



INDIA URBAN OBSERVATORY

India Urban Observatory enables evidence-based planning

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 Indian government's Smart City Mission, launched in 2015, acknowledges that a city can become truly smart if its plan, design, operation, maintenance and governance are 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 starting from housing maps, street network maps, electric grids, water supply maps, 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 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 doing 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, recognised, that as cities begin to implement 'smart' solutions, data becomes a significant asset and enabler for data driven Governance, leading to urban transformation. They recognised 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 India Urban Observatory, is an interactive showcase of collective insights on cities across various parameters, collected from data obtained through APIs, open-source databases, 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.

solid waste generation in city.

(b) City Level Indicators

The Geospatial frame is created to compare two smart cities at 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

(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, project initiation.
- Project expenditure.
- City wise rankings of smart city development.
- Sector wise project implementation status in cities.



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



Key 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.
- 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 development of newer and better use cases thereby enabling solutions at scale and speed.

- It will further provide scientific response to the complex challenges to urbanization through 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 visualise 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 Geospatial technology can support monitoring and evaluation of programs, how it helps in studying the impacts of development on life of citizens and the physical progress of city. ■