

# Kochi, India

Status of the project: ongoing technical assistance



## Basic Information

Urban area: 632 km<sup>2</sup>

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

Coastal City

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 motorized: 7%

National GHG emissions per capita: 2.41 (tCO<sub>2</sub>eq)

## Context

Kochi, one of the most important cities in South India is also known as the commercial capital of Kerala. Its influence area spreads much wider than the municipal corporation area of 95 km<sup>2</sup> and its 650,000 inhabitants. The mobility demand in the city is exploding and as per the latest estimates, the metropolitan region accounts for almost two million passenger trips per day (CMP, 2017).

AFD has supported the city of Kochi in the construction of a light metro and the restructuring of its urban mobility. An innovation-driven project that greatly 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 in development. The city has introduced an integrated smart card, has 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 two stations are linked through a 3.8 km corridor with major activity centers, including Ambedkar Stadium, Lissie Hospital, KSRTC Bus terminal & depot. However, the connectivity is poor, and dominant modes of transport are walking and auto-rickshaw (intermediate public transport). And despite continuous efforts, the urban local authority has not been able to improve the connectivity between the two stations because of lack of a suitable design and clarity on the optimal movement patterns.

In the recent years, there has been a renewed interest on the need to improve mobility along the corridor. The city plans its development as a green corridor, improving connectivity as well as aesthetics, cleanliness, and security, thereby

raising land value all along. The intent is also to facilitate multi-modal integration by improving the accessibility of metro stations with the identified activity centers. The specific objective of the project is to promote mobility focusing on pedestrians and non-motorized modes to create a more walkable, safe, environment friendly and humane city.

Several challenges remain to be tackled: lack of appropriation of the Comprehensive Mobility Plan (CMP) by the involved stakeholders, the lack of consideration for climate impact in the CMP, disappointing metro ridership and revenues (probably caused by inappropriate fares and competition with city buses), and lack of data availability on urban mobility.

## Support from the Partnership

**Technical Assistance:** Improve existing city mobility plan and support prefeasibility study for 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. Elaboration of a toolkit for the preparation of sustainable and appropriated Comprehensive Mobility Plans (CMPs), and definition of monitoring indicators;
2. Capacity-building for Municipal Corporations and Unified Metropolitan Transport Authorities to (i) implement the toolkit in their cities, (ii) elaborate strategies for low carbon transport with the city stakeholders, (iii) ensure monitoring of the implementation of those strategies through data collection, and (iv) transfer the data at the national level;
3. Preparation of CMP improvements with city stakeholders: bus route rationalization study in Kochi;
4. Preparation of a prefeasibility for a priority pilot project: North South Green Mobility corridor in Kochi;
5. Creation of a dedicated unit within Urban Local Bodies to collect data and monitor the progress of CMP implementation as a "mobility observatory."

## Status of implementation

**Project start:** 2018 Q4

**Expected project completion:** 2022 Q4

### Completed outputs:

- Mobilise Days
- Launch of the Bus Route rationalization study
- Mobility improvement plan of the north-south rail corridor
- 8 capacity building sessions

### Next expected outputs:

- Establishment of urban mobility observatory
- Implementation of Green Mobility Corridor

## Highlights

### How Kochi aims to transform the walking experience of more than 10,000 users along the Green Mobility Corridor

As the economic capital of Kerala state in India, the metropolitan agglomeration of Kochi is home to approximately 2.2 million urban dwellers out of which 640,000 inhabitants are located in the core city. As mobility demand continues to rise, the city plans to restructure its urban mobility with support from AFD and the European Union. In addition to the construction of a light metro, Kochi is also tackling non-motorised modes, which account for 15% of all trips. The preparation of a Mobility Improvement Plan along the North-South Railway Station corridor also referred to as the Green Mobility corridor, is one of the major outcomes of this endeavour.

#### Moving along an active railway - an uncomfortable and dangerous route

The corridor that was considered for mobility improvement is the shortest connection (2.5 km length) between the Ernakulam North and Ernakulam South railway stations. No continuous road exists along the corridor and the area is dominated by difficult accessibility, uneven paths and lack of lighting at night. Despite these conditions, the four mobility surveys that were 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, including:

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

The diagnosis of the current situation along the corridor indicated the need to improve the connectivity between the railway stations as well as with the city centre and the surrounding areas as part of the inclusion of the area into the urban space of Kochi. The currently unsafe and unattractive 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 taking into account the results of surveys with current users of the corridor, 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 attractiveness of the corridor

The design principles for the proposed project mainly focused on increasing the amenity and accessibility of the area for non-motorised transport modes through the levelling of the ground and the development of pathways of 3 - 4.5 m that allow for a safe passage of cyclists and passengers in the existing right of way. As part of the aim to increase the security of users, the implementation of fences and hedges to create separation to the railway tracks was included in the plan. An illumination concept will further ensure safe and attractive use during the night and can also support the beautification of the corridor. Efforts to integrate existing trees into the new design are planned to further enhance the attractiveness and comfort of walking and cycling on the route.

### On the walkway towards implementation

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

- Increase of pedestrians and cyclists by 50% (including transfer from autorickshaws, motorcycles and car users)
- Emission reduction potential of 84t CO<sub>2</sub>/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 first steps have already been taken by the municipality in this regard. The project was reviewed and updated by the technical department of the Kochi Municipal Corporation and a preliminary assessment of the land ownership was made to elaborate the feasibility. Even though the Covid-19 pandemic and change of municipal government delayed the progress of the project, the project report has been presented and approved by the Municipal Council to begin the Detailed Project Report process for further implementation.