



Client

Ministry of Housing and Urban Affairs, Government of India

Website

india-urban-observatory-mohua.hub.arcgis.com/

Location

New Delhi

Industry

Urban

Organization Profile

Ministry of Housing and Urban Affairs (MoHUA), Government of India, is the apex body for formulation and administration of the rules and regulations and laws relating to the housing and urban development in India.

Solution

ArcGIS

Highlights

1. Informed policy decisions, measure impacts of government programs and support performance management
2. Empowers citizens and communities in being better informed about their lives and surroundings
3. Leveraging data from different sources to enable evidence based planning

Project Summary

A state-of-the-art India Urban Observatory has become operational in the Ministry of Housing and Urban Affairs. As cities begin to implement 'smart' solutions, data is becoming a significant asset and an enabler for data-driven governance, leading to urban transformation. The Observatory will plug into various sources of data from cities both from real-time and archival sources for generating insights through analytics for cities, academia, industry, and governments. This will greatly contribute to evidence-based decision making and policy making.

Challenges

The Government of India launched its Smart Cities Mission on 25 June 2015. The mission acknowledges a city can become truly smart if its core planning, design, operations, maintenance, and governance is data-driven. There was a need to create a system that can collect data from various IoT devices and sensors, the Integrated Command & Control Center (ICCC) and other urban indicators and analyze them to generate insights for all stakeholders and city planners. This system will also help in creating shareable plans illustrating various urban data. This system will also help in creating shareable plans illustrating various urban data maps of housing, street network, electric grids, water supply, and other essential infrastructure.

The objective behind establishing the Urban Observatory is to:

1. Provide a cognitive intelligence to the data generated over a period through the use of GIS technology.
2. Provide an impetus to evidence based planning by generating spatial insights to different problems of cities.
3. Provide an insight into the impacts of the urban mission programs on the city's overall development in terms of ease of living and ease of doing business.
4. Give a visual analysis of the performance assessment against the benchmarks of urban services.
5. Provide a live medium of performing capacity building of the data champions to give them an understanding of how the data visualization can drive to the knowledge and decision making.
6. Share and spread the best practices of Urban Management.

Solution

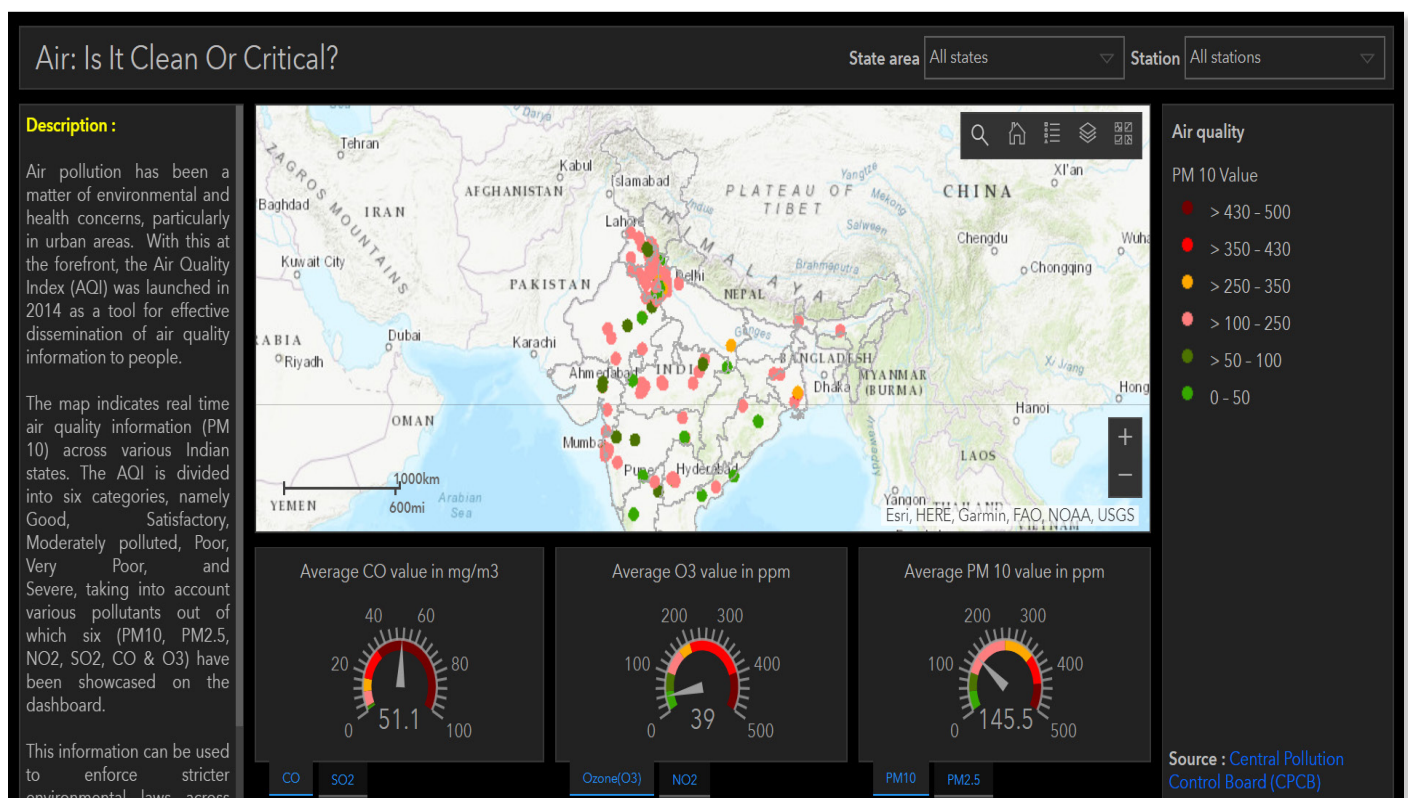
Ministry of Housing and Urban Affairs, recognized, that as cities begin to implement 'smart' solutions, data becomes a significant asset and enabler for data driven Governance, leading to urban transformation. They recognized GIS as a foundation technology for planning, designing and construction to operation, maintenance and governance, of a modern city and partnered with Esri India for creating the India Urban Observatory.

The Indian Urban Observatory is an interactive showcase of collective insights on cities across various parameters, collected from data obtained through APIs, open-source database, archived Sources, sensors and third-party sources, including citizens and social media. The urban observatory provides reliable information on a varied set of indicators, ensuring propagation of best practices, efficient planning, and timely interventions.

The GIS-based insights and intelligence offer the following to India Urban Observatory:

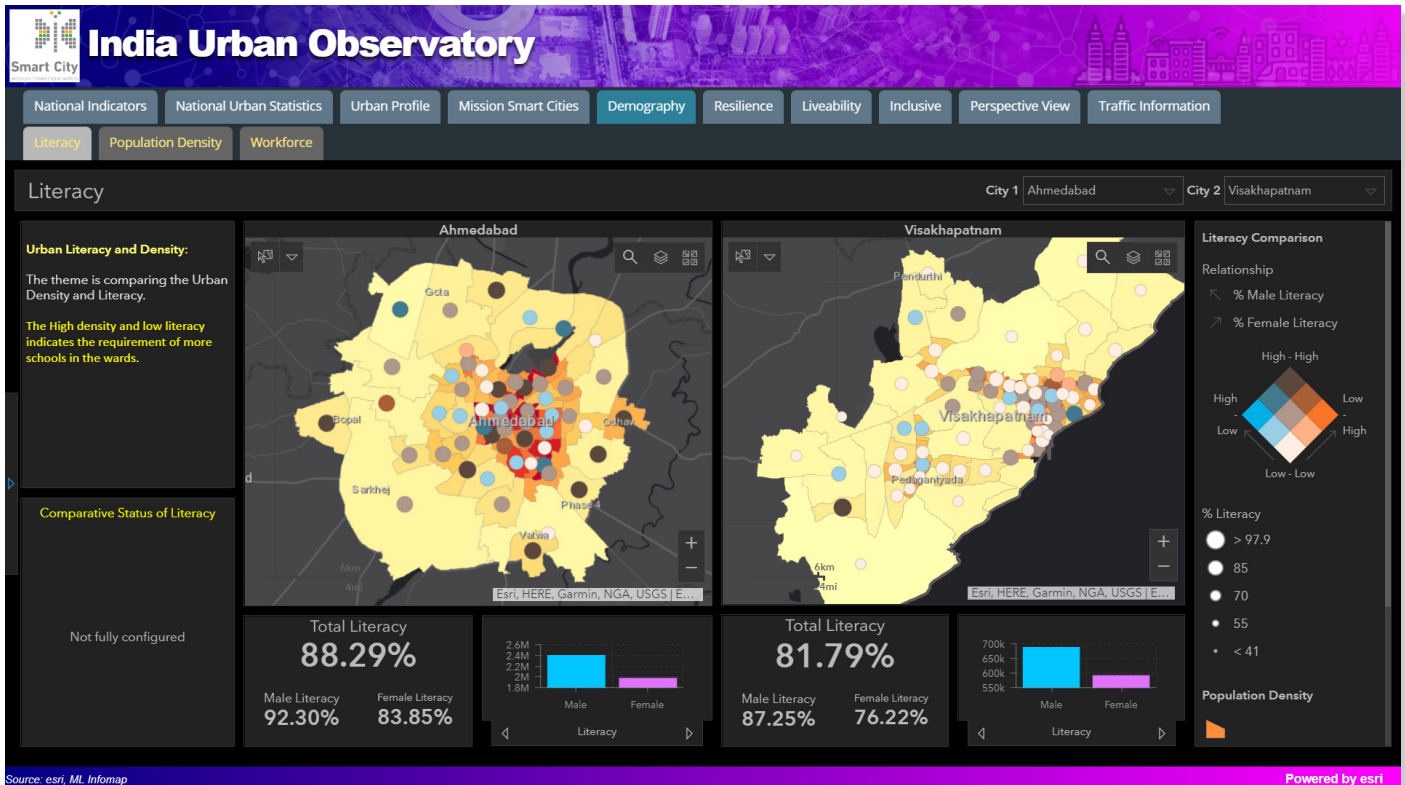
(a) National Indicators

- Geospatial Insights of various urban development parameters like Smart City project cost per capita and per unit area, ease of living index of cities, vehicle registration in cities, mode of transportation in cities, etc.
- Geospatial Insights for near real-time urban issues like pollution status in different cities, traffic situations in different cities.
- Geospatial insights into various socio-economic development features of the city, like urban density, urban literacy, urban sex ratio, slum population of cities and access to basic amenities.
- Geospatial insights into the urban development projects like Houses constructed and occupied under PMAY project.
- Geospatial insights into future scenarios like water availability status and rise in temperature due to climate change.



(b) City Level Indicators

- The geospatial frame is created to compare two Smart Cities at a time for different parameters of urbanization.
- The comparison of Socio-economic indicators like ward wise literacy, sex ratio, urban density, and workforce.
- The comparison of urban services and infrastructure like ward wise water supply, sanitation, housing, source of lighting, LPNG.
- The comparison of City wise phenomena like Solid waste generation in the city.



(c) Mission Projects details

- The web application and geospatial insights to undertake monitoring and evaluation of mission projects like Smart City.
- National level Project schedules.
- City wise Project status in terms of DPR, Tendering, and Project initiation.
- Project expenditure.
- City Wise Rankings of Smart City development.
- Sector-wise project implementation status in cities.



Benefits

India Urban Observatory is a lab to convert data into meaningful insights for evidence-based planning.

- The Observatory is helping in getting reliable, up-to-date information on a meaningful set of indicators over various domains such as transport, health, environment, water, finance and so on, which will further assist in developing best practices, future strategies and policy interventions as and when required.
- The first-of-its-kind observatory leverages data analytics to optimize city operations, improve governance and enhance economic performance of cities across the country. The conceptualization of this Observatory recognizes the value of enhancing engagement among all four stakeholders of the 'quadruple-helix' model - Government, citizens, academia, and industry, along with improvements in the internal workflow and decision-making processes of city Governments.
- The India Urban Observatory will progressively become the chief data analysis and Management Hub of the Ministry and would enable evidence-based policy formulation, capacity building of ecosystem partners on data-driven governance, foster innovation through the development of newer and better use cases thereby enabling solutions at scale and speed.
- It will further provide a scientific response to the complex challenges to urbanization through the use of state-of-the-art technologies and collaborations.
- It connects city services through public digital data, app data, social media data and sensor data to GIS-based visualization.
- It opens up new ways for cities to collect, integrate, plan and visualize data by adopting innovative design and planning tools created by researchers, academics and the industry.
- It enhances citizen participation in decision-making, improving transparency and accountability while ensuring privacy through Spatial Insights into the data.

This India Urban Observatory is an experiment of how Geo-spatial technology can support monitoring and evaluation of Programs, how it helps in studying the impacts of development on the life of citizens and the physical progress of the city.

// India Urban Observatory is the data analytics and management hub of the Ministry of Housing & Urban Affairs to study insights & trends for Indian cities on various parameters. It leverages the analytical capability of Esri GIS platform for evidence based planning and data driven governance while engaging the stakeholders - government, citizens, academia, and industry. //

- Kunal Kumar

Joint Secretary, Ministry of
Housing & Urban Affairs