

## Executive Summary

The Government of Karnataka has engaged the Center for Study of Science, Technology and Policy (CSTEP) as a Technical Resource Institution to conduct a study titled ‘Sustainable Urban Planning Strategies for Cities in Karnataka’. The scope of the study includes: (a) developing a Proof of Concept Urban Observatory platform for Karnataka and (b) suggesting a set of sustainable strategies for cities in Karnataka with specific reference to water, sanitation and transport sectors. This draft report (Part-I) presents our work on developing a Proof of Concept Urban Observatory platform for Karnataka.

Urban Observatory platforms for cities enable data analyses and visualisation in a manner that can evoke policy response to tackle liveability and sustainability challenges in cities. The Proof of Concept Urban Observatory for Bengaluru and Karnataka developed under this study provides the basic architecture of such a platform. It further demonstrates how a complete data story can be presented by collecting, integrating, analysing and visualising data from multiple sources around a specific theme. The key features of this Urban Observatory platform include: (a) ability to crowd-source data, (b) ability to access and collate third party database and portals, (c) ability to generate spatial and temporal analysis and visualisation.

The Karnataka Urban Observatory dashboard generates GIS-based visual analysis on user defined queries for various administrative divisions of Karnataka state. It also offers the user to visualise changes in spatial direction of built-area growth based on ward-wise building permissions issued in a city over specific time intervals.

The Bengaluru Urban Observatory dashboard demonstrates innovative data collection, analyses and visualisation techniques around the theme of noise pollution. The primary data used in the Urban Observatory has been collected through the noise pollution measurement app *Shabda* (available in <https://drive.google.com/open?id=1YoU72l4gTYMU9dBMOxnJ4RvrAg6UGnEY>). This dashboard offers analyses and visualisation of noise trends in decibels for past 24 hours and for any other user defined time period in the past. It also offers analyses and visualisation of noise pollution levels around silent zones during different times of the day and compares the same against the permissible noise levels prescribed by the Karnataka State Pollution Control Board.

The Urban Observatory for Karnataka and Bengaluru can be accessed in <http://cstem.cstep.in/uoapp/#/>. All the components of this platform (i.e., database, middleware and front-end) have been developed using open source software and tools.

This Proof of Concept Urban Observatory can be expanded to explore other urban themes and can be replicated to create similar observatories for other cities in Karnataka.