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FISCAL DECENTRALIZATION 2.0: INTEGRATING MUNICIPAL CARBON MARKETS INTO INDIA'S 16TH FINANCE COMMISSION FRAMEWORK

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The Tipping Point of Indian Urbanization and Fiscal Sustainability

By 2026, India's urban transition is no longer a gradual demographic shift it has become the central axis of national economic stability. Cities are now the primary engines of growth, employment, and productivity. Yet, the financial architecture that supports them remains structurally weak. The 16th Finance Commission (2026–2031), chaired by **Arvind Panagariya**, faces a defining challenge: redesigning fiscal federalism at a moment when urban India is expanding faster than its capacity to finance itself.

Urban Local Bodies (ULBs) stand at the heart of this tension. Although cities contribute a growing share to India's GDP, their financial autonomy remains constrained. The combined budget of India's 4,500+ ULBs amounts to roughly 1.3% of GDP, while their own-source revenue (OSR) generation is only about 0.6%. This gap reflects a deeper structural imbalance between expenditure responsibilities and revenue-raising powers.

The weakness is most evident in property taxation the cornerstone of municipal finance worldwide. In India, property tax collections hover around 0.2% of GDP. In comparison, the OECD average stands at 1.08%, while countries like the United Kingdom (3.11%) and Canada (3.05%) demonstrate the fiscal potential of robust property tax systems. India's "property paradox" is rooted in valuation gaps, outdated rent control regimes, and extensive exemptions. Despite rising real estate values, tax realization remains minimal.

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At the same time, climate change has moved from a distant threat to a measurable economic variable. Heatwaves, floods, and water stress now erode an estimated 4–6% of GDP annually through productivity losses and infrastructure damage. In this context, fiscal reform must evolve into what can be called "Green Federalism" a framework that embeds climate performance within intergovernmental transfers.

With the operationalization of the **Bureau of Energy Efficiency**-led **Carbon Credit Trading Scheme**, alongside the sovereign AI initiative **BharatGen**, India has a rare opportunity: to convert municipal emissions reductions into a structured revenue stream capable of narrowing the infrastructure funding gap.

The Financial Crisis of Urban Local Bodies and the Infrastructure Funding Gap

India's urban infrastructure requirement is immense. Estimates suggest that achieving Nationally Determined Contributions (NDCs) could require US$2.5 trillion by 2030, and over US$10 trillion for net-zero by 2070. At the municipal level, deficits are particularly severe in wastewater management, solid waste processing, and sustainable mobility.

The introduction of GST further tightened municipal finances by subsuming local levies such as octroi and entry tax, often without offering predictable compensation. As a result, many cities became increasingly dependent on state and central transfers.

The Fiscal Health Index developed by **NITI Aayog** underscores that revenue mobilization and debt sustainability are decisive indicators of state performance. Some states like Odisha and Gujarat have maintained fiscal discipline. Others, including Punjab and Kerala, face high debt-to-GSDP ratios. Transitioning states such as Bihar rely heavily often more than 70% on central transfers.

In Bihar, tax devolution and grants-in-aid account for more than 73% of total revenue. The Patna Municipal Corporation's ₹2,200 crore budget (2025–26) allocates significant funds to infrastructure and waste management, yet climate-resilient investments remain difficult without new financing mechanisms.

Under the current system, cities operate reactively. Floods or heatwaves trigger emergency reallocations, reducing capital expenditure and reinforcing vulnerability. A structural shift toward performance-linked fiscal design is therefore essential.

The 16th Finance Commission and Performance-Based Devolution

The 16th Finance Commission maintains vertical devolution at 41% of the divisible pool but significantly revises the horizontal distribution formula.

A major innovation is the introduction of a 10% weight for "Contribution to GDP," replacing the earlier "Tax and Fiscal Effort" parameter. Income Distance remains dominant at 42.5%, preserving the equalizing spirit of federalism. Population weight has increased, while the weight assigned to area and demographic performance has been reduced. The 10% allocation for "Forest and Ecology" continues, recognizing ecological public goods provided by forest-rich states.

However, the ecological criterion primarily reflects endowments rather than active mitigation performance. States with similar climate vulnerabilities often receive different allocations. This suggests the need for a more dynamic "Climate Performance" metric.

Local body grants totaling ₹7.91 lakh crore follow an 80:20 basic-to-performance structure. Basic grants are split between tied (sanitation, water, waste management) and untied components. Performance grants depend on audited accounts and OSR growth. An additional ₹10,000 crore Urbanization Premium incentivizes peri-urban consolidation.

This framework offers a strategic entry point for integrating carbon outcomes into fiscal devolution.

Green Federalism and the Climate Performance Grant

The proposal for "Fiscal Decentralization 2.0" centres on introducing a Climate Performance Grant (CPG) within the 20% performance-linked allocation.

Municipalities reducing per capita greenhouse gas emissions below a national baseline would qualify for matching transfers. For every rupee earned through carbon credit sales, the Union government could provide a performance-linked top-up. This dual incentive market liquidity plus fiscal stability would embed decarbonization into core municipal finance.

Given that states and cities account for more than 60% of general government expenditure far above the global average the Finance Commission's alignment role becomes crucial. State Action Plans on Climate Change must be fiscally incentivized rather than treated as discretionary spending.

The Carbon Credit Trading Scheme and the Indore Model

The **Carbon Credit Trading Scheme** represents India's transition from voluntary project-based mechanisms to a national carbon market. Governed by the **Bureau of Energy Efficiency**, it includes compliance and voluntary offset mechanisms.

Municipal waste management is an approved sector under the voluntary pathway. Bio-CNG plants, landfill gas capture, and waste-to-energy projects can generate Carbon Credit Certificates (CCCs), each representing one tonne of CO_2 equivalent reduced or removed.

Indore provides a working example. Its 550 TPD Bio-CNG plant processes fully segregated waste, producing Bio-CNG and compost while generating carbon credits. In two years, the Indore Municipal Corporation reportedly earned around ₹9 crore through carbon trading under international standards.

Yet, replication faces barriers: high registration costs (around $10,000 under some standards), complex monitoring requirements, institutional confusion among standards, and volatile market pricing. Without structural support, smaller cities remain excluded.

Technology, AI, and Digital MRV

A central challenge in carbon markets is credibility preventing double counting or exaggerated reductions. Manual verification methods are costly and slow.

The **BharatGen** initiative offers a sovereign digital backbone. Its vision-language model, "Patram," can parse municipal records, GST invoices, and energy bills to automate monitoring, reporting, and verification (MRV).

By integrating AI with IoT-based Digital MRV platforms under the National Deep Tech Startup Policy, emissions tracking can become real-time and traceable. Service Level Benchmarks verified through AI would enhance the credibility of performance-linked grants.

Risks: Greenwashing and Capacity Gaps

Carbon markets carry risks of greenwashing if credits lack additionality. Linking fiscal transfers to low-integrity credits would undermine federal trust.

Smaller municipalities face technical capacity deficits. Without aggregation, performance-based grants could unintentionally widen disparities, rewarding cities with pre-existing institutional strength.

Adaptation finance remains particularly weak. Flood control and heat mitigation lack direct revenue streams, making them dependent on constrained public budgets.

The SPV Solution: Regional Carbon Aggregators

To address entry barriers, the proposal envisions Regional Carbon Aggregator Special Purpose Vehicles (SPVs).

These SPVs jointly promoted by state governments and clusters of ULBs would absorb registration costs, aggregate credits, manage MRV, and distribute revenues. Bundling credits from multiple small towns would attract institutional buyers seeking scale and integrity.

The Union Budget's Urban Challenge Fund and 50-year interest-free loans could provide capitalization support, enabling ULBs to build equity stakes in carbon assets.

Roadmap for 2026–2031

Year 1 would focus on defining climate performance metrics and piloting AI-based MRV in select clusters. Years 2–3 would expand sectoral scope to sustainable transport and urban forestry. By Years 4–5, the Climate Performance Grant could become a permanent feature, potentially linking India's carbon market with global frameworks under Article 6 of the Paris Agreement.

Strategic Outlook

Fiscal Decentralization 2.0 represents a structural reimagining of Indian federalism. It shifts from reactive redistribution toward performance-based sustainability. The economic transition is no longer about income growth alone but about decoupling growth from emissions.

The Indore experience demonstrates that waste can be monetized. The BharatGen-enabled SPV framework shows that verified data can be monetized as well. Over time, a city's creditworthiness may increasingly align with its carbon performance.

If the 16th Finance Commission succeeds in aligning fiscal incentives with climate outcomes while strengthening property tax systems and rationalizing subsidies it can lay the groundwork for resilient, growth-oriented urban centres.

Integrating the authority of the Finance Commission, the market architecture of the Carbon Credit Trading Scheme, and the technological backbone of BharatGen is not merely administrative reform. It is foundational to realizing the ambition of a developed India by 2047.

References

- Bureau of Energy Efficiency. (n.d.). *Carbon Credit Trading Scheme (CCTS) framework*. Ministry of Power, Government of India. Retrieved from https://beeindia.gov.in/carbon-market.php
- Government of Bihar, Finance Department. (2026). *Bihar Economic Review 2025–26*. Retrieved from https://state.bihar.gov.in/finance/cache/12/06-Feb-26/SHOW_DOCS/Bihar%20Economic%20Review%20English_11zon.pdf
- Government of India. (2025). *Union Budget 2025–26*. Ministry of Finance. Retrieved from https://www.indiabudget.gov.in/doc/impbud2025-26.pdf
- Institute of Economic Growth. (2026). *The Indian Property Paradox and urban infrastructure financing* (KEC2025PB_9). Retrieved from https://iegindia.org/wp-content/uploads/2026/01/KEC2025PB_9.pdf
- National Deep Tech Startup Policy. (n.d.). *Policy framework for digital monitoring, reporting and verification (dMRV)*. Office of the Principal Scientific Adviser to the Government of India. Retrieved from https://www.psa.gov.in/deep-tech-policy
- National Institute of Urban Affairs. (2022). *Carbon Credits Aggregator Model: The Indore Model compendium*. Retrieved from https://niua.in/saar/compendium/sites/default/files/2022-03/CarbonCreditsAggregatorModel_INDORE.pdf
- NITI Aayog. (2025). *Fiscal Health Index 2025*. Government of India. Retrieved from https://www.niti.gov.in/sites/default/files/2025-01/Fiscal_Health_Index_24012025_Final.pdf
- Observer Research Foundation. (n.d.). *Fiscal federalism for climate action in India: Expectations from the 16th Finance Commission*. Retrieved from https://www.orfonline.org/research/fiscal-federalism-for-climate-action-in-india-expectations-from-the-16th-finance-commission
- PRS Legislative Research. (n.d.). *Summary of the 16th Finance Commission Report*. Retrieved from https://prsindia.org/files/policy/policy_committee_reports/16th_FC_Report_Summary.pdf
- Sixteenth Finance Commission. (n.d.). *Report of the 16th Finance Commission (2026–31)*. Government of India. Retrieved from https://www.indiabudget.gov.in/doc/16fc.pdf

- Sixteenth Finance Commission. (n.d.). *Terms of Reference*. Government of India. Retrieved from https://fincomindia.nic.in/commission-reports-sixteenth
- The Competitiveness Institute. (2025). *Resilience and adaptive capacity: A climate risk lens on fiscal devolution*. Retrieved from https://competitiveness.in/wp-content/uploads/2025/10/Report_1_Resillience_A_Climate_Risk_Lens_Web.pdf
- Transport and Development Policy Institute. (2024). *Carbon credits guidebook: Legal and financial structures for municipal SPVs*. Retrieved from https://itdp.in/wp-content/uploads/2024/10/Carbon-Credits_Guidebook.pdf