



# Sansad TV Special: Smart Cities | Technology Meets Humanity

**For Prelims:** [Smart Classrooms](#), [Smart Cities Mission \(SCM\)](#), [Urban Infrastructure](#), [Ministry of Housing and Urban Affairs \(MoHUA\)](#), [Sustainable, Inclusive, Urban Challenges](#), [Public-Private Partnerships \(PPPs\)](#), [Municipal Bonds](#), [Housing](#), [Smart Roads](#), [Renewable Energy Projects](#), [Urban Transit Systems](#), [Sameeksha Series](#), [Ease of Living](#), [Waste Management](#), [Artificial Intelligence \(AI\)](#), [Internet of Things \(IoT\)](#), [Blockchain Strengthen Cybersecurity Frameworks](#).

**For Mains:** Significance of Smart Cities Mission for Sustainable Development.

## Why in News?

A report by the **Indian Institute of Management, Bangalore**, highlights that [smart classrooms](#) introduced under the [Smart Cities Mission \(SCM\)](#) have increased school enrolment by 22% across 19 cities.

- By November 2024, the Smart Cities Mission **achieved remarkable milestones, completing 91% of projects**, thereby significantly enhancing [urban infrastructure](#) and overall quality of life.

## What is the Smart Cities Mission (SCM)?

- **About:** The **Smart Cities Mission (SCM)**, launched in **June 2015**, by the [Ministry of Housing and Urban Affairs \(MoHUA\)](#), aims to transform urban living by promoting [sustainable, inclusive](#), and technology-driven development.
  - The Mission has been extended for period upto **31<sup>st</sup> March 2025** to complete balance **10%** projects.
- **Key Components and Strategies:**
  - **Area-Based Development (ABD):** Focused on upgrading specific areas within cities into **replicable urban models** through **citizen engagement** and **targeted interventions**.
    - These interventions include **modernizing infrastructure** and enhancing service delivery to address critical [urban challenges](#) efficiently.
  - **Pan-City Projects:** Employs technology-driven solutions to enhance city-wide infrastructure, such as **intelligent traffic systems**, integrated command centers, and [e-governance](#) platforms for better management.
  - **Special Purpose Vehicle (SPV):** Cities created SPVs to implement SCM projects, ensuring **robust governance, accountability**, and accelerated project execution.
  - **Funding Mechanisms:** SCM utilized diverse funding sources like [public-private partnerships \(PPPs\)](#), [municipal bonds](#), and central and state government contributions to sustain its projects.
  - **Performance Analysis:** The [Ease of Living Index \(EoI\)](#), [Municipal Performance](#)

**Index (MPI)**, and the **ClimateSmart Cities Assessment Framework (CSCAF)** play a crucial role in advancing smart cities.

- These indices evaluate urban aspects like infrastructure, governance, and quality of life, fostering accountability, efficient resource management, and data-driven decision-making.

▪ **Targets and Scope:**

- **100 cities** were selected competitively to implement the mission’s comprehensive strategies.
- Focus areas included **housing, transportation, education, healthcare, governance, and recreational spaces.**
- A total of **₹1.47 lakh crore** was allocated for **8,075 projects**, with innovative platforms like **SAAR (Smart Cities and Academia towards Action and Research)** promoting research and collaboration.

**SMART CITIES MISSION**

**About**

- **Launched:** 2015
- **Nature:** Centrally Sponsored
- **Nodal Ministry:** Ministry of Housing & Urban Affairs
- **Implemented through:** Special Purpose Vehicles (SPVs) at city level
- **Mission Deadline:** Extended to June 2024
- **Coverage:** Developing 100 selected cities as Smart Cities

**Six Fundamental Principles**

- Citizen at the core
- More from Less
- Cooperative and competitive federalism
- Integration, innovation & sustainability
- Technology as means, not the goal
- Convergence

**SMART SOLUTIONS**

- E-Governance and Citizen Services**
  - Public Information, Grievance Redressal
  - Electronic Service Delivery
  - Citizen Engagement
  - Citizens-City's Eyes and Ears
  - Video Crime Monitoring
- Energy Management**
  - Smart Meters & Management
  - Renewable Sources of Energy
  - Energy Efficient & Green Buildings
- Waste Management**
  - Waste to Energy & fuel
  - Waste to Compost
  - Waste Water Treatment
  - Recycling and Reduction of Waste
- Urban Mobility**
  - Smart Parking
  - Intelligent Traffic Management
  - Integrated Multi-Modal Transport
- Water Management**
  - Smart Meters & Management
  - Leakage Identification, Preventive Maintenance
  - Water Quality Monitoring
- Others**
  - Tele-Medicine & Tele Education
  - Incubation/Trade Facilitation Centers
  - Skill Development Centers

▪ 60% projects have been completed so far ▪

**Challenges**

- **Managing Finance:** Difficulty in mobilising funds, transferring them to SPVs, and using them efficiently
- **Urban Problems:** Like air pollution, road congestion & decline in public transport
- **Policy Issues:** Like hindrances in getting environment clearances
- **Data privacy and security**
- **Lack of Center-State Co-ordination**

**Way Ahead**

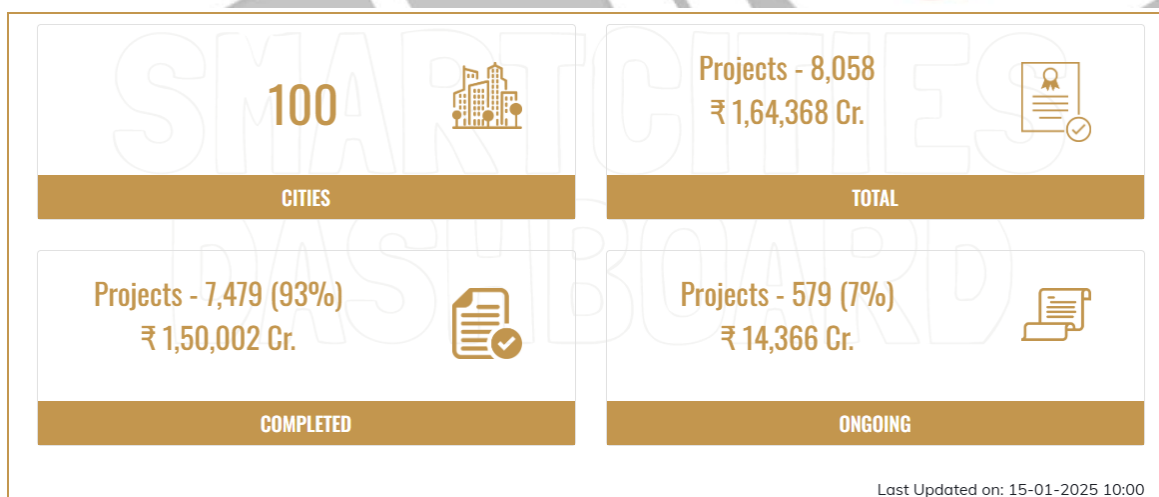
- **Decentralisation:** Planning at Municipal & state level for better implementation
- **Policy Issues:** Like red-tapism, environmental clearances need to be taken care of
- **PPP Model:** For better administrative & technological capabilities
- **Integrated Approach:** For holistic development of transportation, energy, housing
- **Promote Citizen Engagement**

**Drishti IAS**

**What are Key Achievements of the Smart Cities Mission?**

- **Project Completion:** A total of 8,058 projects worth **₹1,64,368 crore** were planned, with **7,479 projects** (93%) successfully completed, which highlights SCM’s efficiency and commitment to urban modernization.

- Introduced innovations like [smart roads](#), [renewable energy projects](#), and **advanced public transportation systems**, transforming urban spaces into **efficient and sustainable environments**.
- **Education Enhancements:** The implementation of **9,433 smart classrooms** in **2,398 government schools**, across 71 cities, led to a **22% rise in enrolment** between 2015-16 and 2023-24, improving student engagement and attendance significantly.
  - Comprehensive teacher training programs enabled effective utilization of **smart technology**, with senior **secondary teachers** displaying the highest comfort levels and **adoption rates**.
- **Digital Libraries:** **41 cities** established digital libraries accommodating **7,809 students**, enabling better access to learning resources.
  - Cities like **Raipur** and **Tumakuru** utilized these libraries effectively for **competitive exam** preparations.
- **Urban Infrastructure Development:** Major improvements included constructing **smart roads**, public spaces, and sustainable [urban transit systems](#) designed to enhance citizen engagement and mobility.
  - Integration of renewable energy initiatives in infrastructure projects reduced energy costs and **improved environmental sustainability**.
- **Health:** A total of **172 e-health centers** and clinics (without dedicated beds) have been established, along with the installation of 152 [health ATMs](#).
- **Impact Studies Under SAAR Initiative:** Conducted under the [Sameeksha Series](#), **50 impact assessments** by academic institutions, including **IIMs and IITs**, evaluated the mission's outcomes on [ease of living](#), **governance**, and **economic growth**.
  - These studies highlighted significant improvements in citizen satisfaction, urban management, and overall **governance efficiency**.
- **Employment and Economic Opportunities:** The mission generated substantial **local employment opportunities** and boosted urban productivity, particularly in smaller cities where such interventions were most needed.
- **Technological Advancements:** Establishing **integrated command centers** enhanced **governance efficiency** by enabling **data-driven** decision-making and optimal resource allocation across urban systems.



## What are the Challenges Related to the Smart Cities Mission?

- **Financial Constraints:** Persistent delays due to **funding gaps and heavy reliance** on government allocations created challenges in timely project completion, especially in smaller urban centers.
  - The budget for the **SCM** in India was reduced from Rs 80 billion in 2023-24 to **Rs 24 billion** in 2024-25.
  - Private investments were challenging to secure for long-term and **resource-intensive projects**, limiting [financial sustainability](#).
- **Land Availability Challenges:** It includes **limited urban space, high land costs, land**



**acquisition issues**, and conflicting land-use policies, hindering efficient planning and development of sustainable urban infrastructure.

- **Coordination and Governance Issues:** Inefficiencies in coordination between central, state, and **local governments** often resulted in delays and hindered project execution.
  - Ambiguities in **roles and responsibilities** among various implementing **agencies exacerbated** governance issues.
- **Technological and Skill Gaps:** The shortage of **skilled personnel** for implementing and maintaining advanced smart systems impeded **project performance and long-term sustainability**.
  - Incompatibility between legacy systems and newly implemented **smart technologies** created significant integration challenges.
- **Inclusivity Concerns:** Marginalized communities were often excluded from accessing the full benefits of **smart city** projects due to inequitable resource allocation.
  - Focus on elite urban areas sometimes overlooked the needs of underdeveloped **peri-urban and rural regions**, increasing inequality.
- **Environmental Challenges:** **Rapid urbanization** under SCM sometimes led to unsustainable practices, including excessive resource consumption and waste generation in densely populated areas.
  - A lack of robust sustainability measures in some projects failed to mitigate their ecological impact effectively.

## Way Forward

- **Enhanced Financial Mechanisms:** Develop innovative financing models like **municipal bonds** and international funding opportunities to ensure **financial sustainability** for all cities.
  - Providing incentives for private investments in smaller cities can improve funding availability for **long-term projects**.
- **Streamlined Governance and Coordination:** Strengthen intergovernmental collaboration to **minimize bureaucratic delays** and establish clear **accountability frameworks** for all stakeholders.
  - Expand platforms like **SAAR** to foster effective integration between academia, policy experts, and government bodies.
- **Capacity Building:** Invest in **comprehensive training** programs to enhance the skills of urban planners, engineers, and administrative personnel involved in project execution.
  - Ensure continuous support for professionals **managing smart technologies** to maintain system **efficiency and reliability**.
- **Promoting Inclusivity:** Tailored interventions are essential to ensure that marginalized communities and underdeveloped areas benefit equally from **smart city projects**.
  - Focus on bridging the urban-rural divide by extending smart infrastructure to peri-urban and rural regions where such interventions are scarce.
- **Focus on Sustainability:** Prioritize **renewable energy** integration, efficient resource management, and **green infrastructure projects** to address environmental concerns effectively.
  - Develop comprehensive **waste management** systems to reduce environmental impact and ensure sustainable urbanization practices.
- **Technological Advancements:** Accelerate investments in emerging technologies like **Artificial Intelligence (AI)**, **Internet of Things (IoT)**, and **blockchain** to revolutionize urban management systems and service delivery.
  - **Strengthen cybersecurity frameworks** to protect sensitive data and maintain public trust in smart systems.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### ***Prelims***

**Q.** Consider the following statements: (2021)

1. 'Right to the City' is an agreed human right and the UN-Habitat monitors the commitments made by each country in this regard.

2. 'Right to the City' gives every occupant of the city the right to reclaim public spaces and public participation in the city.
3. Right to the City' means that the State cannot deny any public service or facility to the unauthorized colonies in the city.

**Which of the statements given above is/are correct?**

- (a) 1 only  
(b) 3 only  
(c) 1 and 2  
(d) 2 and 3

**Ans: (d)**

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**Mains**

**Q.** What are 'Smart Cities'? Examine their relevance for urban development in India. Will it increase rural-urban differences? Give arguments for 'Smart Villages' in the light of PURA and RURBAN Mission. **(2016)**

PDF Reference URL: <https://www.drishtiias.com/printpdf/sansad-tv-special-smart-cities-technology-meets-humanity>

