



Urban Agenda Platform

The global platform for sharing progress, action and knowledge on the implementation of the New Urban Agenda to achieve sustainable urban development.

# URBGOV (URBAN GOVERNANCE): A GIS-based Urban Governance and Planning Tool

Region	Asia and the Pacific
Award Scheme	Dubai International Award
Themes	Planning & Design
Sustainable Development Goals	Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable

## Summary

URBGOV (URBAN GOVERNANCE) is a GIS-based, Volunteered Information Platform that supports local & effective city planning, community-based decision-making & targeted service delivery. It integrates proffered community information with city data for a spatialized & comprehensive view of the city's infrastructure, service gaps & delivery options.

## Background and Objective

Even as municipalities must provide basic services to all citizens, the informal poor get missed as cities lack community-level, multivariate, geo-spatial data for planning service delivery. Municipal funds are misspent, & produce less than desired impacts. Cities store data in spreadsheets & are incapable of visualizing, collating & interpreting the information for localized service delivery. Estimated losses from unplanned interventions, is between \$330 billion to \$1.8 trillion by 2050 (The Economic Times, Nov 29, 2016). At the household level this equals more than 20 percent of average household incomes; the gap being widest at the base of the pyramid. Community participation is vital for inclusive & sustainable development. Local governments are paternalistic. They are disinclined, & lack skills & time to engage people. URBGOV involves communities, in providing data, making the right choices & taking informed decisions on what they want. Communities validate data, adding qualitative parameters & suggest options. The process is both equalizing – both loud & soft voices get heard, & lowers the cost of service delivery by creating involvement. URBGOV is a low-cost, simple, web-based solution, using open-source software. Data for URBGOV is crowd-sourced from city engineers using geo-tagging skills on their personal smart phones – making data collection inexpensive, quick & undeniable. Google maps are used where cities have no city maps. Being part of data generation guarantees ownership. Using Smart phones smartly, is aspirational. Using open source software alleviates need for highly qualified GIS-experts in small towns where none are available. A set of pre-defined algorithms analyse, overlay & correlate diverse data layers such as when data on sanitation is crossed with health hotspots, such as during COVID 19. Once quality analysis has been derived, community-led sustainable solutions can be suggested & implemented, like rainwater harvesting & DEWATs.

## Actions and Implementation

URBGOV inculcates seamless inter-departmental coordination; resulting in improvement of workflows & optimized use of scarce resources by integrating data with city, changing the work-culture in municipal offices & decision-making bodies. URBGOV also creates a bridge between the informal communities & the municipal decision makers. Once they become aware of the conditions on the ground, the decision-making process becomes more inclusive & efficient. This is positive cultural change. Assessment by URBGOV has also led to community-led interventions. Rainwater harvesting in Agra in low-caste, poor communities has flipped the power-relations during water-scarcity. Interventions at the leprosy colony in Rourkela has resulted in the most vulnerable getting socially integrated into society with formal space for businesses and economic exchanges & exiting beggary. URBGOV has helped municipalities (Ajmer, Noida, Muzaffarpur) reduce open defecation. This is positive cultural change.

## Outcomes and Impacts

URBGOV focuses on collaborative knowledge creation that promise huge cost savings for cities. On the social level, increased access to quality infrastructure, promotes social equity, especially for women, elderly, disabled, children etc. Better access to good water lowers social frictions & competitions in collection, making communities cohesive & saves health costs. Sustainable & equitable infrastructures like simple sewers networked to trunk lines in Delhi, collect & convey toilet waste to treatment plants, reducing city's health burden. Due to mapping of open-defecation areas, cities (Ajmer, Muzaffarpur, Noida) have managed to reduce it. URBGOV maps & planned investment helped East Delhi to improve performance scores in the



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Clean India Survey. Mapping of garbage disposal spots facilitated planning for decentralized composting, reducing organic waste transportation & methane build ups. In Dharamshala, URBGOV has been used to map traditional water sources for water-resilient planning

## Sustainability and Scalability

URBGOV emphasizes on the informal settlements in the city. These are among the least developed settlements typically in any Indian city. Its goal is to integrate, include & ensure services equity. Planning for public toilets in slum areas where space or legality are issues, is a key component of URBGOV. Access to sanitation is an important components of gender-equality, since women need dignified, healthy & safe toilets. Mapping in Rourkela helped identify the most vulnerable settlements – people affected by leprosy. Its success led to city requests to locate 4 more areas for social integration. URBGOV has mapped schools, toilets & solid-waste management points in East Delhi, leading to better planning, development of resilient schools in blighted neighborhoods with circular economies - school-clean up, waste-segregation & composting, harvesting rainwater, micro DEWATs, & growing food. By reducing inequality, URBGOV builds up social capital for a resilient city.

## Gender and Social Inclusivity

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## Innovative Initiative

URBGOV is innovative as it provides a spatial technology based platform for the presentation of informal communities-level data to the topmost decision makers in cities. Simultaneously it provides a non-grievance based channel of city-citizen communication with circular feedback loops. URBGOV technology, once developed provides a systems approach whereby small Indian towns can leapfrog the problems faced by larger ones from piecemeal planning, & pave way for sustainable development. For e.g. community-managed infrastructures implemented after URBGOV assessments like rainwater harvesting in Agra & DEWATs in Shamli town suggest these towns can use the tool to plan sustainable, affordable, local & people-managed infrastructure. URBGOV is affordable since it uses free, open-source software (FOSS) & personal smartphones for data collection. For municipalities, this works to eliminate the need for a GIS personnel. Crowd sourcing is cheap, fast & validate-able & produces effective outcomes.

## Resources devoted to delivery

Aspects of URBGOV have focused on building ecological resilience. Rainwater harvesting (Agra, Rourkela) increases water resilience and involves people in resource generation, water conservation, groundwater recharging and water management. Decentralized wastewater treatment systems (DEWATs) provide a low-cost method to prevent contamination of ground & surface water and repurpose treated water for non-drinking uses. These also reduce pollution in rivers by discharging clean water into the rivers. Composting efficiently treated organic waste, reducing carbon footprint. Traditional water point mapping in Dharamshala has been used to develop plans for water-resilience that have identified points of solid waste entry into the streams. Improved waste-management, rectification of overflowing open drains—these also contribute to better environment. URBGOV is thus able to lower ecological footprint.

## Conclusion

URBGOV has been piloted in EDMC (East Delhi). It is now being replicated in NDMC (North Delhi), Agra, Noida, Shamli, Ajmer, Muzaffarpur, Rourkela & Dharamshala. Since it is a low-cost technology with a one-time investment in development of the platform it is easily replicable not just in Indian cities but also in other developing countries. It is agnostic to geographies. URBGOV is independent of highly skilled GIS professional or software, which small Indian cities cannot afford. URBGOV has the potential for a capacity-building partnership between cities. Mature cities like EDMC shall become lighthouse cities, supporting & mentoring their weaker neighbours to implemented URBGOV in peer-to-peer learning process that will also co-produce knowledge.