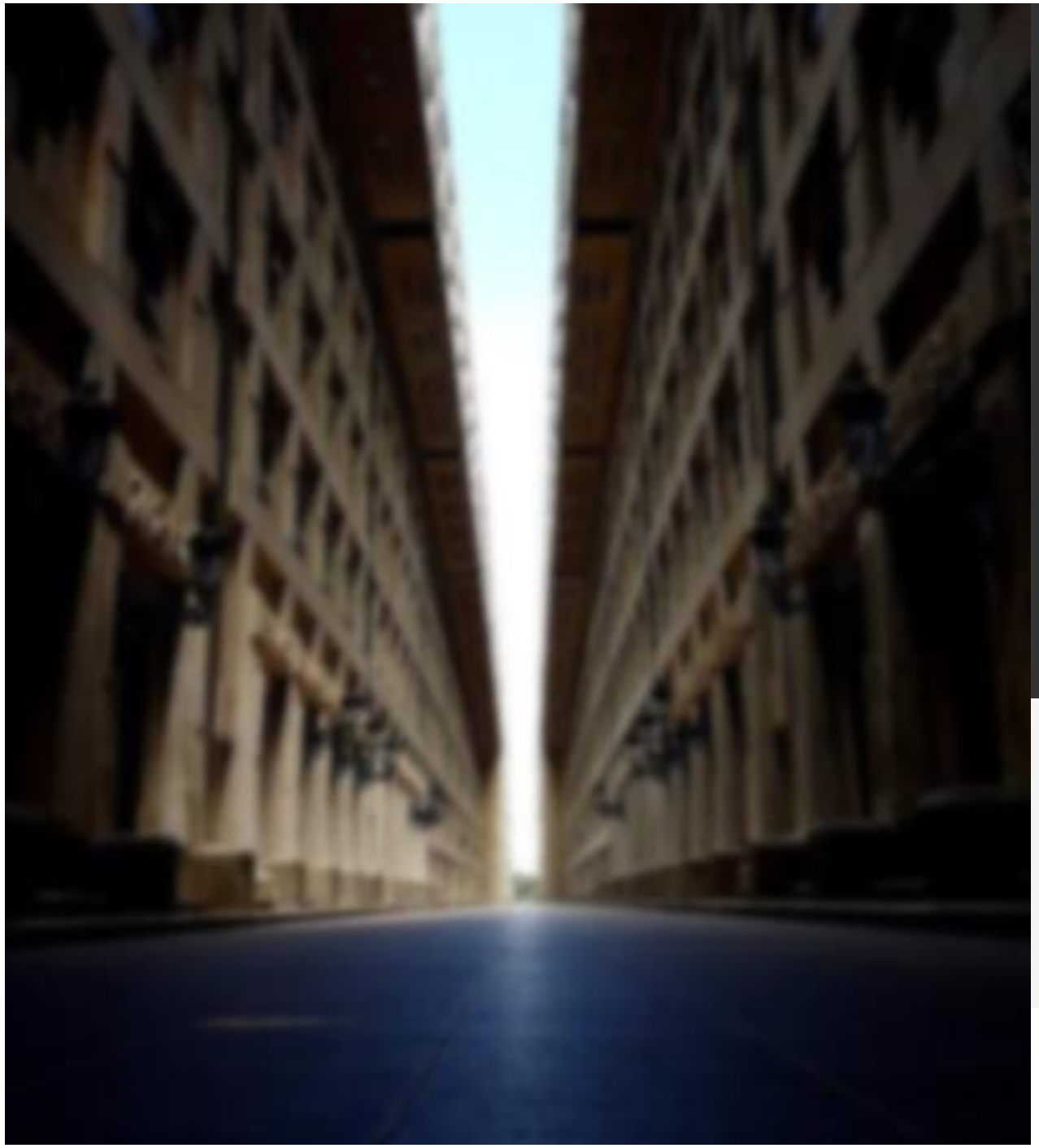
1 – On-going PPIAF funded technical assistance to DGAPP for the creation of a PPP manual and capacity building
2 – On-going Energy sector DPF

Recommendations 2/3

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Criticality	Feasability	Timeframe
Financing	Projects' poor preparation affect private sector financing	Properly hedge Minimum revenue guarantees with independently provided forecasts and with scenario analyses	Will let the MoF have better estimates and hedge of consistencies. Will provide accurate expectations to private sector financiers and sponsors	High	Low	Medium
	Limited infrastructure financing of pension funds	Continue with a fiscal consolidation process to reduce bond issuance and potential crowding out of private sector issuers	Will free up space of pension funds to invest in assets different than government and central bank bonds	High	Low	Medium-long
		Increase supply of bankable projects. Modify regulation to permit capital calls and as a lower priority create investment funds category dedicated to private equity and debt for infrastructure projects.	Will facilitate pension funds and other institutional investors capacity to invest in infrastructure projects	High	Medium	Medium
	Public sector trust funds operate below their potential	Modify mandate of trust funds to mobilize private sector financiers	Increase availability of capital to finance infrastructure. More efficient use of trust funds' capital by using it to incorporate private sector players in the financing of projects	High	Medium	Long
		Strengthen governance by incorporating in a staggered manner independent members to the board	Decisions oriented to benefit all of infrastructure financing and not biased towards government priorities. Increased transparency	Medium	Medium	Short
		Improve financial risk management of trust funds	Better capacity to operate without government support. Understanding of the risks involved. Improved capacity to develop products to mobilize private sector capital	High	High	Medium

Recommendations 3/3

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasability	Timeframe	Criticality
PPP	Alignment of PPP initiatives with sectorial plans and priorities	Implement a prioritization mechanism with technical criteria to connect sectorial long-term planning as a guide/support for defining potential PPP projects	Private PPP initiatives selection based on government plans and prioritization analyses using technical criteria	High	Short term	High
		Develop guidelines and procedures for managing private initiatives and applying technical criteria for project evaluation	PPP project privately originated being evaluated applying transparent procedures and technical criteria	Medium (Could require regulatory changes)	Mid term	Medium
	Adequate risk allocation and contingencies valuation	Develop and divulgate risk identification and allocation policy	Robust guidelines for risk identification and treatment in PPP projects that strength risk management and fiscal sustainability assessment	High	Short term	High
		Strengthen methodologies and available tools for risk valuation, in particular for contingent liabilities	Strong capacity and available tools for risk analysis and contingency valuation	High	Mid term	Medium
	Regulatory overlap and conflict of arrangements in the legal framework for certain projects	Consolidate clear regulation regarding PPP framework applicability for particular projects	Certainty and better coordination for the development of infrastructure projects with private participation across different sectors	Medium (Require legislative approval)	Mid term	High
	Consistent funding for project preparation applying good practices	Structure and implement a pre-investment fund for PPPs	Well prepared PPP projects with high credibility based on the application of good practices	Medium (Require political support and regulation)	Long term	Medium



Roadmap of recommendations

Prioritizing suggested policy actions

Introduction to the road map

- This section presents a road map of policy actions and other reforms that seek to improve infrastructure connectivity and the efficiency of public spending.
- The study helps identify some issues for which concrete policy recommendations are offered and others where further analysis will be necessary to confirm the diagnostic.
- The road map is based on the recommendations provided for each of the sectors as well as for the cross-cutting issues of governance, funding and financing and prioritize them based on the expected impact, criticality and feasibility

Some drivers to consider for decision making process:

- DR and WB collaboration differs depending on the sectors: for instance, in transport sector there is a need to re-start the dialogue between World Bank and Dominican Republic Government, while the dialogue is more advanced on digital development and while collaboration already exist for PPPs on the energy sector (DPL) and at the cross-cutting level (technical assistance with DGAPP)
- Strong nexus between cross-cutting and transport challenges (for instance, several trust funds are present in transport sector, from road maintenance to urban mobility topics)

Transport sector recommendations 1/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Interurban Transport	Inconsistent maintenance of road network leads to increased rehabilitation costs and road safety risks	Enhance road asset management by extending coverage to the entire network under long-term, performance-based contracts (Crema, PPPs)	Assured commitment to road maintenance leading to lower required funding and longer asset lifecycles	Medium	Medium(1)	High
	Land freight transportation inefficient and costly, hurting competitiveness	Expand capacity in the Duarte Corridor; consider alternatives e.g. duplicating the highway, building a rail line, or improving conditions for short sea shipping (cabotage)	Alleviated freight traffic between Santo Domingo and Santiago, improving congestion and safety; potential for lower CO_2 emissions	Medium	Long	High
		Reform the trucking industry: increase formalization and regulation of providers, while ensuring open and contestable freight markets	Higher operational efficiency leading to more reliable and affordable service; improved safety	Medium(2)	Short	Medium
	Inadequate transport connectivity hinders the development of lagging regions	Prioritize rehabilitation and all-season improvements in underserved areas e.g. Southwest and border regions	Increased access to markets and public services of local population, supporting a more equitable territorial development	High	Medium	Medium
	Road network increasingly exposed to extreme weather events	Mainstream climate resilience into road network planning, designs, and management	Wider adoption of proactive interventions and resilient designs, reducing the likelihood of damages and disruption	High	Medium(1)	High

(1) Requires extensive capacity building .
(2) Requires careful stakeholder engagement and management.

Transport sector recommendations 2/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
	Imprudent behaviors of vehicle operators magnify risks to road users' safety	Boost the enforcement of vehicle registration, speed limits, helmet usage, and driving under influence; intensify educational campaigns	Reduced frequency of road accidents due to behavioral factors	Medium	Medium	High
	Inadequate infrastructure amplifies risks to road users' safety	Prioritize remediation of inadequate road accesses, intersections, signaling, and user protection features, informed by effective use of crash data	Safer infrastructure leading to lower frequency death or injury from road accidents	Medium	Long	High
		Increase resource mobilization towards investments in road safety, including in partnership with the private sector		High	Medium	High
	Inadequate compliance in the replace of old vehicles which consume more fuel, break down often, and pose a safety hazard	Implement a scrapping program for private and commercial vehicles	Increased operational safety, lower energy consumption, reduced pollution and CO_2 emissions	Medium	Short	Medium
		Adopt stricter age, safety and emissions requirements for used vehicle imports		High	Short	Medium
		Implement best practices in vehicle scrappage programs Implement best practices in the design of the vehicle inspection PPP	Reduced frequency of road accidents due to vehicle malfunction; reduced pollution and CO_2 emissions	High	Short	Medium
	Slow progress in improving road safety outcomes	Strengthen INTRANT's leadership to empower it to coordinate implementation of national road safety plan	Accelerated implementation of the PENSV 2030 and its subordinated strategies (motorcycle, pedestrian)	High	Short	High

Transport sector recommendations 3/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Urban Transport	Inadequate coordination and fragmented decision-making authority are obstacles to effective delivery of major urban transport projects	Clarify institutional leadership and accountability to define priorities and deploy resources, based on demand geared at implementing the strategy laid out in the Santo Domingo mobility master plan	Accelerated implementation of major PMUS projects besides the metro expansion, i.e. BRT corridors	Medium	Short	High
		Provide capacity building on the public investment and PPP project cycles, to ensure technical quality and alignment of efforts among multiple stakeholders	More effective institutional cooperation towards delivering the prioritized pipeline	Medium	Medium	High
	Public transport modal shares remain modest in a context of increasing motorization and congestion	Accelerate the expansion and integration of public transport networks in main cities, while improving reliability and comfort; implement integrated fare system	Modal shift from private vehicles to public transport; reduced congestion, pollution, CO_2 emissions, and improved safety	Medium	Long	High
		Improve feeder bus services, enhancing coverage, frequency, and reliability to support increasing ridership to mass transit Traffic Demand Management measures to reduce car use and achieve modal shift		Medium	Medium	High
	High age of urban fleet increases operational costs, aggravates pollution, and worsens congestion due to frequent breakdowns	Support fleet renewal by incentivizing scrapping/replacement/recycling of old vehicles; stricter new and used vehicle standards. International best practices	Increased operational efficiency, reduced fuel consumption, air pollution, and CO_2 emissions	Medium	Short	Medium
		Scale up the successful transition of informal providers (Conchos) to formal transit line operators	Less congestion, pollution, higher safety; improved livelihoods for concho drivers	High	Medium	Medium

Transport sector recommendations 4/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasibility	Timeframe	Criticality
Urban Transport	Growing congestion reduces travel times for public transit as well, hampering ridership	Evaluate additional traffic demand management measures, such as congestion pricing, with the potential to mobilize revenues for funding public transit	Increased average travel times for all modes, with lower fuel consumption and CO_2 emissions	Low(1)	Long	High
	Urban sprawl with low densities unfavorable to service by mass transit	Clarify institutional roles and build capacity for implementing transit-oriented development solutions in cities. Empower a national agency to run TOD projects.	Urban densification around transit network nodes increases ridership and property values, while reducing km traveled and CO_2 emissions	Medium	Long	High
	Informal street parking bolsters private motorized transport, while clogging streets to the detriment of pedestrians	Ensure an adequate supply and pricing of parking space; implement paid on-street parking to mobilize revenue while strictly enforcing penalties for irregular parking	Better managed urban space that is more friendly to active mobility, and potentially restrictive to private car commuting thus reducing congestion and CO_2 emissions	Medium	Medium	High
	Urban configuration that is hostile to pedestrians and cyclists, reinforcing the desire for a private vehicle on safety and convenience grounds	Elevate the profile of non-motorized transport infrastructure, assigning high priority to implement cycleways and pedestrian master plans in cities	Increased uptake of active mobility trips, entailing lower CO_2 emissions; reduced safety risks to cyclists and pedestrians	Medium	Long	High
		Non-motorized mobility policy should emphasize user safety, convenience, and integration with public transport (bicycle parking, walkability)		High	Short	High

(1) Traffic demand measures could face fierce popular resistance in the Dominican Republic and would therefore require careful planning and communication.

Transport sector recommendations 5/5

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Feasability	Timeframe	Criticality
E-Mobility	Lack of readiness to accommodate penetration of private electric vehicles	Ensure the definition of industry standards, including environmental aspects such as battery disposal; ensure adequate coverage of charging network	Friendlier environment for mass adoption of private electric vehicles	Low	Long	Medium
	Fast-growing CO_2 emissions from transport, fueled by increasing motorization and stark congestion, threaten fulfillment of NDC	Assess adequacy of electricity grid to accommodate additional demand from large-scale adoption of electric vehicles	Improved preparedness to implement policies in support of electric mobility transition, required for attaining emissions reduction commitments	Medium	Medium	High
		Work, in parallel with the bus corridor transformation, on the Implementation of a e-bus corridor.		High	Short	Medium
		Build capacity at INTRANT and other entities to prepare for e-mobility transition; develop and implement a clear roadmap for adoption of electric vehicles in urban transport		High	Medium	High
	Difficult financial viability of spontaneous e-bus adoption by operators	Reform the business model to allow for separation of asset ownership and operations; provide adequate incentives to e-bus acquisition and financing; ensure the provision of appropriate maintenance and charging facilities	Leaner business model allows bus operators to focus on service, while capital investors reap returns over the asset's useful life; auxiliary facilities allow seamless operations	High	Short	High

Digital sector recommendations

Area	Challenge	Policy action assessment				
		Policy action	Expected Impact	Criticality	Feasability	Timeframe
Regulatory framework	Implementing an effective regulatory framework for laying and preserving subsea cables	Launch an ex post regulatory impact assessment in order to improve the regulation in place.	Identification of priority areas where the regulation should be improved	High	Medium	Mid-term
	Implementing an effective regulatory framework.	Develop the regulatory framework for laying and preserving subsea cables, according to best practices and based on evidence.	Improvement of the conditions that could guarantee the expected returns for investments.	High	Medium	Mid-term
	Implementing an effective regulatory framework.	Launch an administrative simplification strategy to make the investment process less burdensome.	The reform of regulations that create entry barriers in the subsea market.	High	Low	Short-term
Infrastructure	Full operation of the National Network of Optical Fiber managed by ETED.	Promote the interconnection with subsea cables and the use of such infrastructure to induce competition in the provision of internet bandwidth.	Make subnational markets for the provision of international bandwidth into a national wide-market.	High	Medium	Mid-term
Information	Improving the institutional capacities of INDOTEL.	Launch a strategy to collect and update information about the telecom sector.	Increase the information available to the sector, in order to take policy decisions based on evidence.	High	Medium	Mid-term

Cross cutting recommendations 1/3

Area	Challenge	Policy action assessment					Implementing agency
		Policy action	Expected Impact	Feasability	Timeframe	Criticality	
Governance	Projects' prioritization does not seem to be systematically backed by and assessed through comparison and ranking based on technical, financial, social and environmental criteria	Make MoF a gatekeeper on VfM, affordability and fiscal risk in project selection and prioritization	Increased impact of infrastructure service provision through greater societal value of projects, under fiscal management constraints	Low (need for technical capacity and political support)	Short / Medium	High	MEPyD
	Strong political incentive and institutional pressure to act (too) quickly on project preparation	Develop regulations, guidelines and methodologies for PPPs/concessions	Methods are clear at each stage of the PPP (and USP) cycle	High (on-going – see 1)	Short	High	MEPyD
		Build capacity on VfM and project structuring and procurement in contracting agencies	Contracting agencies (and public authorities more generally) are well equipped to manage project preparation, structuring and tendering	High (on-going – see 1)	Short	High	MEPyD
		Follow de jure project selection and prioritization in PIM	Increased capacity and credibility of public sector in managing private sector participation processes	High (on-going – see 2)	Short	High	MEPyD
	Private sector participation tracks differ, depending on which entity is in charge	Allow for a broader range of PSP approaches at all levels (while today several entities are used to applying one mode only)	Lines Ministries and other public authorities (including subnational level) are incentivized to correctly select the procurement method and structuring approach, to put forward a coherent pipeline of bankable projects	Low (need for technical capacity, political support and cross-sectoral coordination))	Medium	Medium	MEPyD

1 – On-going PPIAF funded technical assistance to DGAPP for the creation of a PPP manual and capacity building

2 – On-going Energy sector DPF

Cross cutting recommendations 2/3

Area	Challenge	Policy action assessment					Implementing agency
		Policy action	Expected Impact	Criticality	Feasability	Timeframe	
Financing	Projects' poor preparation affect private sector financing	Properly hedge Minimum revenue guarantees with independently provided forecasts and with scenario analyses	Will let the MoF have better estimates and hedge of consistencies. Will provide accurate expectations to private sector financiers and sponsors	High	Low	Medium	MH / BCRD
	Limited infrastructure financing of pension funds	Continue with a fiscal consolidation process to reduce bond issuance and potential crowding out of private sector issuers	Will free up space of pension funds to invest in assets different than government and central bank bonds	High	Low	Medium -long	MH / BCRD
		Increase supply of bankable projects. Modify regulation to permit capital calls and as a lower priority create investment funds category dedicated to private equity and debt for infrastructure projects.	Will facilitate pension funds and other institutional investors capacity to invest in infrastructure projects	High	Medium	Medium	MH / BCRD
	Public sector trust funds operate below their potential	Modify mandate of trust funds to mobilize private sector financiers	Increase availability of capital to finance infrastructure. More efficient use of trust funds' capital by using it to incorporate private sector players in the financing of projects	High	Medium	Long	MH / BCRD
		Strengthen governance by incorporating in a staggered manner independent members to the board	Decisions oriented to benefit all of infrastructure financing and not biased towards government priorities. Increased transparency	Mediu m	Medium	Short	MH / BCRD
		Improve financial risk management of trust funds	Better capacity to operate without government support. Understanding of the risks involved. Improved capacity to develop products to mobilize private sector capital	High	High	Medium	MH / BCRD

Cross cutting recommendations 3/3

Area	Challenge	Policy action assessment					
		Policy action	Expected Impact	Feasability	Timeframe	Criticality	Implementing agency
PPP	Alignment of PPP initiatives with sectorial plans and priorities	Implement a prioritization mechanism with technical criteria to connect sectorial long-term planning as a guide/support for defining potential PPP projects	Private PPP initiatives selection based on government plans and prioritization analyses using technical criteria	High	Short term	High	DGAPP
		Develop guidelines and procedures for managing private initiatives and applying technical criteria for project evaluation	PPP project privately originated being evaluated applying transparent procedures and technical criteria	Medium (Could require regulatory changes)	Mid term	Medium	DGAPP
	Adequate risk allocation and contingencies valuation	Develop and divulgate risk identification and allocation policy	Robust guidelines for risk identification and treatment in PPP projects that strength risk management and fiscal sustainability assessment	High	Short term	High	DGAPP
		Strengthen methodologies and available tools for risk valuation, in particular for contingent liabilities	Strong capacity and available tools for risk analysis and contingency valuation	High	Mid term	Medium	DGAPP
	Regulatory overlap and conflict of arrangements in the legal framework for certain projects	Consolidate clear regulation regarding PPP framework applicability for particular projects	Certainty and better coordination for the development of infrastructure projects with private participation across different sectors	Medium (Require legislative approval)	Mid term	High	DGAPP
	Consistent funding for project preparation applying good practices	Structure and implement a pre-investment fund for PPPs	Well prepared PPP projects with high credibility based on the application of good practices	Medium (Require political support and regulation)	Long term	Medium	DGAPP