Kochi, India

Partner city

Status of the project: **Completed technical assistance**

Basic Information

Urban area: **632 km²**

Population: **2,100,000 (2011)** | Growth rate: **1%**

GDP per capita: **USD 2,800 (2017)**

GHG emissions per capita: **1,7 tons (India, 2014)**

Modal share:

- **Motorcycle: 26%**
- **Cars: 10%**
- **Public bus: 42%**
- **Cycling: 3%**
- **Walking: 12%**
- **Other motorised: 7%**

National GHG emissions per capita: **2.41 (tCO_2eq)**

Exposure to climate change: **HIGH**

Coastal City

Context

Kochi, one of the most important cities in South India, is also known as the commercial capital of Kerala. Its influence extends far beyond the municipal corporation area of 95 km² and its 650,000 inhabitants. The city's mobility demand is rapidly increasing, with the latest estimates indicating that the metropolitan region accounts for almost two million passenger trips per day (CMP, 2017).

AFD has supported Kochi's construction of a light metro and restructuring of its urban mobility. This innovation-driven project dramatically contributes to transforming Kochi into a Smart City.

Kochi has initiated various successful initiatives for the multimodal integration of the first phase of the metro under development. The city has introduced an integrated smart card system, established an agreement with rickshaw associations, and integrated metro stations with walking and cycling infrastructure.

The city has two railway stations, namely Ernakulum North and Ernakulum South, with an estimated daily passenger volume of 65,000. The stations are connected via a 3.8 km corridor that links significant activity centres such as Ambedkar Stadium, Lissie Hospital, and the KSRTC Bus terminal & depot. However, connectivity remains poor, and the primary modes of transport are walking and auto-rickshaws (intermediate public transport). Despite ongoing efforts, the urban local authority has struggled to improve connectivity between the two stations due to a lack of a suitable design and clarity on optimal movement patterns.

Recently, a renewed interest has been in improving mobility along the corridor. The city aims to develop it as a green corridor, improving connectivity, aesthetics, cleanliness, and security, thus increasing land value throughout. The objective is also to facilitate multimodal integration by improving the accessibility to metro stations from identified activity centres. The project aims to promote mobility, focusing on pedestrians and non-motorised modes to create a more walkable, safe, environmentally friendly, and humane city.

However, several challenges persist: lack of stakeholder buy-in for the Comprehensive Mobility Plan (CMP), failure to consider climate impacts in the CMP, disappointing metro ridership and revenues (probably due to inappropriate fares and competition with city buses), and insufficient data availability on urban mobility.

Support from the Partnership

Technical Assistance: Improve the existing city mobility plan and support a pre-feasibility study for a priority pilot project

Funded by: EU Asia Investment Facility (AIF)

Funding amount: Approx. EUR 700,000

Implemented by: AFD through the MobiliseYourCity India Project, supported by WRI for project management and coordination

Local counterpart: City of Kochi

Supported Activities:

1. Development of a toolkit for the preparation of sustainable and tailored Comprehensive Mobility Plans (CMPs), including the definition of monitoring indicators;
2. Capacity-building for Municipal Corporations and Unified Metropolitan Transport Authorities to
    I. Implement the toolkit within their cities
    II. Develop strategies for low-carbon transport in collaboration with city stakeholders
    III. Ensure the monitoring of strategy implementation through data collection
    IV. Facilitate data transfer to the national level;
3. Preparation of CMP improvements with city stakeholders, including conducting a bus route rationalisation study in Kochi;
4. Conducting a pre-feasibility study for a priority pilot project: the North-South Green Mobility corridor in Kochi;
5. Establishment of a dedicated unit within Urban Local Bodies to collect data and oversee the progress of CMP implementation, functioning as a “mobility observatory.”

The Urban Mobility Observatory was finalised in 2023. It showcases the data collected during the technical assistance period, providing an overview of transport-related information in Kochi. A set of 20 indicators has been defined and is presented through graphs and maps on an interactive website.[1]

Status of implementation

Project start: 2018 Q4

Project completion: 2023 Q4

[1] The Kochi Urban Mobility Observatory can be accessed via the following link: http://transitec.oslandia.io/sump/mobility-indicators/kochi

Completed outputs:

- Mobilise Days
- North-South rail corridor mobility improvement plan
- Eight capacity-building sessions
- Establishment of the urban mobility observatory
- Launch and implementation of the Green Mobility Corridor
- Bus Route rationalisation study

Finance leverage

Leveraged financing (resulting or enabled by the technical assistance)

Description	Source of financing	Secured	Amount
Loan to Kochi Metro Rail Limited (KMRL) supporting multimodal integration at metro stations.	AFD	Secured	Data not available
Additional financing has been allocated for the procurement of buses as part of the bus network restructuring	AFD	Planned	EUR 27 million

Insights from practice

Moving along an active railway - an uncomfortable and dangerous route

The corridor selected for mobility improvement is the shortest connection (2.5 km) between the Ernakulam North and Ernakulam South railway stations. No continuous road exists along this corridor, and the area is characterised by difficult accessibility, uneven paths, and inadequate lighting at night. Despite these conditions, four mobility surveys conducted in February 2020 as part of the diagnosis phase of the study indicated that almost 15,000 people travel along the corridor every day. This includes:

- 10,000 pedestrians who either walk along or on the tracks due to the difficult walking conditions (60%) or cross the tracks (40%)
- 3,000 autorickshaw passengers navigating complex and congested routes parallel to the corridor, transporting 8,000 people
- 400 cyclists utilising parts of the corridor that are accessible to them

The diagnosis of the current situation along the corridor indicated the necessity to improve the connectivity between the railway stations, the city centre, and the surrounding areas as part of integrating the area into Kochi's urban space. The current unsafe and uninviting conditions further accentuated the need for improved urban management.

Ensuring safe and comfortable movement along the railway - design and planning principles of the Green Mobility corridor

Based on the analysis of the current conditions and survey results of current corridor users, the plan for the Green Mobility corridor consists of four main components:

- The development of a green corridor adapted to non-motorised transport (mainly focused on pedestrians and cyclists)

- The development of e-rickshaw services on a separate line to provide a fast and environmentally friendly alternative to the current autorickshaws
- Development of hubs and connections to the city centre at core intersections like the KSRTC Bus Terminal to foster intermodal connections and create public spaces
- Development of social and commercial activities to increase the corridor's appeal

The design principles for the proposed project primarily focused on increasing the amenity and accessibility of the area for non-motorised transport modes by levelling the ground and developing 3 - 4.5 m pathways to ensure safe passage for cyclists and pedestrians within the existing right of way. As part of the aim to increase the security of users, the installation of fences and hedges to separate the railway tracks was included in the plan. An illumination concept will further ensure safe and appealing use during the night and can contribute to the corridor's beautification. Integrating existing trees into the new design is planned to further enhance the attractiveness and comfort of walking and cycling on the route.

On the pathway towards implementation

In this preliminary stage of the project, implementation costs were estimated at 250 million INR, approximately 3.31 million US$, excluding land acquisition. The estimated user frequency of the corridor and the associated benefits in terms of emission reduction and increases in social and economic activities include:

- A 50% increase in pedestrians and cyclists (including transfer from autorickshaws, motorcycles, and car users)
- Emission reduction potential of 84 tons of CO_2/year based on a transfer of 2,400 vehicle-km/day to green modes on the corridor
- Considerable improvements in safety (prevent people from walking on the railway tracks)
- Attractive public space for the 30,000 people who live, work, or study around the corridor.

The Mobility Improvement study suggests that the project could be implemented in the short term, and the municipality has already taken initial steps in this regard. The project was reviewed and updated by the technical department of the Kochi Municipal Corporation, and a preliminary assessment of land ownership was conducted to elaborate on feasibility. Despite delays due to the COVID-19 pandemic and the change of municipal government, the Municipal Council has presented and approved the project report to commence the Detailed Project Report process for further implementation.

Highlights of the past year

AFD has provided a loan to Kochi Metro Rail Limited (KMRL) for the Kochi Metro, supporting multimodal integration at metro stations.

An additional €27 million has been allocated for the procurement of buses as part of the bus network restructuring. There is ongoing collaboration to review and optimise bus routes following the routes recommended as part of the MobiliseYourCity Technical Assistance.

Updated in December 2024