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Integrating Land Value Capture into Property Tax Systems in India: A Review of Conceptual Frameworks and Practical Outcomes

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Abstract : Rapid urbanisation and growth in India with increasing population in almost all the cities in India that act as regional hubs or state capitals with puts a lot of pressure in the urban infrastructure. Most of the tier 1 and tier 2 cities faces are developing at an extremely enormous rate. The development mostly is related to infrastructural improvements, revitalisations, redevelopment of core areas, development of new roads, road widening etc. all these developments are directly executed by the urban local bodies like municipal corporations, municipalities etc. The 74th Constitutional Amendment Act (CAA) 1992 provides the framework for strengthening the finances of Urban Local Bodies (ULBs) by assigning them constitutional status and creating specific mechanisms for financial management and attain fiscal autonomy. The implementation, however, is largely dependent on state legislation, which often results in ULBs still being heavily dependent on state and central government transfers. India's municipal revenue is only 1% of GDP, far below to the global benchmark of 3–5%, indicating the need for stronger municipal fiscal systems and improved revenue mobilisation. There are various direct and indirect taxes that are levied by ULBs, Property tax is the most important own-source revenue. As per studies most of the states follow an out-dated method of Annual rental value (ARV) to calculate property tax which does not integrate the value-added gains of infrastructural development to the property tax. To integrate value added gains to the property tax calculation system, Value Capture Model provides an equitable and modern solution. The study aims to provide an insight on how the integration of Land Value Capture (LVC) tool into property tax calculation system can help ULBS to enhance the finances, increases efficiency and progress towards sustainable fiscal autonomy and governance.

IndexTerms **- Land Value Capture, Property Tax, Urban Local Bodies, Valuation Systems, Fiscal Autonomy, Spatial Indicators, Incremental Value Assessment**

I. INTRODUCTION

Rapid urbanisation from the past 2 decades is seen in India due to which there is demographic growth, economic expansion and spatial transformation are imposing huge demand on urban infrastructure systems. Major tier-1, tier-2 cities in India are evolving as regional economic hubs showing spatial expansion and need upgraded mobility networks with revitalisation and redevelopment of urban cores. The type of transformation demand of these cities requires a sustainable system of public investment and strong fiscal capacity of urban local bodies, as they are responsible for planning, financing and managing core municipal services.

However, the financial system within which most of the ULBs work is structurally outdated and weak. Despite the 74th Constitutional Amendment Act (1992) formally consider ULBs as the third tier of government that ensures reliable financial forecasting but these institutions do not generate enough income from their own local resources (like taxes and fees) to adequately fund their operations and services. A major share of municipal finance is still financed through state and central transfers, which leaves cities vulnerable to intergovernmental fiscal dependence and major funding. This constant revenue stress is a major barrier to efficient urban service delivery, timely infrastructure expansion, and long-term financial sustainability.

The existing type of own source revenues, Property tax is the most important source of generating revenue. It is the most stable type own source revenue that is collected by ULBs and also has a strong relationship to the local public services. Yet in practice, property taxation in most of the cities in India suffers from weaknesses like it rely on outdated valuation methodologies (such as Annual Rental Value), which is not revised frequently, and has a very weak link to the value-added gains that a property owner enjoys due to infrastructure developments. There is a huge gap between the actual valuation of the property and the valuation done in the taxation system. These valuation gaps suppress municipal revenue potential and create inequities between taxpayers who benefit from public infrastructure investments and those who do not.

The Land Value Capture (LVC) model, on the other hand, tries to get back some of the value gains that property owners get from public investment, changes in the law, or the building of urban infrastructure. Tools such as betterment levies, development charges, impact fees, and tax-increment financing create a direct connection between public actions and increases in private land value. This transparency and equity make land value capture (LVC) a financing method that is widely utilized

around the world. Property tax accounts for the existing or "base" value of land, whereas LVC captures the additional or "incremental" value generated by public interventions. The integration of the two can assist ULBs in more realistically updating valuations, reflecting value increases driven by infrastructure, and enhancing fiscal capacity.

This review article reviews worldwide experiences, Indian policy trends, and valuation methodology to illustrate how merging LVC principles with property tax frameworks can lead to more efficient, egalitarian, and financially sustainable municipal administrations.

II. METHODOLOGY

This review is based on a thorough analysis of academic, policy, and institutional literature published between 2000 and 2024. Academic sources were found through established databases like as Scopus, Web of Science, and Google Scholar, while relevant policy documents were acquired from institutions such UN-Habitat, the World Bank, NIUA, MoHUA, and NITI Aayog.

Additional state-level valuation norms and municipal financial reports were also analyzed to identify practical issues inside Indian urban systems. Keywords such as *land value capture*, *property tax reform*, *mass appraisal*, *guidance values*, *fiscal autonomy of ULBs*, *automated valuation models*, and *incremental value assessment* were used to filter relevant studies. The review adopts a thematic synthesis method, examining conceptual frameworks, valuation norms, LVC tools, and spatial indicators used globally. A comparison study was then conducted across case studies from several Indian towns to discover patterns, gaps, and lessons pertinent to the Indian setting.

III. CONCEPT OF LAND VALUE CAPTURE (LVC)

Land Value Capture is founded on the idea that public investments in infrastructure improve the value of adjoining private land and structures. Government employ LVC techniques to capture a piece of this value gain, and then reinvest it in infrastructure, establishing a virtuous cycle of value generation → capture → reinvestment. LVC is different from user charges, because the value growth is not owing to the landowner's own investment but due to public activity.

Government spends → Land values rise → A portion of that rise is captured back to fund more infrastructure.

There are many types of LVC tools that can be used by ULBs for a sustainable fiscal autonomy some of them are listed

Table 1: Key idea on where and to which scale of project can use which type of tool.

LVC Tool	Frequency	Area vs. Project	Key Idea
Land Value Tax	Annual	Area-based	Tax on increased land value; discourages speculation
Fees for Change of Land Use	One-time	Area & Project	Payment when agricultural land converts to urban
Betterment Levy	One-time	Area & Project	Charge on value gain due to public infrastructure
Development Charges (Impact Fees)	One-time	Area based	New developments pay share of cost of added infrastructure
Transfer of Development Rights (TDR)	Transaction-based	Area & Project	Trading of additional development rights
Premium for additional FSI/FAR	One-time	Area & Project	Sale of extra building rights beyond baseline
Vacant Land Tax	Recurring	Area-based	Charge on private idle land to promote development
Tax Increment Financing (TIF)	Recurring for fixed period	Area-based	Future incremental property taxes ring-fenced to fund projects
Land Acquisition & Development	One-time	Area & Project	Developing land and selling part to finance infra
Land Pooling System (LPS)	One-time	Area & Project	Owners pool land → serviced plots returned → value recovered

Source: Ministry of Urban Development (MoUD), Government of India. (n.d.). Value Capture Finance (VCF) Policy Framework: Introduction, methods, guidance note and case studies.

IV. PROPERTY TAXATION INDIA

Property tax assessments in India are based on three general methods:

- Annual Rental Value (ARV)
- Unit Area Value (UAV)
- Capital Value Method (CV)

However, all three methods suffer from infrequent updates, inconsistent spatial valuation zones, and a weak linkage to infrastructure-induced value appreciation.

Table 2: Comparison of property tax assessment methods

criteria	ARV	UAV	CV
Equitability	Low	Moderate	High
Buoyancy	Low To Moderate	Moderate To High	High
Cost of Implementation	High	Low	Low To High
Ease of Compliance	High	High	Moderate To High
Degree of Discretion	High	Low	Low

Source: Ministry of Housing and Urban Affairs (MoHUA) (2020). Property tax reforms toolkit. Government of India.

Theoretical Link Between Property Tax and LVC

Both land value capture (LVC) and property taxation rely fundamentally on accurate market valuation, transparent assessment mechanisms, and spatial indicators that reflect variations in land value across a city. Because both systems are value-based, integrating them allows for a more responsive and equitable fiscal framework. LVC mechanisms can directly strengthen property tax systems by embedding betterment levies into the broader property valuation process, ensuring that properties benefiting from public investments contribute proportionately to municipal revenues. Similarly, circle rates can be indexed to infrastructure impacts so that guidance values automatically reflect improvements such as new transport corridors, enhanced road networks, or upgraded public amenities. In addition, FSI or development premiums can be calibrated according to property value tiers, ensuring that higher-value zones contribute more in line with the planning gains they receive. Collectively, these mechanisms enable ULBs to capture both the base value and the incremental value of land, thereby improving revenue buoyancy, valuation accuracy, and fiscal autonomy.

V. Literature Review – Research Paper Synthesis

5.1 Concepts & Theoretical Foundations

5.1.1 Property Valuation Systems

Property valuation systems form the methodological foundation for determining the taxable value of land and buildings in urban areas, and they directly influence the efficiency, equity, and revenue buoyancy of municipal finance (Bandyopadhyay, 2013). Accurate valuation ensures that every property contributes a fair share of municipal revenue, while outdated or opaque valuation frameworks lead to revenue leakages and fiscal imbalance (NIUA, 2021). Global literature establishes that valuation systems evolve around three standard approaches - capital value, annual rental value, and unit area value - each associated with specific administrative requirements and revenue implications (Bird & Slack, 2007).

In India, valuation systems vary significantly across cities, often reflecting state-level legislation and historical practices rather than market realities (Mathur, 2019). For instance, Mumbai adopted the capital value system in 2010, shifting away from the rental value model due to its inability to reflect contemporary market prices (BMC, 2022). The capital value system calculates tax base by multiplying built-up area with market-linked ready-reckoner rates, ensuring more dynamic and transparent valuation (Siddiqui, 2019). This transition improved revenue elasticity and allowed properties in high-value zones to be taxed proportionally to their actual market worth (BMC, 2022).

Conversely, Bengaluru uses the Unit Area Value (UAV) system, which assigns a per-square-foot tax rate to predefined zones categorised on the basis of land value, occupancy type, and building use (BBMP, 2023). Research shows that UAV models improve administrative efficiency because they avoid individual property valuation and instead apply zone-based standardised rates (Roy, 2021). UAV also aligns with the guidance value framework used by the state, making it easier to update rates periodically when market conditions change (BBMP, 2023).

The Raipur Municipal Corporation continues to rely on a hybrid area-based valuation system grounded in the outdated 2005 property tax rules, resulting in tax base stagnation and weak linkage with actual market values (RMC, 2023). Studies show that Raipur's guidance values and municipal assessment values diverge significantly, leading to under-assessment of high-value commercial corridors and over-assessment of low-value peripheral areas (Chhattisgarh Housing Board, 2022). Modern valuation frameworks recommend GIS-enabled parcel mapping, land use categorization, automated mass appraisal systems (AMAS), and integration of market transaction data to create more accurate and equitable property valuation mechanisms (World Bank, 2020). The absence of such systems in Raipur contributes directly to municipal revenue inefficiency, affecting its ability to fund infrastructure and maintain service standards (Peterson, 2009).

International literature emphasizes that dynamic valuation systems must incorporate spatial variables—such as distance to CBD, road hierarchy, land use mix, availability of public transport, and neighborhood amenities—as these factors significantly influence land market behavior (UN-Habitat, 2020). Advanced property valuation approaches, including hedonic pricing models, machine-learning-based mass appraisal, and GIS-statistical valuation, have proven effective in improving valuation accuracy in rapidly growing urban economies (Suzuki et al., 2015). Many Indian cities, including Mumbai and Bengaluru, have gradually integrated GIS and digital assessment tools into their valuation processes, enhancing auditability, transparency, and taxpayer confidence (BMC, 2022; BBMP, 2023).

5.1.2 Land Value Capture Mechanisms

Land Value Capture (LVC) refers to a set of fiscal, regulatory, and planning instruments that enable governments to recover a portion of the incremental land value created by public investment, infrastructure provision, regulatory changes, and urbanization pressures (World Bank Land Value Capture Framework, 2020). The core principle of LVC is that urban land values rise primarily

because of collective public action—such as road construction, transit development, zoning changes, and service improvements—rather than private landowner effort, making it economically and ethically justifiable for governments to reclaim part of that value for public benefit (Lincoln Institute of Land Policy, 2016). LVC mechanisms are increasingly integrated with property taxation systems because property tax represents the most stable, spatially grounded, and administratively feasible fiscal tool for capturing value increments across different urban zones (Slack & Bird, 2020).

5.1.3 Conceptual Foundation of LVC in Urban Finance

Land value increments occur when governments extend public goods—roads, water supply, drainage, transit systems, public spaces—and when planning regulations expand development rights, causing private property values to rise without equivalent private investment (World Bank, 2020). Because these increments represent unearned gains (economic rents), LVC instruments seek to internalize part of this benefit into public revenues, creating a fairer and more sustainable urban finance system (Smolka, 2013).

Property taxation forms the backbone of LVC since it is directly linked to land and building value, spatially mapped at parcel level, and capable of reflecting changing market conditions**,** especially when valuation rolls are periodically revised (Lincoln Institute,2016).

Cities with weak valuation systems—such as Raipur's outdated guidance-value framework—often fail to mobilize value increments generated by infrastructure investments**,** leaving significant fiscal potential untapped (RMC Property Tax Guideline, 2005).

Hence, integrating LVC into property tax calculation requires accurate valuation, GIS-enabled spatial mapping, and differentiated tax zones, allowing the municipality to link tax burden to actual value benefit accrued (Value Capture Finance Toolkit, 2019).

5.1.4 Types of Land Value Capture Instruments Relevant to Property Taxation

Betterment Levy / Special Assessment

Betterment levies charge landowners based on the increase in property value resulting from specific public infrastructure projects**,** such as road widening, transit corridors, or market redevelopment (World Bank, 2020). The levy is typically calculated using a formula that applies a percentage rate to the difference between pre-project and post-project property values**,** making valuation accuracy essential (AMRUT Toolkit, 2019). In Indian cities, Special Improvement Charges under municipal acts function as betterment levies, though few cities implement them effectively due to poor valuation rolls (Urban Development Report, 2018). A well-functioning property tax system enables betterment levies by providing verified base values, spatial zoning, and updated market-linked assessments, preventing undervaluation of project-affected parcels (Municipal Finance Review, 2020).

Incremental Impact Fee

Impact fees are charged to property developers to offset the cost of providing additional infrastructure required due to new development**,** ensuring that public services are not subsidized by older neighbourhoods (World Bank, 2020). Impact fees depend heavily on accurate estimation of land values, development intensity, and infrastructure load, making property valuation essential for determining fee rates (AMRUT Toolkit, 2019)

Cities with outdated valuation like Raipur are unable to impose rational impact fees, causing infrastructure burden to fall on municipal budgets**,** reducing fiscal sustainability (RMC Revenue Note, 2021).

Development Charges and Premium FSI

Premium Floor Space Index (FSI) charges represent a form of LVC where developers pay for additional development rights**,** thereby monetizing land value created by regulatory permissions (Mumbai Development Plan, 2014). Mumbai extensively uses premium FSI and land-use concessions under its Capital Value System (CVS), generating substantial revenue for infrastructure**,** exemplifying how valuation-based systems can support LVC (MCGM CVS Report, 2015). FSI premiums directly depend on base land values from property valuation**,** which act as the benchmark for calculating premium rates (MCGM Development Control Regulations, 2034).

Land Value Taxation (LVT)

LVT taxes land separately from buildings, based on the premise that land value primarily reflects location benefits rather than owner effort (Lincoln Institute, 2016).

Because LVT captures the location value created by public investment—such as roads, utilities, transit—many countries use it as a strong LVC instrument**,** particularly for high-value commercial land (World Bank, 2020). Indian cities, including Raipur, lack pure LVT but can integrate LVT principles by increasing the weight of land value in property tax formulas**,** especially in high-value, high-density commercial zones (RMC Property Tax Guideline, 2005).

Tax Increment Financing (TIF)

TIF captures future increases in property tax revenue resulting from infrastructure improvements**,** using the incremental rise to finance project costs upfront (World Bank, 2020). TIF relies on accurate baseline valuation and periodic reassessment of taxable value**,** making strong valuation systems essential (AMRUT Toolkit, 2019). Cities like Mumbai could implement TIF in redevelopment corridors due to their capital-value-based property tax system, but Raipur lacks the valuation accuracy required (MCGM CVS Manual, 2010).

Developer Exactions

Exactions require developers to contribute land, infrastructure, or funds as a condition for development approval, enabling municipalities to capture part of the value uplift (World Bank, 2020). Exactions depend on clear zoning maps, development rights, and assessed land values**,** linking them closely with property valuation frameworks (AMRUT Toolkit, 2019).

5.1.5 Integration of LVC with Property Tax Calculation

The integration of LVC into property taxation depends on the ability of valuation systems to reflect spatial differences in market value, ensuring that high-value commercial districts contribute proportionately higher taxes (Lincoln Institute, 2016). Cities like Bengaluru (BBMP) use a Unit Area Value system that classifies zones A–F based on market value, enabling a form of continuous LVC through differential property taxation (BBMP SAS Manual, 2016). Mumbai's Capital Value System (CVS) achieves even stronger LVC by tying tax calculations directly to ready-reckoner land values**,** capturing market increases automatically (MCGM

CVS Report, 2015. Strengthening GIS mapping, valuation, and zone-based classification would enable to transform property tax into a hybrid LVC system**,** improving fiscal resilience (Urban Finance Report, 2021).

5.1.6 Global Evidence Linking Property Tax and LVC

International studies show that cities with market-linked property valuation systems achieve higher revenue through LVC instruments, because tax liability automatically adjusts with rising values (World Bank, 2020). Latin American cities such as Bogotá, São Paulo, and Medellín successfully use betterment levies and development charges due to robust cadastre and valuation systems, demonstrating the importance of spatial accuracy (Smolka, 2013). East Asian cities like Hong Kong and Singapore integrate land lease premiums with valuation-based property taxation**,** enabling state capture of almost all publicly generated land value (Lincoln Institute, 2016). These examples highlight that effective LVC requires updated valuation rolls, GIS parcels, and transparent tax formulas**,** aligning taxation with actual market behavior (AMRUT Toolkit, 2019).

VI Municipal Finance & Urban Economics

Municipal finance constitutes the backbone of urban governance, as cities require stable, predictable, and buoyant revenue sources to deliver infrastructure, regulate land use, and ensure equitable service provisioning (Peterson, 2009). Every city's capacity to function effectively is fundamentally shaped by the efficiency of its fiscal system, particularly its ability to mobilise internal revenue through instruments such as property taxation, user charges, development fees, and land-based financing (Bandyopadhyay, 2013). In developing economies such as India, municipal finances remain structurally weak because Urban Local Bodies (ULBs) rely heavily on higher-level transfers rather than robust local revenue mobilisation (Mathur, 2019). This dependency reduces fiscal autonomy and constrains long-term planning, making the strengthening of municipal finances a central component of urban economic reform (Roy, 2021).

Urban economics provides the analytical foundation to understand how land values, market behaviour, agglomeration forces, and spatial development patterns influence the fiscal health of cities (O'Sullivan, 2012). Every land parcel within a city generates economic value based on accessibility, infrastructure availability, urban amenities, and regulatory regimes, making urban land a key fiscal asset for municipalities (World Bank, 2020). When municipalities fail to capture a share of this land-generated value through taxation or value capture mechanisms, significant public value is lost, especially in fast-growing cities experiencing rising land prices (UN-Habitat, 2020). The mismatch between the increasing economic productivity of urban land and stagnant municipal revenue is a core urban economic problem documented across Indian cities (Bandyopadhyay, 2013).

Municipal revenues in India are dominated by property taxes, accounting for 35–50% of own-source income in most ULBs, yet property tax remains under-assessed, weakly enforced, and poorly updated (NIUA, 2021). Cities such as Raipur Municipal Corporation continue to rely on valuation systems that have not been revised for long periods, leading to large discrepancies between market value and taxation value (RMC, 2023). Empirical research shows that outdated valuation frameworks distort revenue potential and create inequities where high-value properties remain under-taxed, while low-income households bear a disproportionately higher burden relative to their actual property value (Bandyopadhyay, 2013). A well-functioning municipal finance system therefore depends on dynamic valuation models, GIS-enabled assessment, and structured mechanisms for linking land value increments to municipal revenue (World Bank, 2020).

Urban economic theory emphasises that infrastructure investments create significant positive externalities that increase surrounding land values, forming the rationale for land-based instruments such as land value capture (LVC) (Peterson, 2009). Without LVC, municipalities subsidise private landowners by improving access, mobility, and amenities without recovering proportional value (Suzuki et al., 2015). The integration of LVC into municipal finance systems strengthens the fiscal base by ensuring that publicly created land value is reinvested back into urban infrastructure (ARUT Toolkit, 2021). Advanced cities such as Mumbai implement multiple land-based financing tools—premium FSI, betterment charges, impact fees, and development rights—which significantly enhance revenue stability (BMC, 2022). Similarly, Bengaluru generates substantial municipal receipts through guidance value-based property assessment and development charges (BBMP, 2023). These examples highlight the critical linkage between municipal finance, urban land economics, and sustainable service delivery.

VII Critical Analysis of Integrating LVC into Property Tax

These are the variables repeatedly used in papers and case studies to determine increase in land value due to public investments:

Variable Group	Specific Variables Identified
Land / Property Market Variables	Land value before–after project, property sale price, rental price, rateable value, capital value appreciation, FAR value, stamp duty value, vacancy rates
Location / Accessibility Variables	Distance to metro/rail/bus corridor, proximity to transport nodes, travel time reduction, connectivity index, access to employment centres
Development Variables	Type of land use, change of land use (agri → non-agri), zoning changes, development density, permitted FSI/FAR, purchased additional FSI/CEPACs
Infrastructure Variables	Capital cost of project, operations & maintenance cost, infrastructure lifecycle, capacity/ excess capacity, service coverage area
Demand & Growth Variables	Population growth, migration inflows, housing demand & supply, commercial floor space absorption, employment growth
Revenue & Fiscal	Incremental property tax, business rate supplement (BRS), betterment charge rate, impact fee rate,

Variables	surcharge on stamp duty, vacant land tax rate, TDR monetization value, tax increment projections (TIF)
Socio-economic Variables	Income levels of local population, level of economic activity, unemployment rate, business growth rate
Spatial Variables	Area of influence boundary, corridor-based development extent, rezoning boundaries for redevelopment, parcel size and shape
Project Implementation Variables	Phase of project (planning, construction, completion), time series of real estate response, release schedule of additional FAR rights (e.g., CEPAC auctions)

7.1Valuation Norm Reforms Needed for Integration

Strengthening valuation norms requires the adoption of automated valuation models (AVMs) to generate consistent, market-aligned estimates and reduce subjectivity in assessments. Regular annual revision of guidance values must be institutionalized to ensure that tax bases reflect current market conditions. Additionally, valuation systems should explicitly capture infrastructure-induced value creation, allowing ULBs to integrate betterment and accessibility premiums into the tax framework. A robust mechanism for linking circle rates with actual market transactions—using registration data, geospatial analytics, and periodic audits—is essential for achieving transparent and equitable valuation.

7.1.1 Fiscal Implications for ULBs

Reformed valuation norms significantly enhance revenue buoyancy, enabling ULBs to respond to expanding service delivery obligations. With a more accurate and dynamic tax base, local governments can reduce dependence on state transfers, strengthening fiscal autonomy. A stable, predictable valuation framework also creates a reliable revenue stream, improving the ability of ULBs to leverage borrowings, finance long-term infrastructure, and implement capital investment plans with greater certainty.

7.1.2 Institutional and Governance Challenges

Effective integration of strengthened valuation norms faces key institutional hurdles. ULBs require explicit legislative authority to adopt advanced valuation systems and enforce periodic updates. Persistent political resistance, especially around revising circle rates and reducing exemptions, often constrains reform implementation. Many ULBs also lack technical capacity, including GIS expertise, valuation specialists, and data analysts. Finally, the reforms demand seamless inter-departmental data sharing across registration, planning, revenue, and GIS departments an area where governance fragmentation continues to impede efficiency.

7.1.3 Gaps Identified in Existing Literature

The existing literature, while robust in analysing the components of urban finance and valuation, reveals several key areas where integrated research and standardized frameworks are lacking. A significant gap is the fragmented analysis where property tax instruments and Land Value Capture (LVC) mechanisms are primarily studied in isolation (Value Capture Financing: A Proposition..., 2024; The Potential of Land Value Capture, 2018; Value Capture Finance (VCF) Policy Framework..., 2017). Studies confirm the critical failures of traditional revenue streams, citing a poor property tax system and the inadequate traditional revenues available to Urban Local Bodies (ULBs) (The Potential of Land Value Capture, 2018; Value Capture Finance (VCF) Policy Framework..., 2017), alongside the immense potential of LVC tools like Value Capture Finance (VCF) to boost municipal revenue and capture land-value gains (Value Capture Financing: A Proposition..., 2024; Value Capture Finance (VCF) Policy Framework..., 2017). However, a unified model linking these two is often missing, noting the difficulty local bodies have in capturing value (Value Capture Financing: A Proposition..., 2024) and the need for updated cadastre and governance to translate land-value increases into tax revenue (The Potential of Land Value Capture, 2018).

This gap is compounded by limited empirical work on integrated models in the Indian context, despite specific case studies of LVC propositions in Bangalore (Value Capture Financing: A Proposition..., 2024) and detailed analyses of fiscal transfers and property tax share among ULBs (Fiscal Federalism, Inter-Governmental Transfers..., 2025). These ULBs often lack the necessary autonomy and capacity (Fiscal Federalism, Inter-Governmental Transfers..., 2025) to implement sophisticated integrated systems, constraining their ability to act despite the recognition that stronger fiscal powers are needed (Fiscal Federalism, Inter-Governmental Transfers..., 2025).

Pertaining to valuation methodology, while the sources demonstrate extensive use of Hedonic Pricing Models (HPM) integrated with GIS for improving spatial accuracy and assessing locational value (The Research Development of HPM-based Real Estate Appraisal, 2022; Hedonic Pricing Model for Real..., 2020; A Novel Hedonic Price Modelling Approach..., 2019; Evaluating the Contribution of Infrastructure Effects..., 2017), there is an insufficient discussion on GIS-enabled incremental value assessment specifically linked to tax policy. The techniques for spatial land value mapping and demonstrating that infrastructure upgrades significantly boost property values (e.g., paving boosted land values by 54% (The Impact of Upgrading Municipal Infrastructure..., 2020)) are available. Similarly, road upgrades are shown to increase nearby property values, strengthening the tax base potential (Impacts of Upgrading Roads..., 2014). Yet, this spatially based valuation research has not translated into a clear and standardized framework for linking infrastructure investments to property tax revision. Although VCF frameworks involve concepts like project influence zoning (Value Capture Finance (VCF) Policy Framework..., 2017) and confirm that value capture tools can convert road-induced value gains into municipal revenue (Financing Transportation Infrastructure..., 2021), the lack of a generalized, legal, and transparent system prevents the routine translation of infrastructure-driven value uplift—which can be substantial, such as upzoning driving value increases (Upzoning and Value Capture..., 2020)—into updated property tax revenues across municipal jurisdictions.

VIII. PROPOSED INTEGRATED FRAMEWORK

The proposed integrated framework is anchored in a market-based valuation system that aligns property assessment with real transaction trends, ensuring a transparent and responsive tax base. This system is strengthened by GIS-enabled spatial indicators, which incorporate variables such as accessibility, infrastructure quality, land use intensity, and proximity to growth nodes to capture spatial heterogeneity in land values. To support dynamic valuation, the framework deploys automated incremental value modelling, allowing ULBs to track year-on-year changes driven by infrastructure investments, zoning shifts, or urban expansion. A critical component of integration is the harmonization of circle rates with the cadastral system, ensuring consistency between legal boundaries, registered values, and market signals. Together, these components feed into a fiscal forecasting model that enables ULBs to estimate medium- and long-term revenue flows, evaluate the fiscal impact of reforms, and plan infrastructure financing with greater precision.

Implementation Roadmap

The implementation roadmap follows a phased and institutionally realistic approach.

Phase 1 focuses on valuation database creation through digitization of property records, consolidation of cadastral maps, integration of registration data, and development of a unified geospatial valuation repository.

Phase 2 introduces spatial modelling and mass appraisal, using GIS-based land value layers, hedonic pricing models, and automated valuation tools to generate standardized, market-linked assessments across all property classes.

Phase 3 emphasizes integrating land value capture (LVC) tools into the property tax system, including betterment levies, FSI premiums, and impact-based adjustments that translate infrastructure-induced value gains into revenue.

Phase 4 addresses legislative and institutional reforms, covering statutory amendments for mandatory annual valuation revisions, establishment of valuation authorities, capacity building in GIS and modelling, and structured inter-departmental data governance mechanisms. Together, these phases create a coherent pathway toward a modern, transparent, and fiscally robust urban valuation ecosystem.

Conclusion

The review highlights that India's current property tax system is dominated by outdated valuation methods and weak spatial linkages which fails to capture the substantial land value gains generated by public infrastructure investments. Integrating Land Value Capture (LVC) principles into property taxation offers a viable pathway to strengthen the fiscal autonomy of Urban Local Bodies. Reviewed evidence shows that LVC instruments, when supported by updated valuation systems, GIS-based spatial indicators, and transparent assessment frameworks, significantly enhance municipal revenue buoyancy. For India, this integration can reduce dependence on state transfers, improve equity in taxation, and ensure that beneficiaries of public investments contribute proportionately to urban development. Overall, aligning property tax reforms with LVC-based incremental value assessment can create a more efficient, predictable, and sustainable municipal finance system capable of supporting the country's rapid urban transformation.

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