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Strategic and Participatory Planning with Data

How INDOTEL Used GIS to Transform Connectivity in the Dominican Republic

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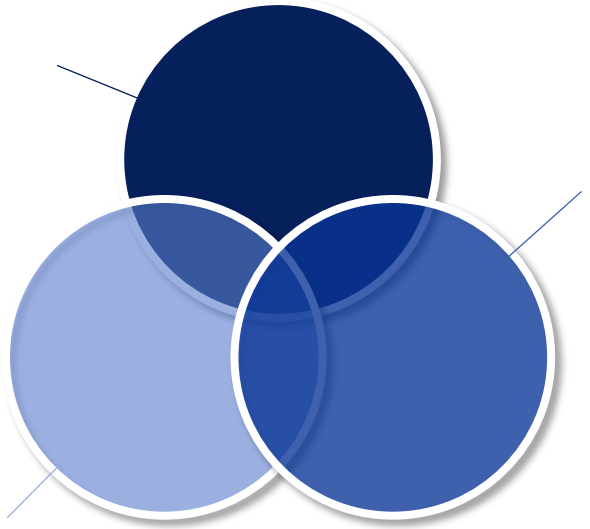
Context and need

In 2020, the pandemic showed that access to the internet was a universal right.



It also evidenced the lack of fixed internet connectivity in the country, especially outside the capital, and worse in the Southern Region.

INDOTEL signed a loan agreement with the IDB for the project to Improve Connectivity for Digital Transformation in the Dominican Republic.

Role of GIS

In 2020, we implemented a geographic information system to:

- Establish which areas of the country were effectively being covered, and which were not, by technology
- Identify areas of increased exclusion
- Auditing ISPs
- Prioritize public institutions and vulnerable populations
- Make diagnostics and proposals for particular situations

Sources of information

Multisectoral layers:

- ISP coverage (40+ providers)
- Existing road and electrical network (poles)
- Institutional presence (schools, health centres, town halls, etc.)
- Population, according to different sources

- User reported connectivity data (Ookla) (more than 4M tests, georeferenced)

Why Ookla?

- Industry Standard & Global Reach
- Regulatory Alignment with ISPs
- Comprehensive Data Collection
- Advanced Analytics & Visualization
- Proven Reliability & Support

DR in 2024

~6.9M mobile tests

~9.8M fixed tests

810 ISP identified

>3,500 servers

Obstacles faced

- Lack of transparency on the part of some ISPs
- Lack of knowledge on how to systematize information
- Presence of informal ISPs that do not report but provide service
- Resistance of local governments to approve infrastructure deployment

Best Practices

- Definition of strategic objectives of the system
- Modular system design, with scalable platform
- Multi-sector data collection and cleaning
- Clear data governance and roles
- Citizen participation
- Visualization and decision-making
- Maintenance, scalability and sustainability

Results to date

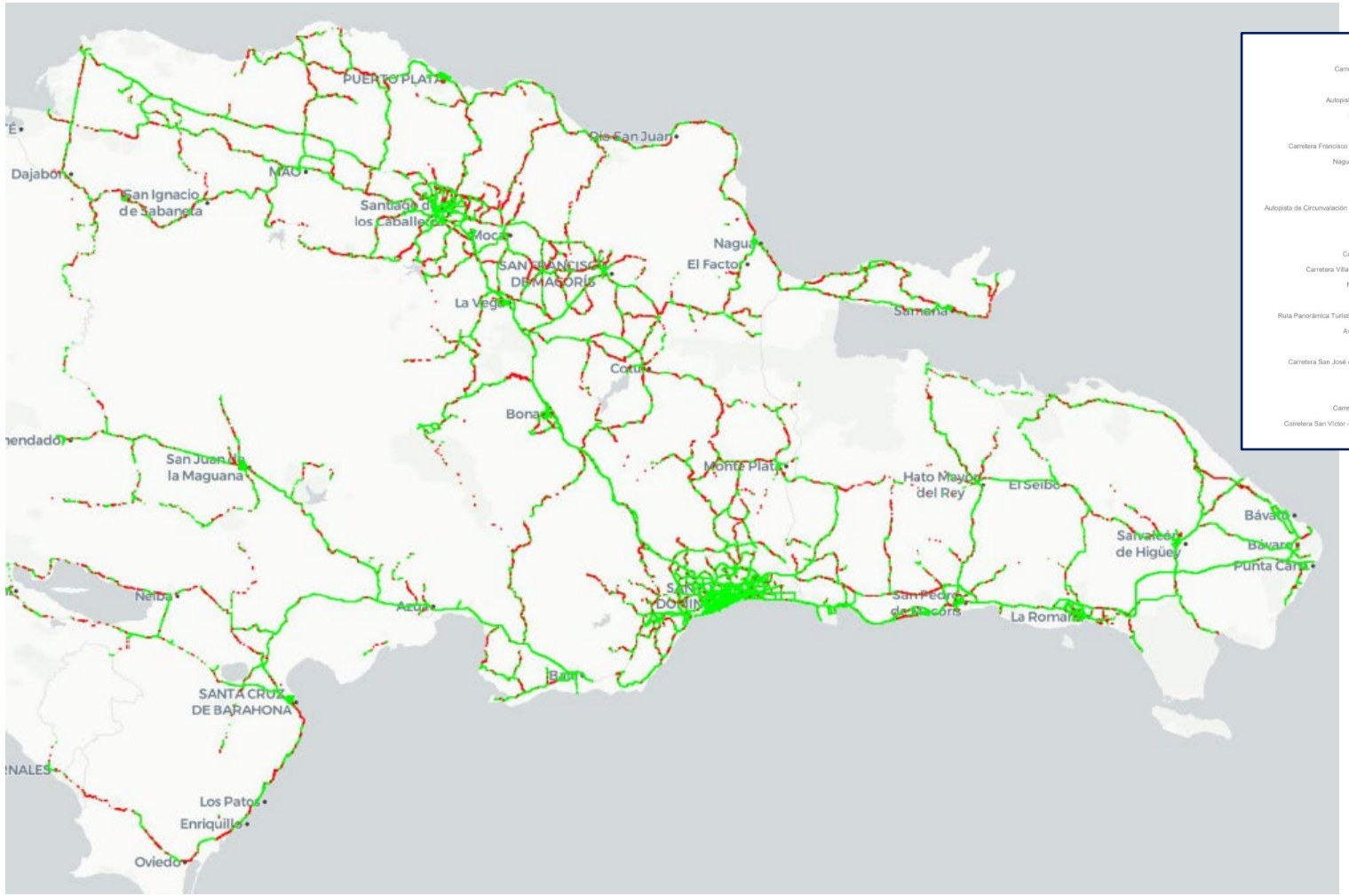
Connecting the unconnected

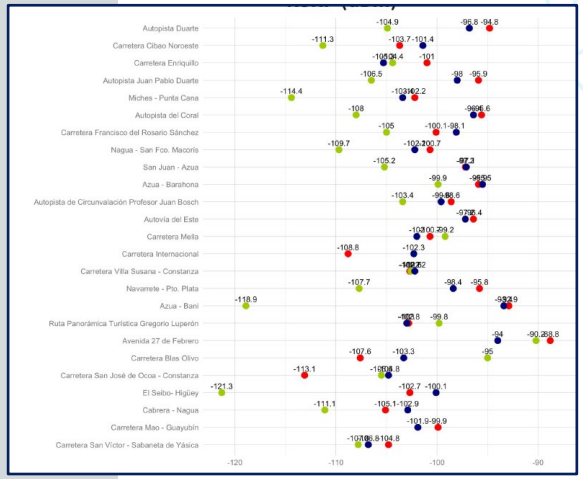
17 ultra remote areas located in the Central Mountain Range identified with GIS and connected with satellite networks + community networks.

Concession contracts

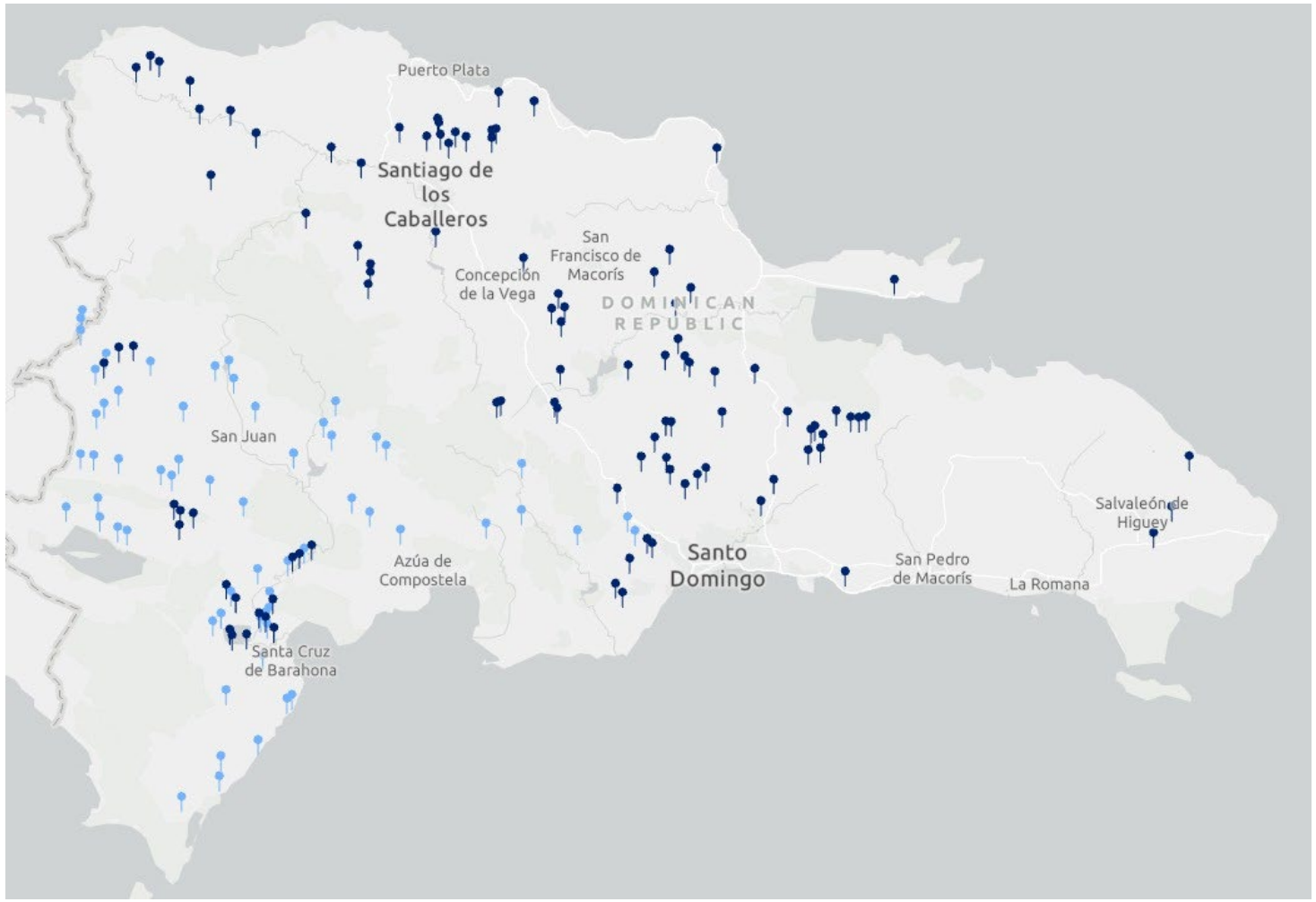
Within the framework of the signing of the concession contracts, GIS was used to identify areas to be developed within its Minimum Expansion Plan.

Results to date / Road coverage





Optical fibre deployment

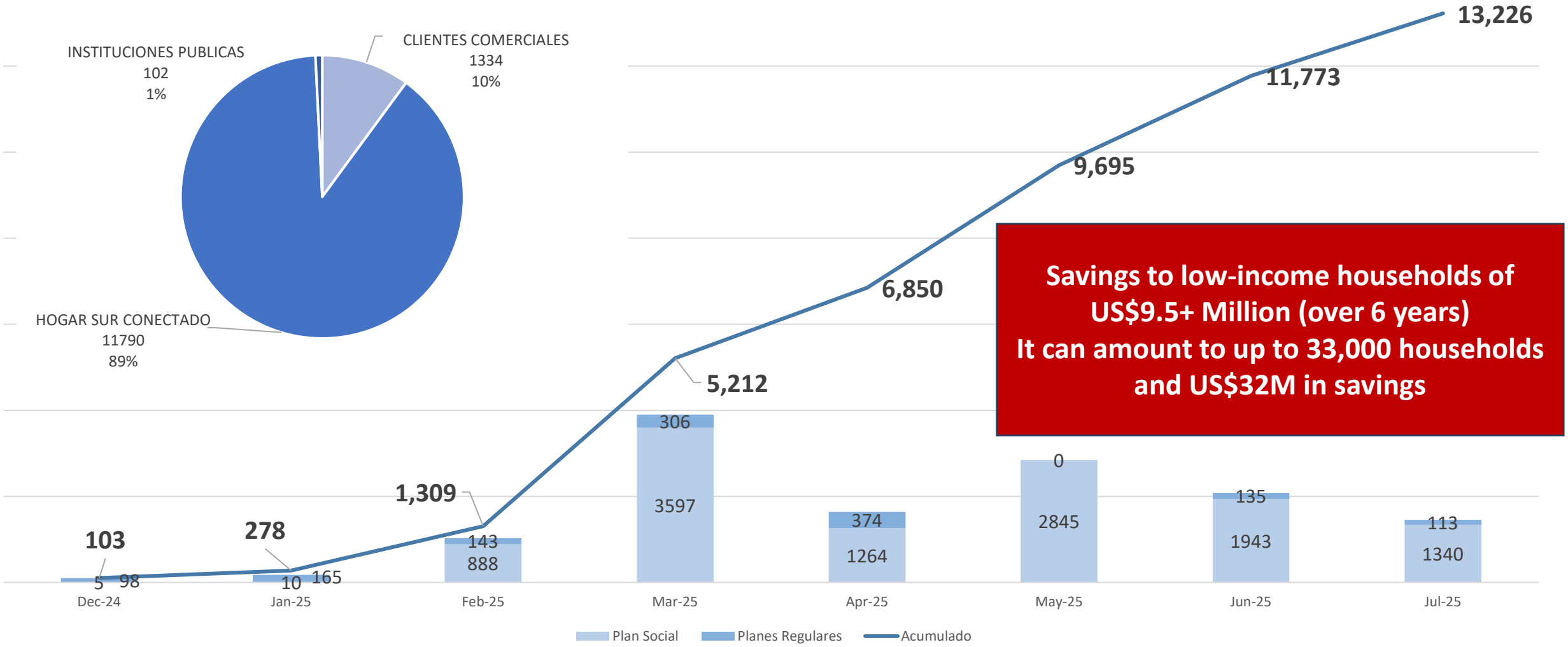


Phase 1 with 67 localities in 2023
Phase 2 with 103 localities in 2025

In total, 285,000+ inhabitants, 90,000+ households, and 623+ public institutions

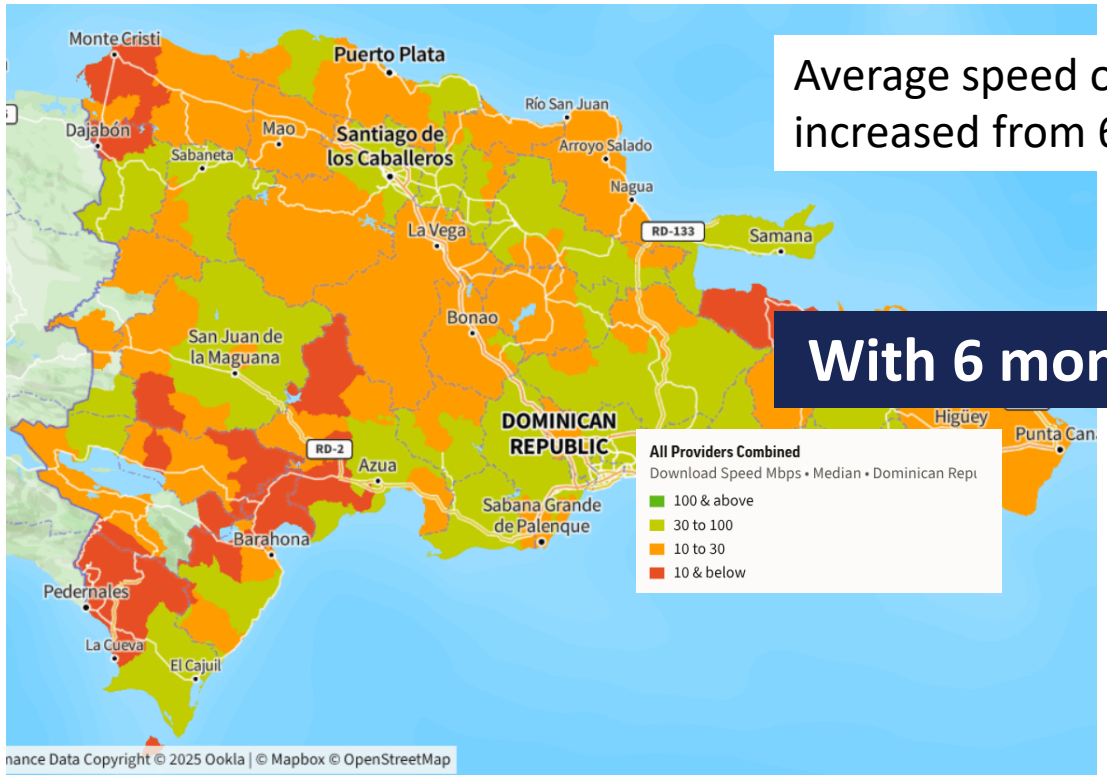
- Deployment of optical fibre
- Free Internet for public institutions
- Social Plan for low-income households (30Mbps <US$5) for 6 years

Optical fibre in the South



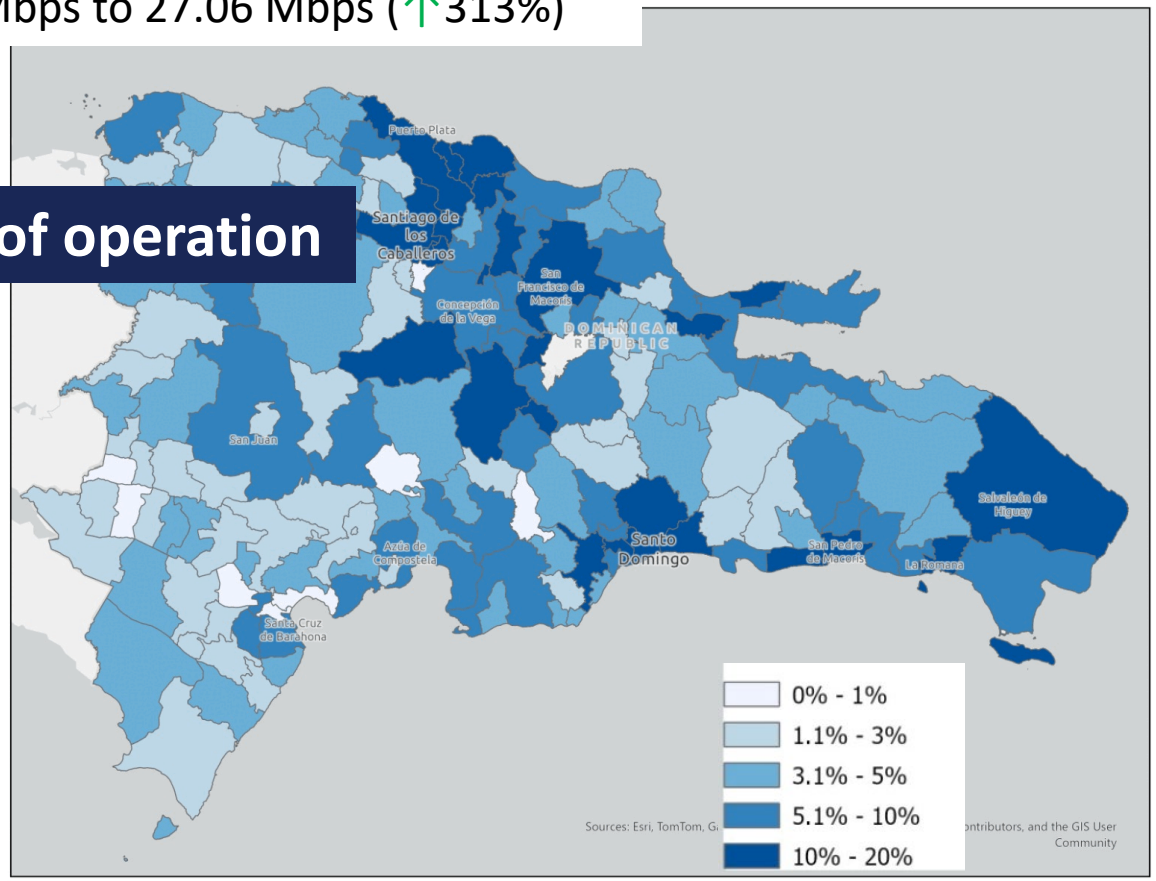
Savings to low-income households of US$9.5+ Million (over 6 years)
It can amount to up to 33,000 households and US$32M in savings

Optical fibre in the South



Average speed of the municipality of Los Ríos increased from 6.54 Mbps to 27.06 Mbps (↑313%)

With 6 months of operation



Penetration increased 227%, with some over 600%.

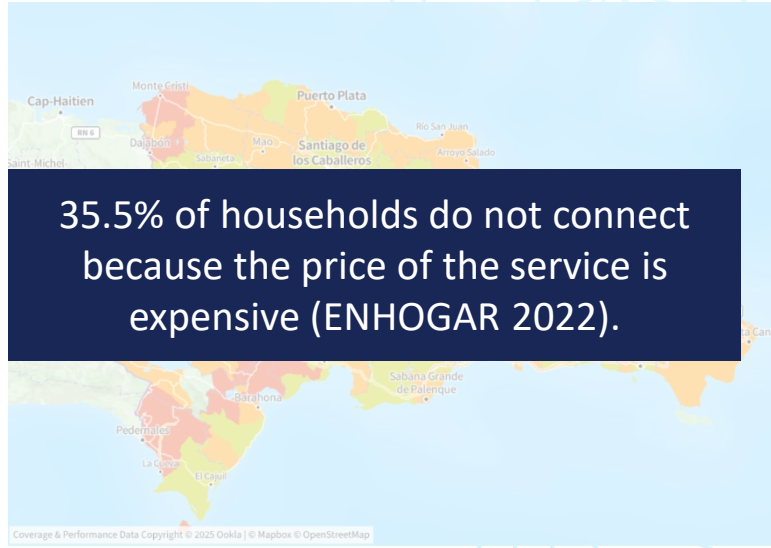
Overall, penetration in the 36 municipalities went from 16.31% to 20% (↑22.8%).

Network Modernization

Goal of connecting low-income households in cities with existing fixed network coverage, but with low penetration levels and low speeds.

160,000+ households in 93 municipalities could benefit from a social plan (GPON, 30 Mbps, <US$5) and a co-payment from INDOTEL for 2 years.

Target to increase the penetration of these municipalities from 17% to 30%.



35.5% of households do not connect because the price of the service is expensive (ENHOGAR 2022).

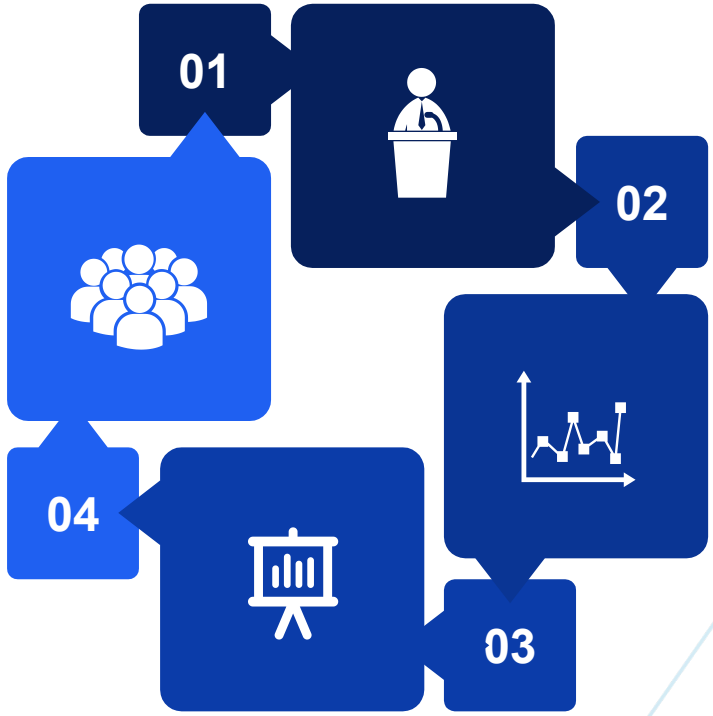
UN Broadband Commission: Internet is considered affordable if its monthly fee is less than 2% of average income.

	INCOME(RD$)	SOCIAL PLAN OF THE PROJECT	ISP #1 (Optical Fiber)	ISP #2 (Satellite)	% of Revenue		
LOWEST INCOME QUINTILE	$ 13,912.00	$ 299.00	$ 1,395.00	$ 2,100.00	2.1%	10.0%	15.1%
AVERAGE INCOME	$ 44,748.00				0.7%	3.1%	4.7%
HIGHEST INCOME QUINTILE	$ 91,726.00				0.3%	1.5%	2.3%

Source: Central Bank of the D.R.

Impact and lessons learned

1. Public policy design based on territorial evidence
2. GIS was crucial in prioritizing, allocating resources, and reducing times
3. Visualizing realities in a systematic way
4. INDOTEL was strengthened with technical and inter-institutional capacities



Recommendations

- Assess what a GIS platform can mean for good management
- Bet on the participation of users, either directly or through third parties.
- Align technical, political and community actors from the initial phases.

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