

Teresina, Brazil

Partner city

Status of the project: ongoing technical assistance



Basic Information

Urban area: 1,755 km²

Population: 1,021,229 | Growth rate: 1.21%

GDP per capita: USD 6,729

Modal Share

Formal public transport: 21.3%

Walking: 32.6%

Cycling: 11.8%

Private cars: 24.8%

Private motorbikes or 2-wheelers: 5.8%

National GHG emissions per capita: 5.12 (tCO₂eq)

Exposure to climate change: MEDIUM

Region capital city

Context

Teresina has an area of 1,392 km² and constitutes an Integrated Region of Economic Development (RIDE). Its population is of 1,203,922 inhabitants, including 844,250 in the Municipality of Teresina, with an average density of 584,94 hab / km² (IBGE, 2010). Its geographical makes it an important road junction as the city maintains the best road distance with all the Northeastern capitals. This potentially favours economic activities

The mobility in Teresina has been hampered by the growth model. The immediate effect is on public transport: increased distances per trip, reduced fluidity and safety and traffic efficiency (correct application of the execution processes), efficiency (obtaining desirable results) and effectiveness (guarantee of continuity), increased cost implementation, maintenance and compromising its quality. The 2008 Master Plan for Transport and Urban Mobility states that 1.91 million trips are made per day in the greater Teresina, standing out on foot (32.6%), followed by car trips (24.8%), and municipal public transport (21.3%); with less representation, bicycle trips (11.8%) and motorcycles (5.8%). The results indicate a low relative participation of the bus trips, indicating a difficulty of access of the population to the collective service of public transportation, due to the relation between income and income.

The current bus network system in Teresina is structured through 103 regular bus routes that was operated by 4 main operators (together it comprises 13 companies) that offered 110 trips/month, with an operational fleet of 470 vehicles and a technical reserve of 80 vehicles. This network is supplemented by 8 alternative service routes, operated by 45 vehicles from minor operators organized under the SINTRAPI (Alternative Passenger Transport Operators Union).

During the last year, the current system (called conventional system) has gradually been replaced by the new Integrated BRT System. In the conventional system the bus routes were classified into (i) radial – linking neighborhoods to the CBD – Central Business District; (ii) circular – performing complete circuits, leaving and arriving at the same terminal station; (iii) diametrais – connecting two points of the city passing through the CBD.

Almost all routes were directed to the CBD, which led to a high rate of overlapping of itineraries and a complete saturation of some routes in the system.

The Integrated BRT System introduces a new feeder-trunk system, operating with a set of feeder lines that connects neighborhoods to zone terminal, and trunk lines (BRT) departing from terminals to city center or linking terminals. It divides the city in 4 main zones (South, Southeast, East, Center-North -Teresina doesn't have West zone inside the municipal jurisdiction), each zone with 2 bus terminals, and the CBD has 4 unloading terminals. The bus route concession was bidded by zone, and each operator holds the concession for the set of routes of a zone. The scheme below illustrates the difference in design of the two systems:

Teresina Municipality Town Hall, the local counterpart, has the mandate and responsibility to finance mass public transport infrastructure. It has authority to borrow from international finance sources. Systems and procedures are partially in place to monitor, evaluate and report on urban transport.

The project will implement an Open Innovation approach which aims at (i) identifying the key issues of the transport system management and (ii) developing relevant digital solutions that can address those issues and scale up strategy.

The specific objectives of the Project are to:

- Provide a rapid assessment of the current public transportation system of Teresina;
- Co-identify and prioritise the main issues faced by the public transportation system;
- Identify solutions and technologies which could address those prioritised issues, including blockchain;
- Provide methodology and resources to prototype pilot projects;
- Lesson learned from the pilots, documentation and definition of the pilot implementation strategy.

The technical assistance contributes to institutional strengthening by tackling trust issues between all the stakeholders of the mobility sector through data and technological solutions.

Support from the Partnership

Technical Assistance: Pilot Project development

Funded by: EUROCLIMA+

Funding amount: EUR 500,000

Implemented by: AFD through the project

Local counterpart: Teresina Municipality Town Hall, Secretary of Planning and Coordination (SEMPLAN)

Supported activities:

- Install the blockchain platform and promote its use by the actors involved in the Teresina transport system.
- Implement a public transport governance system based on co-management and the opening of data and processes whereby the municipality, companies, users and the treasury interact in a collaborative way.

Status of implementation

Project start: 2019

Expected project completion: 2021

Completed outputs:

- Signature of a MoU between Teresina and AFD
- Finalization Diagnosis

Next expected outputs

- Setup of The Open Innovation.
- Pilot Conception
- Proof of concept
- Scale-up strategy

Core impact indicators baselines

Indicator	Baseline - 2020
Total annual transport related GHG emissions (Mt CO ₂ eq)(Brazil)	1,070.08 Mt CO ₂ eq
Annual transport related GHG emissions per capita (kg CO ₂ eq)(Brazil)	5,120 kg CO ₂ eq / capita
Air pollution Mean urban air pollution of particulate matter (in µg PM2.5) at road-based monitoring stations	13 µg/m ³ of PM2.5
Road safety Annual traffic fatalities in the urban area, per 100,000 inhabitants	22.8 fatalities / 100,000 hab

Highlights in the past year

The first phase of the support project is concluded, and the main results are the consolidation of the diagnosis, with the identification of a security and trust problem in the public transport system, especially towards women due to the increased violence rate. Likewise, the low punctuality or lack of precise information about the schedules; lack of real-time data; and lack or inconsistency of information for administrators and users, raises the level of distrust at a general level. Likewise, a review of technology was conducted and the list of problems identified to launch the open innovation phase.

Since the COVID-19 pandemic began, the progress of the Teresina project has been slow due to the limited availability of the beneficiary to attend the project meetings and review the products delivered by the consultant. Therefore, the support of AFD in the exhaustive review of the products and the follow-up of the consultancy has offset the delays generated by the health crisis. Additionally, the impossibility of holding meeting has affected the diagnosis phase, and consultations had to be taken online, through surveys and virtual workshops.