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ADEQUATE HOUSING FOR ALL



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FROM THE EDITOR-IN-CHIEF

Shelter with Dignity: How India Is Redefining Adequate Housing

Shelter is one of the most fundamental needs, yet adequate housing remains beyond the reach of billions worldwide. The UN-Habitat World Cities Report 2026 highlights the magnitude of this challenge, with an estimated 3.4 billion people globally lacking access to adequate housing, more than one billion living in informal settlements, and around 100 million experiencing homelessness. In India, the challenge is particularly significant as rapid urbanisation, rising land and housing costs, and growing pressure on urban infrastructure continue to widen the gap between housing supply and housing need.

The concept of adequate housing extends far beyond the provision of a physical dwelling. The UN Committee on Economic, Social and Cultural Rights identifies seven essential dimensions of adequate housing: security of tenure, availability of services and infrastructure, affordability, habitability, accessibility, suitable location, and cultural adequacy.

India's urban housing challenge must therefore be viewed within the larger context of rapid urban transformation. With more than one-third of the population now living in urban areas, cities are experiencing increasing demand for affordable and well-located housing. While Census 2011 recorded 6.54 crore people living in slums and 17.73 lakh houseless persons, subsequent estimates indicate that the scale of housing vulnerability has increased considerably.

Over the past decade, the Government of India has responded through a range of programmes and policy interventions, most notably the Pradhan Mantri Awas Yojana (PMAY). PMAY has significantly expanded the scale of housing assistance across urban and rural India. PMAY-U 2.0, launched in 2024, further strengthens this commitment by seeking to support one crore urban families over five years and by placing greater emphasis on affordable, durable and service-enabled housing. Its approach also recognises the importance of convergence with infrastructure and other urban development programmes, thereby moving towards a more integrated understanding of housing.

Technology and digital governance are further transforming housing delivery. Innovations such as 3D-printed construction, geo-tagging, digital beneficiary identification, Direct Benefit Transfer (DBT), and the Awaas+ digital platform demonstrate how technology can improve transparency, monitoring and the speed of housing delivery. However, technological solutions must remain closely aligned with local climatic conditions, affordability, social needs and the long-term habitability of housing.

The challenge also calls for reforms in urban planning and housing markets. Measures such as incorporating Affordable Housing Zones within master plans, enabling appropriate development potential and FAR, ensuring provisions for EWS and LIG housing, strengthening rental housing frameworks, and improving housing data can help align land-use planning with housing needs.

Several state-level initiatives offer valuable lessons. Odisha's JAGA Mission demonstrates the importance of tenure security and community-led settlement upgrading. Kerala's LIFE Mission illustrates an integrated approach to addressing housing needs among vulnerable households. Such initiatives underline the fact that adequate housing is not achieved through construction alone; it requires secure tenure, access to basic services, connectivity, social

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infrastructure and opportunities for livelihoods. The way forward, therefore, lies in shifting the policy discourse from "housing for all" as a numerical target to "adequate housing for all" as a multidimensional objective.

The October issue of Shelter focuses on the World Habitat Day theme of, "Adequate Housing for All," and is a compilation of papers arranged in three sections – Theme Paper, Policy Review and Case Study.

The journal features a range of articles arranged into three sections. Rinky Halder et al's theme paper translates the World Cities Report's seven dimensions of housing adequacy into strategic priorities for India, examining PMAY-Urban 2.0, in-situ upgradation, green construction, and proposing five transformative measures towards adequate housing for all. The Theme Paper by Surbhi Zutshi examines the limitations of fragmented approaches to urban housing and argues for an integrated planning framework that treats housing as a component of the wider urban socio-economic system, while the paper by Anshu Kalshyan synthesises key Indian government housing policy frameworks and also draws lessons from international practices in Vienna, Singapore, and Hong Kong to advance affordable housing and integrated urban development.

In the policy review section, the paper by Salil Mohan examines the urban transformation of housing in Delhi through a strategic analysis of the Transit-Oriented Development (TOD) Policy 2026, focusing on its implications for housing, urban form, accessibility, and sustainable development. Dr. Shalini Rohilla Panigrahi's paper on policy review examines the shift towards formal rental housing as a key instrument for addressing urban housing affordability. Yatin Pandya examines the choice between low-rise and high-rise housing, evaluating the advantages and limitations of each typology within the broader Indian cultural, climatic, economic, and historical context.

The case study section features a paper by Arti Jaiswal that examines the resulting demand-supply dynamics of short-term rental (STR) and long-term rental (LTR) housing in Ujjain, a major pilgrimage city in Madhya Pradesh, India, while the paper by Ramakrishna Nallathiga explores township development to deliver large scale, integrated and sustainable housing across India as a potential response to the growing urban housing shortage and infrastructure pressures.

We thank all the contributors for an overwhelming response to this issue. We hope the readers enjoy the issue as much as we did putting it together. We value your feedback and would appreciate your comments.

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62nd ITEC Training Course on "LEADERSHIP SKILLS FOR WOMEN" 17th – 30th June 2026

HUDCO's Human Settlement Management Institute (HSMI) conducted the 62nd Training Course on "Leadership Skills for Women" from 17th to 30th June 2026. The MEA-sponsored Training course under the ITEC Programme was inaugurated by Shri Sanjay Kulshrestha, Chairman & Managing Director, HUDCO, in the presence of Shri M. Nagaraj, Director (Corporate Planning), HUDCO; Mr. Oday Mohammed, Chargé d'Affaires, Iraq and senior officers of HUDCO and HUDCO's HSMI.

The course focused on enhancing leadership skills, understanding gender disparities and equipping women professionals from the Republic of Iraq with practical tools to overcome challenges and take on decision-making roles in their organisations. The sessions provided a holistic understanding of the challenges faced by women in the workplace, while strengthening competencies in emotional intelligence, communication, negotiation, personal branding, stress management, and work–life



62nd ITEC batch of overseas professionals with Shri Sanjay Kulshrestha, CMD, HUDCO, Shri M. Nagaraj, DCP, HUDCO and Senior Officers of HUDCO and HUDCO's HSMI

balance. Participants also gained insights into global and national policy frameworks for women's empowerment and explored the potential of Artificial Intelligence to improve workplace productivity and efficiency. Overall, the programme sought to build confidence, resilience, professional visibility, and leadership readiness among women professionals.

Through these ITEC courses, HUDCO continues to promote leadership development, skill enhancement and equitable representation of women in decision making roles.

REFLECTIONS ON THE WORLD CITIES REPORT 2026 AND STRATEGIC IMPERATIVES FOR INDIA

NILESH RAJADHYAKSHA AND RINKY HALDAR

Adequate housing is the foundational cornerstone of sustainable urbanization, human dignity, and social justice. This paper synthesizes the paradigm-shifting evidence and actionable frameworks established in UN-Habitat's flagship World Cities Report 2026: The Global Housing Crisis - Pathways to Action, launched officially at the 13th World Urban Forum (WUF13) in Baku, Azerbaijan. Authored collaboratively by over 80 global experts, the World Cities Report 2026 represents a landmark UN-Habitat report, providing an indispensable diagnosis of the global habitat crisis where 3.4 billion people endure housing deprivation. Across sections 1 to 4, this paper reflects on the Report's core global pillars - The 7-dimensional adequacy standard, the lessons from fifty years of policy evolution (demonstrating the systematic failure of slum clearance and hyper-financialization), the structural mechanics of global unaffordability, and the imperative of leveraging informality and climate resilience. In section 5, the paper translates these global insights into strategic imperatives for India's urban transition, examining PMAY-Urban 2.0, in-situ upgrading paradigms, green construction technologies, and the social function of land, and recommending five transformative compacts that can provide a roadmap towards achieving universal housing adequacy.

Keywords: *World Cities Report (WCR) 2026, UN-Habitat, Adequate Housing, PMAY-Urban 2.0, In-Situ Slum Upgrading, Housing Finance, Social Function of Land*

1. The Global Imperative for Housing Adequacy

More than half of humanity now resides in urban areas, and by 2050, an estimated two billion additional residents will join them. Yet, as UN-Habitat's monumental World Cities Report 2026: The Global Housing Crisis - Pathways to Action, launched officially at the 13th World Urban Forum (WUF13) in Baku, Azerbaijan, makes plain, the promise of adequate shelter remains profoundly unfulfilled. Globally, approximately 3.4 billion people, representing nearly 43% of humanity, currently experience acute housing deprivation, severe spatial overcrowding, lack of basic municipal services, or precarious tenure vulnerability. The report, authored through the collaborative synthesis of over eighty multidisciplinary scholars, practitioners, and policymakers across continents and validated through global Expert Group Meetings (EGMs), stands as a definitive intellectual asset and guiding compass for rethinking housing delivery systems.

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The World Cities Report 2026 fundamentally elevates housing from a narrow sectoral concern to the indispensable substrate of the entire sustainable development agenda. The report documents that the global backlog of inadequate housing expanded from 201 million units in 2010 to over 268 million in 2023, a 33% surge in just thirteen years that outpaced demographic growth across low- and middle-income regions. Furthermore, the macroeconomic scale of the challenge requires an unprecedented US$3 to US$4 trillion per year through 2030 in global housing and infrastructure financing. Crucially, the WCR 2026 deconstructs the crisis not as an isolated infrastructural bottleneck, but as a convergence of five mutually reinforcing fractures: acute affordability failures, forced displacement, unserved informality, escalating climate vulnerability, and lack of adequate focus on aspects of liveability and universal accessibility.

2. Lessons from 50 Years of Global Housing Policy

A central contribution of the World Cities Report 2026 is its uncompromising reinforcement of the Seven Components of Adequate Housing, grounded in the International Covenant on Economic, Social and Cultural Rights (ICESCR, General Comment No. 4, 1991) and the New Urban Agenda (Habitat III, Quito, 2016). The WCR 2026 emphasizes that adequacy must be understood as a convergence of seven indivisible, mutually supportive dimensions:

1. **Security of Tenure:** Protection in law and administrative practice against forced eviction, harassment, arbitrary displacement, and predatory dispossession, regardless of whether tenure is freehold, cooperative, leasehold, or customary.

2. **Availability of Services, Materials, Facilities, and Infrastructure:** Uninterrupted access to potable drinking water, sanitized wastewater disposal, continuous electrical energy, clean cooking fuels, solid waste management, stormwater drainage, and emergency response infrastructure.

3. **Affordability:** Housing expenditure (mortgage, rent, utilities, and maintenance) that does not exceed a proportionate threshold of household income (conventionally 30 %), ensuring that the fulfilment of other basic needs such as nutrition, healthcare, and education is not compromised.

4. **Habitability:** Adequate physical living space, structural integrity, thermal comfort, natural ventilation, acoustic protection, and resilience against climatic extremes, moisture, biological hazards, and seismic risks.

5. **Universal Accessibility:** Active architectural and planning integration that accommodates disadvantaged, vulnerable, and marginalized groups, including persons with disabilities (PwDs), the elderly, women, children, and informal workers.

6. **Strategic Location:** Spatial integration within the urban fabric that guarantees proximate, affordable, and safe access to primary employment clusters, public mass transit, healthcare facilities, educational institutions, and civic amenities, precluding spatial peripheralization.

7. **Cultural Adequacy:** Respectful architectural articulation that reflects local socio-cultural lifestyles, community traditions, vernacular building practices, and livelihood-housing integration without imposing alienating geometric typologies.

When applied sensitively this framework positions 'adequate housing' at the centre of city planning, land management, architectural and technological solutions, local community-

The Core Proposition of World Cities Report 2026

The World Cities Report 2026 establishes that the global housing crisis is not merely a deficit of bricks and mortar, but a structural failure of governance, land stewardship, and market regulation. Adequate housing is both a fundamental human right and a powerful macroeconomic multiplier that anchors the realization of the Sustainable Development Goals (SDGs) and the New Urban Agenda.

driven interventions and equitable and innovative policy instruments. This also advocates housing policy to break traditional sectoral siloes and combine larger land use, transportation and infrastructure planning with socio-economic planning focused on ensuring that adequate housing options are available to all, without distinction or compromise.

In order to analyse past efforts and experiments for providing adequate housing and create a deeper understanding of the persistent challenges and bottlenecks for housing delivery, the WCR 2026 undertakes a retrospective of fifty years of housing policy (Table 1). From slum clearance and state-led mass housing efforts of the 1960s-1970s to the structural adjustment and hyper-financialized market titling models of the 1990s-2000s, the report demonstrates that policies premised on state-led production or unfettered market deregulation have not performed as expected. Importantly, the key lesson that emerges from half a century of international experience is that community co-production, in-situ upgrading, and pluralistic tenure security remain powerful instruments for addressing deep-set market inequalities and long-term prosperity and well-being associated with adequate housing.

3. Emerging challenges that call for a housing rethink

The World Cities Report 2026 provides a deep analysis of the structural dynamics of the global habitat emergency. In the domain of affordability, the report highlights that households now spend an average of 11 times their annual income to acquire a standard dwelling. In Southern and Central Asia, the median house-price-to-income ratio exceeds 16.0. This affordability crisis is heavily driven by the financialisation of housing, where global speculative capital treats residential property as an asset for yield extraction rather than a social good. On the other hand, by the end of 2024, forcibly displaced populations had reached an unprecedented 123.2 million, alongside 64 million

Table 1: Evolution of Global Housing Paradigms (1960s–Present)

Era & Policy Paradigm	Primary Implementation Mechanism	Observed Structural Limitations	WCR 2026 Empirical Verdict
1960s-1970s: Eradication & Clearance	Forced eviction, large-scale slum demolition, centralized high-rise public housing estates.	Severed social safety nets, destroyed informal livelihoods, severe fiscal strain on municipal budgets.	Systemic failure: Displaced informality to outer peri-urban peripheries; exacerbated net poverty.
Late 1970s-1980s: Sites & Services	Provision of bare land plots with basic trunk infrastructure; incremental self-help construction.	Plots located on distant urban fringes; inadequate transport links led to widespread plot abandonment/sales.	Partially effective: Demonstrated viability of incremental building but failed on spatial proximity.
1990s-2000s: Market Enabling & Titling	Individual property titling (de Soto model), financial deregulation, commercial mortgage expansion.	Speculative land flipping, gentrification, financialization, complete developer neglect of EWS/LIG segments.	Structural distortion: Inflated median house prices; mortgage systems excluded informal workers.
2010s-Present: In-Situ Upgrading & Co-Production	Participatory enumeration, security of tenure, community-led infrastructure co-production, mixed-use land.	Requires inter-agency coordination, flexible land tenure laws, and dedicated municipal budget lines.	Gold Standard: Maximum retention of livelihoods, highest cost-effectiveness, superior social resilience.

people displaced from informal settlements over the past two decades. The WCR 2026 recasts displacement as a long-term urban development challenge demanding permanent habitat recovery solutions rather than emergency relief.

Informality is the primary mode of housing production across the Global South. The WCR 2026 advocates the need for recognizing that informal housing accounts for up to 80% of all residential construction across developing nations. It demonstrates that supporting informal builders with tenure security, technical assistance, and municipal trunk services is infinitely more effective than trying to eradicate or relocate informal settlements. The report therefore urges policymakers to embrace informality and actively leverage its organic strengths, affordability, incrementalism, spatial proximity, and livelihood integration, across five operational domains: social inclusion, housing upgrades, livelihood security, trunk infrastructure, and tenure regularisation.

The WCR 2026 further synthesizes critical evidence on environmental sustainability, liveability, and financing mechanisms. The built environment is responsible for 34% of global energy demand and 37% of carbon emissions, with residential housing driving nearly 21% of emissions. Climate-related hazards are projected to destroy or severely damage 167 million homes globally by 2040. In 2023 alone, natural disasters caused US$280 billion in economic losses, most of which were uninsured. Climate-resilient housing, incorporating passive cooling, circular materials, flood mitigation, and retrofits, must become a core design mandate.

Lastly, the report addresses the fundamental finance gap for ensuring effective housing delivery at scale. Only 25.5% of eligible loan applicants worldwide secure formal mortgages, leaving low-income households, informal workers largely excluded. The WCR 2026 emphasizes that closing the adequate housing gap requires channelling public land assets, municipal green bonds, and alternative underwriting mechanisms to support micro-mortgages for informal households. The report foregrounds an urgent need to focus on land-based financing, public-backed credit guarantee funds, social housing bonds, and innovative public-private partnerships (PPPs) structured around public land and patient private capital.

4. Strategic Imperatives for India's Urban Transition

India stands at the defining frontier of the global urban transition. With urban population projected to reach 600 million by 2036, the insights of the World Cities Report 2026 provide an urgent blueprint for national policy renewal. Table 2 below summarizes key global indicators established by WCR 2026 and provides a comparison with empirical realities in India.

Table 2: Comparative Global and National Urban Housing Indicators

Indicator / Macroeconomic Dimension	Global status (WCR 2026)	India Urban Empirical Metric	Strategic Policy Implication
Population Facing Housing Deprivation	3.4 billion people (approx. 43% of humanity)	209 million in informal settlements (40.8% of urban pop.)	Demands massive institutional scale in slum upgradation.
Backlog Growth Rate (2010-2023)	+33% (from 201M to 268M units)	Housing shortage at ~29 million units (2020)	EWS/LIG segments constitute >96% of total national backlog.
House Price-to-Income Ratio	11.0x global average (16.0x in S. Asia)	9.2x to 11.4x across tier-1 & tier-2 cities	Severe affordability failure; freehold purchase out of reach.
Rent Burden (>30% Income on Shelter)	44% of urban households globally	Over 48% of informal and migrant urban workers	Demands institutional expansion of Affordable Rental Housing.

Indicator / Macroeconomic Dimension	Global status (WCR 2026)	India Urban Empirical Metric	Strategic Policy Implication
Annual Investment Required	US$3.0 to US$4.0 Trillion per year	Estimated ₹12 to ₹15 Lakh Crore over 10 years	Requires blended public-private and municipal bond financing.
Construction Employment Multiplier	High direct/indirect labour absorption	2.69 jobs per ₹1 Lakh demand (2.61 informal, 0.08 formal)	Housing investment acts as India's premier employment catalyst.

Informality remains the predominant mode of housing production in urban India. An estimated 40.8 percent of India's urban population lives in informal settlements, unauthorized colonies, urban villages (Lal Dora), and slums, representing approximately 209 million people in 2024. While down from 48.8 percent in 2010, the absolute magnitude of informal residents continues to grow. Informal settlements are not merely residential spaces; they are vibrant economic ecosystems where over 80 percent of residents engage in home-based enterprises, informal trade, and artisanal production.

India's housing deficit of approximately 29 million units remains acutely skewed toward the Economically Weaker Section (EWS) and Low-Income Group (LIG) segments (Figure 1). What is noteworthy is that the share of affordable housing launches in metropolitan markets has reduced significantly, with percentage of affordable housing within new builds reducing from 52 % in 2018 to just 17 % in 2025.

The Pradhan Mantri Awas Yojana (PMAY-Urban), launched in 2015, marked a transformative national commitment to ensure housing adequacy at scale, sanctioning over 122 lakh dwelling units and completing more than 97 lakh pucca houses with dedicated basic infrastructure. However, as India transitions to the next phase of urbanization, supported by PMAY-Urban 2.0 and targeted infrastructure missions, closing the housing gap will require further evolution of the existing delivery mechanisms. Building on the recommendations of the WCR2026 framework, India must pursue six core strategic pillars to address housing adequacy.

1. Pluralistic Tenure & Community Land Trusts (CLTs): Transitioning beyond individual freehold ownership toward a continuum of land rights, including collective patta and Community Land Trusts that separate land ownership from structure ownership to permanently prevent speculative gentrification.

2. In-Situ Slum Upgrading & Affordable Rental Housing (ARHCs): Scaling proven Indian models such as the Yerwada community-led participatory upgrading in Pune (BSUP) and the Ahmedabad Slum Networking Project (Parivartan). Expanding formal rental housing for circular migrant labour through municipal incentives.

3. Livelihood-Integrated & Transit-Oriented Development: Ensuring mixed-use zoning that accommodates home-based micro-enterprises and locating affordable housing within 500-800 meters of transit corridors.

Figure 1 Distribution of Urban Housing Shortage Across Income Segments in India (2026)

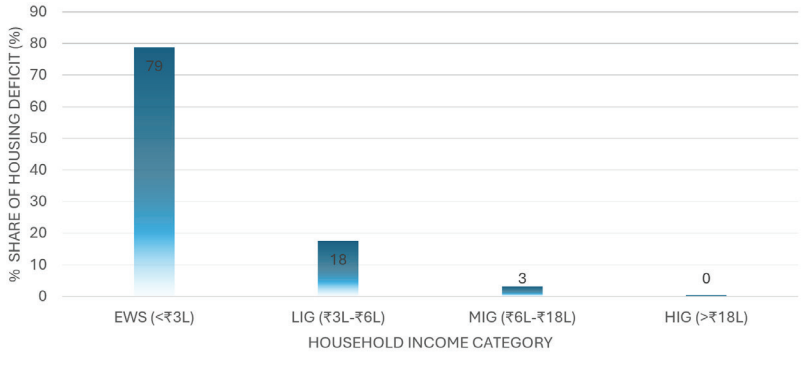


Figure 1: illustrates the stark structural concentration of housing shortages across income strata in urban India, confirming that policy interventions must be near-exclusively targeted at EWS and LIG categories.

4. Green & Disaster-Resilient Technologies (GHTC-India): Mainstreaming industrialized construction technologies validated under MoHUA's Lighthouse Projects, such as Monolithic Concrete (MIVAN), Light Gauge Steel Framed (LGSF), Precast Volumetric 3D Pods, 3D Concrete Printing, and Cool Roof retrofits.

5. Innovative Housing Finance & the Bhubaneswar PPP Model: Scaling HUDCO's wholesale refinancing for micro-mortgages, issuing Municipal Social Housing Bonds, and executing cross-subsidized PPPs like the Bhubaneswar Development Authority model (allocating 65% land for EWS housing and 35% for commercial cross-subsidy at zero public debt).

6. Asserting the Social Function of Urban Land: This will require policies for earmarking land for affordable housing, deploying Land Value Capture (LVC) to tax transit-induced appreciation and redeploy into affordable housing and services, implementing land management instruments such as Town Planning Schemes (TPS) that reserve 10–15% land for EWS housing, and utilizing GIS-based spatial mapping to identify surplus public land banks for social shelter.

Conclusion

This paper proposes five operational compacts for institutional adoption across Indian states over the 2026-2036 decade to ensure long term housing adequacy.

Table : Five Strategic Compacts for Universal Adequate Housing in India (2026–2036)

Strategic Compact	Core Institutional Mechanism	Key Stakeholders & Enablers	Expected 10-Year Transformative Impact
Compact 1: Strengthen Social Function of Land	Mandatory reservation of land in private housing projects and urban land-pooling schemes for EWS/LIG housing; vacant land taxation to penalize speculation; monetization of central/state public land banks for social housing.	MoHUA, State Urban Development Depts, Municipal Corporations, Development Authorities.	Unlock significant serviced urban land; lower land acquisition cost for social housing
Compact 2: Promote Pluralistic Tenure & Upgrading	Enactment of state-level legislations recognizing non-eviction rights, collective leaseholds, and Community Land Trusts; policy focus on in-situ upgrading and retrofitting; policies for promoting short-tenure small format housing like rental housing, hostels and dormitories	State Revenue Depts, Municipalities, CBOs, Mahila Samitis, Slum Dwellers Federations.	Grants tenure security to informal residents and circular workers; catalyzes private self-upgrading and community co-production.
Compact 3: Climate-Resilient Housing Infrastructure Mission	Formal designation of affordable housing as critical national climate infrastructure; mandatory adoption of passive cooling, green materials, and heat/flood resilience codes.	Bureau of Energy Efficiency (BEE), HUDCO, Building Materials & Technology Promotion Council (BMTPC).	Reduces carbon emissions in social housing; insulates millions of vulnerable households from extreme heat and flood events.
Compact 4: The Inclusive Housing Finance & Risk-Pooling Vehicle	Establishment of credit enhancement vehicles; alternative credit scoring using digital UPI flows; interest subvention for collective housing loans.	HUDCO, National Housing Bank (NHB), MFIs	Expands mortgage and micro-finance penetration to informal households; lowers borrowing interest rate

Strategic Compact	Core Institutional Mechanism	Key Stakeholders & Enablers	Expected 10-Year Transformative Impact
Compact 5: Data & Community Co-Production Compact	Creation of open-source, community-audited Municipal Housing Observatories; participatory area-level planning for urban resilience	Urban Local Bodies (ULBs), Academic Institutions, NGOs, Civil Society.	Eliminates exclusion errors in social welfare; enables evidence-based spatial planning and real-time deficit tracking.

By aligning national policy with the World Cities Report 2026, India can transform its housing sector from an emergency welfare response into a resilient, green, and inclusive driver of national economic prosperity and social dignity. For India and the global South, the next decade represents a critical window of reckoning and renewal. By embracing the seven dimensions of adequacy, unlocking the social function of land, institutionalizing community co-production, and deploying green construction technologies, cities can fulfil the promise of the New Urban Agenda and SDG 11. Adequate housing is the foundational right upon which just, resilient, and thriving urban civilizations are built.

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From Landowners to Stakeholders: The Self-Made Sustainable City of Magarpatta, Pune

In 1993, due to rapid urbanisation in India, farmers in Pune faced immense pressure to sell their 430 acres of land to the government or the local developers. Rather than selling their land and losing their inheritance, Satish Magar conceptualised a partnership with around 120 other farmer families, who pooled their agricultural lands and became equity shareholders in the Magarpatta Township Development and Construction Company Limited in proportion to the land contributed, with no upfront monetary transaction. It took 7 years to secure the government permissions including a special exemption from the Urban Land Ceiling Act, after which an integrated township comprising a self-sustaining ecosystem (a 'walk-to-work' model) with residential neighbourhoods, the Cybercity IT park, schools, a hospital and commercial zones was built.

This model benefits farmers in a revenue-sharing system such that instead of receiving a one-time payment, they receive a percentage of sale proceeds over time. Land values appreciated from ₹35 lakh per acre in 2000 to over ₹3.5 crore per acre today, a 900% increase. The IT Park was leased, not sold, generating perpetual annual dividends.

Apart from land appreciation, the model encouraged entrepreneurship; over 250 farmers were trained as contractors in construction, security and landscaping, with many now earning over ₹40 lakh annually. The township currently houses approximately 35,000 residents and employs 65,000-70,000 people, contributing an estimated ₹150-175 crore monthly to Pune's GDP while generating significant annual property tax revenue for the municipal corporation. Magarpatta demonstrates that farmer-led, collaborative planning can prevent land alienation while ensuring long-term wealth creation and achieving sustainable urbanisation without displacing the original landowners.

BEYOND HOUSING, TOWARDS INTEGRATED AND INCLUSIVE CITIES

SURBHI ZUTSHI

India's rapid urbanisation has intensified the need for housing that is not only affordable and adequate, but also spatially integrated with infrastructure, mobility, and livelihood opportunities. Addressing the "housing question" requires framing it around four core pillars: affordability, adequacy, security, and viability. This paper examines the limitations of fragmented approaches to urban housing and argues for an integrated planning framework that treats housing as a component of the wider urban socio-economic system. Drawing on national policy evidence, infrastructure and housing indicators, and selected Indian and international redevelopment case studies, the paper examines how peripheral relocation, inadequate municipal infrastructure, limited institutional finance, and weak connectivity can undermine the social and economic viability of affordable housing. Its key contribution lies in linking the architectural and spatial dimensions of housing with broader questions of accessibility, livelihood security, urban infrastructure, and social inclusion. The paper proposes a multi-dimensional approach combining higher-density and mixed-use development, transit-oriented development, strategic use of public land, innovative financing, brownfield redevelopment, and improved municipal capacity. The paper presents an integrated framework for shaping more inclusive, resilient, and economically productive Indian cities.

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India's Hidden Urban Expansion

The Economic Survey 2025–26, published by the Ministry of Finance, establishes that India is already deeply urbanised in economic and functional terms. Using satellite data from the European Commission's Global Human Settlements Layer (GHSL), the Survey highlights that India was 63% urban as early as 2015—nearly double the rate recorded in the 2011 Census.[1] This functional reality aligns with World Bank projections, which estimate that by 2036, urban India will house 600 million people (60 crores) i.e. (40% of the population) and generate roughly 70% of the national GDP.[1]

Urbanisation in 21st-century India represents a significant demographic and socio-economic shift. As millions migrate to cities for economic mobility, Government must accommodate rapidly expanding populations within sustainable, equitable, and resilient spatial frameworks. Contemporary urban governance should recognise that housing, basic infrastructure, and livelihood creation can no longer be treated as compartmentalised domains, but must be synthesised into an integrated development approach.

The Urban Housing Crisis and Execution Bottlenecks

India's rapid urbanisation is straining the country's housing infrastructure. Currently, 36% of India's population lives in urban areas, a figure projected to reach 40% by 2030, with the number of cities holding a population over 1 million (10 lacs) expanding to 71. Led by migration and economic opportunities, total urban housing demand is projected to reach 2.22 crores units by 2030, of which 95.2% (2.11 crore units) is concentrated in the affordable segment—with 45.8% required specifically for Economically Weaker Sections (EWS). Combined with the existing backlog of approx. 1.01 crores units, India faces a cumulative affordable housing shortage of 3.13 crore units by 2030 [2]. Even with a massive ₹45 trillion (INR 450 lakh crores) market opportunity for banks and HFCs, execution challenges on both the supply and demand sides continue to slow the sector due several key factors such as:

- Erosion of Homebuyer Affordability: The share of affordable housing sales (<₹5 million i.e. INR 50 Lakhs) in India's top 8 cities dropped from 53.8% in 2018 to just 25.7% in 2024 [2]. Interest rate hikes (a 250 bps repo rate increase since 2022) alongside rising house prices have pushed the average EWS household's EMI-to-income ratio from 43% to 62% [2]. This exceeds the standard 50% Fixed Obligation to Income Ratio (FOIR) limit set by banks, effectively cutting off low-income buyers from formal credit.
- Supply-Side Lag & Execution Delays: Affordable housing launches plummeted from 52.4% of total top-8 city launches in 2018 to 22.9% in 2024 [2]. Execution delays are more severe in urban areas: under PMAY, 83% of rural homes (PMAY-G) have been completed versus only 73% of urban homes (PMAY-U).
- Lack of Private and Institutional Capital: High land prices (accounting for 40–50% of construction costs) and thin profit margins have disincentivised private developers. Institutional capital inflow into affordable housing between 2011 and 2024 was just USD 1.6 billion (approx. INR 15,250 crores) which is merely 3.6% of overall real estate private equity, with foreign funds contributing a negligible 15%[2].

Infrastructure Constraints and Capital Shortfalls

Essential physical infrastructure such as supply, sanitation etc., alongside social infrastructure like school and healthcare, forms the foundational baseline for human well-being and productivity. Strategic investment in these core services yields a healthier, highly satisfied, and more robust labor force, ultimately driving economic output (GDP) and economically justifying the capital expenditure on infrastructure. Housing built without integration into physical utilities causes dysfunctional sprawl.

Under PMAY(U), over 5.6 lakh completed or grounded housing units faced delayed handover due to missing basic municipal services like piped water, sewerage, power connections, and storm-water drainage[3]. Addressing the urban challenge requires bridging massive existing capital deficits. Urban local bodies (ULBs) in India operate under structural constraints that hamper independent execution of large-scale infrastructure projects:

- Macro-Capital Requirements: India requires an estimated $840 billion (approx. INR 80 lakh crores) in urban infrastructure investments between 2022 and 2036 (roughly $55 billion, i.e. INR 5.25 lakh crores annually) across core sectors like water, sewerage, solid waste, and urban transit networks[4].
- Infrastructure Expenditure Gap: India's capital expenditure on urban infrastructure historically hovers around 0.6% of GDP, creating a significant deficit compared to peers such as China (2.8% of GDP)[4].
- ULB Revenue Vulnerability: Intergovernmental grants account for over 70% of total municipal revenues in many states, reflecting high financial dependence[4].
- Underdeveloped Municipal Debt Markets: Municipal bond issuance remains negligible in India, representing less than 0.05% of GDP borrowing, limited by weak credit ratings, lack of standardised double-entry accounting, and low user-charge cost recovery[4].

Structural Livelihood Deficits Outside the City Core

India's economy is sustained by a vast, informal migrant workforce that circulates between villages and expanding urban and industrial clusters. This migrant workforce contributes a significant portion of India's GDP, working in the construction, manufacturing industries, domestic work, street vending, etc. Addressing the "housing question" requires framing it around four core pillars: affordability, adequacy, security, and viability—meaning close proximity to jobs, transport, and mobility. Currently, migrant workers rely on precarious living arrangements, including informal rentals, employer-provided housing, or squatting on vacant land. This proliferation of informal settlements stems directly from failure in providing housing for all.

Successful slum rehabilitation requires a multi-faceted approach combining strong public-private coordination for financing and deep community involvement tailored to the social and economic needs of the residents. The following section evaluates key rehabilitation projects, highlighting their relocation and its adverse consequences:

Table : Rehabilitation projects, highlighting relocation and its adverse impacts

Project / Scheme	Relocation Site	Distance from Original Site	Key Socio-Economic & Urban Impacts
Kannagi Nagar & Perumbakkam (Chennai, TN)	Okkiyum Thoraipakkam & Perumbakkam	**25 – 30 km** (Relocated from central riverbanks like Cooum and Adyar)	***High rate of livelihood loss for informal workers***; severe daily commute burden (1.5–2 hours each way) and increased school dropout rates among children.
Savda Ghevra Resettlement (Delhi)	Savda Ghevra (North-West fringe)	**30 – 40 km** (Relocated from central JJ clusters, e.g., Yamuna Pushta and Central Delhi)	Peripheral isolation; ***lack of immediate public transit, reduced access to urban labor markets***, and spatial segregation from core city services.
Mahul / Eversmile Complex (Mumbai, MH)	Mahul (Chembur / Industrial Belt)	20 – 30 km (Relocated from rail-side slums like Malad, Kurla, and central corridors)	Isolated from major suburban rail stations and local informal employment hubs.
Bawana Resettlement Area (Delhi)	Bawana (Outer North Delhi)	30 – 35 km (Relocated during infrastructure drives)	Shifted away from established domestic and informal service jobs; required significant state intervention to rebuild basic civic infrastructure.
Dharavi Redevelopment (Non-Eligible Allocation) (Mumbai, MH)	Salt Pan Lands / Mulund / Kanjurmarg	12 – 25 km (Proposed off-site relocation for post-2000 or upper-floor occupants)	Threatens informal industrial networks (leather, pottery, recycling) that rely on Dharavi's centralised location and ecosystem.

To prevent urban inequality, planning frameworks must prioritise integrating low-income housing within primary economic zones. While state-level policy interventions prioritise in-situ slum redevelopment to preserve existing livelihood ecosystems, market constraints and spatial limitations frequently necessitate off-site relocation to distant regions. In such scenarios, establishing robust subsidised mass rapid transit networks to core commercial hubs is critical, ensuring spatial equity for displaced populations while sustaining the urban economy's reliance on their labor. Leaving housing on the periphery without connection locks them into economic isolation, as the cost and time of daily commutes quickly erase the benefit of cheaper rent. Ultimately, a house on the urban fringe only becomes a viable home when it is paired with direct, low-cost mobility to the city's economic opportunities.

Vision to Impact: Building the path to Tangible results

The future of urban growth in India depends on moving away from disconnected sector-by-sector planning. By linking affordable housing with mass transport, leveraging creative urban redevelopment strategies, strengthening financing mechanisms, and embedding climate resilience directly into land planning, Indian cities can transform into sustainable, economically vibrant centers for all residents.

Supporting Affordability

Free FAR: In the crowded heart of our cities, land is scarce and sky is limitless, making free FSI the quiet key that unlocks the affordable housing dream. Land acquisition drives up to 50% of development costs; raising FSI allows developers to build vertically, spreading fixed land expenses across far more apartments. Eliminating costly regulatory fees for extra floor space slashes per-unit construction costs by up to 24% [2]. Crucially, this policy converts scarce urban land into high-density inventory without adding financial strain on public resources. By making high-density projects financially viable for private developers, expanding base FSI rapidly scales up urban housing supply, driving down property prices and making homes accessible.



Infographic representing Integration of Housing, Infrastructure and Livelihood

Repurposing PSU Land: High population density in urban areas drives up land costs, pushing affordable housing to outer suburbs that often lack adequate transit and infrastructure. Repurposing vacant land owned by Public Sector Undertakings (PSUs)—such as railways and defense—presents a strategic solution through Public-Private Partnerships (PPPs). Because land acquisition typically accounts for 40% to 50% of total construction expenses, leveraging state-owned land significantly reduces development costs. This cost reduction improves project financial feasibility for private developers, lowers initial purchase prices, and provides low-income buyers with better access to urban physical infrastructure and transit networks.

Financial & Investment Incentives: Extending low-cost subsidised borrowings—such as Affordable Housing Fund access—alongside tax credits and direct subsidies significantly lowers capital costs for private developers. This improves project feasibility and encourages market participation. Simultaneously, protecting homeownership demand is critical; targeted mechanisms like PMAY-U 2.0's 4% interest rate subvention shield low-income buyers from market volatility and rising interest rates.

To sustain long-term growth, innovative capital structures are indispensable. Affordable

housing projects often fail to attract private capital because low rental yields and profit margins cannot cover upfront land, construction, and borrowing costs. Mentioned below are some financial mechanisms that could assist in securing long-term capital viability:

- **Viability Gap Funding (VGF):** VGF is an explicit, one-time or phased capital grant provided by the government to bridge the gap between a project's actual cost and its economic viability. In affordable rental or social housing, market revenues from low rents are insufficient to service debt or generate a baseline return on investment (ROI). VGF absorbs a portion of the initial capex (e.g., 20–40% of construction costs), effectively lowering the developer's debt load and capital requirements. It transforms an otherwise unbankable project into a financially attractive venture for private developers without requiring them to raise rental rates on low-income tenants.

- **Blended Finance & Bond Guarantees:** This approach uses strategic public, concessional, or philanthropic capital to de-risk projects, thereby crowding in large-scale private institutional capital (such as pension funds or private equity). Junior equity or first-loss capital is provided by donor agencies or municipal funds. If the project underperforms, this capital absorbs the initial losses, shielding commercial investors.

- **Bond Guarantees:** When a municipal body or private developer issues affordable housing bonds, a credit guarantee from a sovereign entity or multilateral bank upgrades the bond's credit rating (e.g., from BBB to AA).

Higher credit ratings lower borrowing interest rates and extend debt maturities, allowing developers to secure patient, low-cost long-term capital tailored to low-yield housing assets.

- **Housing Trust Funds & Land Value Capture (LVC):** This pairs a dedicated capital pool (Trust Fund) with a self-sustaining municipal revenue generator (Value Capture). **Land Value Capture (LVC):** When public investment in infrastructure (like a new transit line or high-density zoning shift) causes surrounding private land values to skyrocket, the local government captures a portion of this unearned value through betterment levies, impact fees, or sold development rights (e.g., paid FAR extensions).

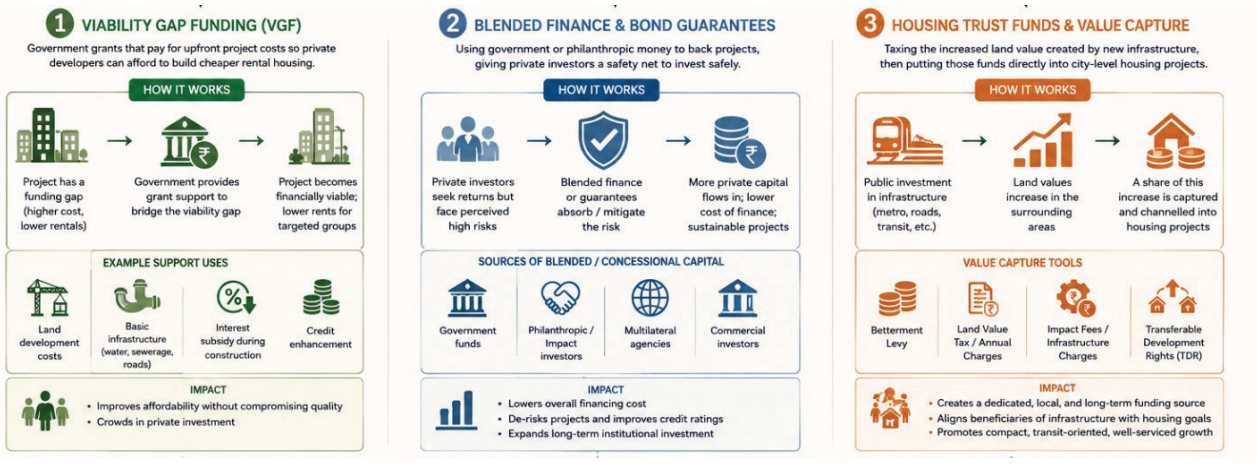
Housing Trust Funds: The revenue generated through LVC is legally ring-fenced into a dedicated trust fund, rather than being absorbed into general municipal funds.

This creates a permanent, predictable, and non-cyclical funding stream at the city level dedicated solely to financing subsidised land assembly, site preparation, and ongoing affordable housing subsidies.

Modern Construction & Smart Planning & Efficiency: Advanced Technology input further strengthens Affordable housing scaling. Some of the tools and practices that provides this mass scaling are mentioned below-

- **Prefabrication & Modular Systems:** Manufacturing elements off-site speeds up assembly, reduces material waste, and shortens overall project timelines by 30–50%.

- **3D Printing & Robotics:** Additive printing and automated equipment handle repetitive tasks like wall extrusion and



Infographic representing Financial & Investment Incentives for Affordable Housing

plastering, drastically lowering manual labor costs and site safety hazards.

- **Building Information Modeling (BIM), Digital Planning:** Provides a precise 3D data model to catch design conflicts across mechanical, electrical, and structural systems before construction, avoiding costly rework.
- **GIS & AI Mapping:** Evaluates land availability, utility access, and transit connectivity to select optimal, high-density sites for low-income housing.
- **Digital Financial Infrastructure, Micro-Financing & Payment Systems:** Leverages alternative data (e.g., utility history) to assess credit for informal workers, while digital platforms streamline micro-EMI collections to expand formal credit access.

Urban Infrastructure Financing

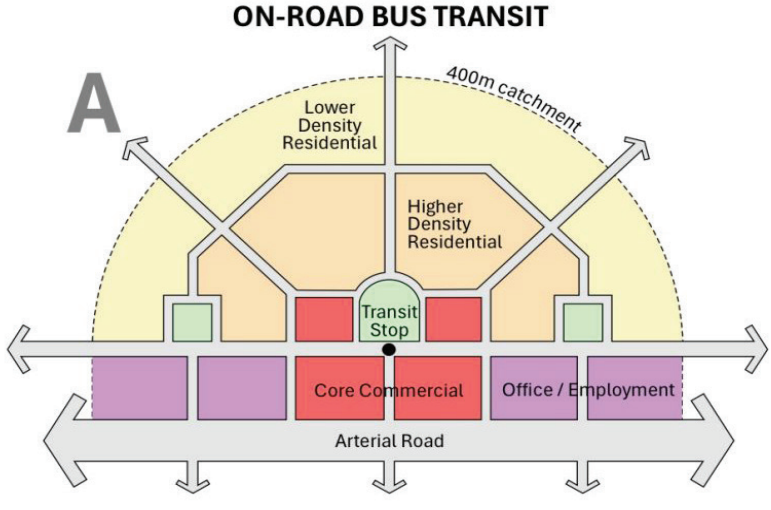
Structural Reforms (Systemic Fiscal & Institutional Changes): Central and state governments provide the seed money for big national goals, but cities need their own financial engine to build local infrastructure projects quickly and keep them running long-term. To truly empower Indian cities, state governments must first overhaul how municipal finances work from the ground up. Standard grant allocations often lack incentives for local governments to improve operational performance or revenue collection. This begins by replacing rigid, project-tied grants with predictable, formula-based transfers, giving local leaders the fiscal autonomy needed to plan for long-term growth. Implementing performance-linked fiscal transfers will encourage institutional results. Alongside state support, cities must build their own financial independence; targeting a doubling of local revenues every five years through updated property taxes and cost-recovering service fees ensures daily operations and maintenance pay for themselves.

Integrated Urban and Transport Planning

Expand Transit Oriented Development Frameworks Nationally: TOD streamlines development and directly links transit access to housing, infrastructure, and job opportunities. The TOD Policy 2026 promotes high-density, mixed-use urban growth within 500 meters of Delhi's Metro, RRTS, and Railway corridors, unlocking 207 sq. km—including 80 sq. km across Land Pooling zones and Unauthorised Colonies. By lowering minimum plot size requirements to 2,000 sqm. with permissible FAR up to 500, it mandates 65% space for affordable housing under 100 sqm.[5]

Developing Satellite Towns: Mega-cities should be decongested by building self-sustaining peripheral satellite towns supported by infrastructure links. Setting up industrial parks, IT/SEZ zones, and logistics hubs satellite towns creates local employment, reducing daily out-migration to the parent city. Lower land acquisition costs of peripheral areas enable the delivery of diverse housing typologies, particularly affordable and middle-income housing stock that is often priced out of primary metropolitan centers. Some examples for successful satellite towns are Navi Mumbai, Noida and Greater Noida, HITEC City Hyderabad, Rajarhat New Town Kolkata.

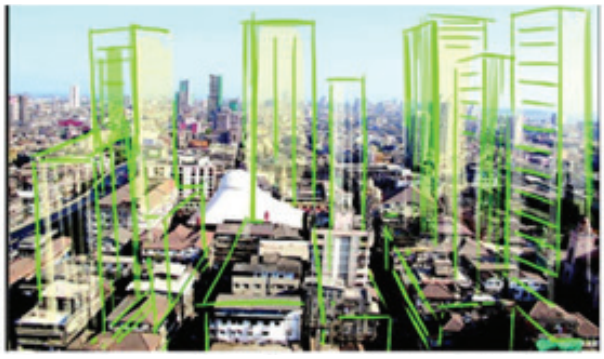
Creative Redevelopment of Cities: Underutilised city-center land should be used in creative ways through market-driven densification to achieve inclusive, resilient, and sustainable urban growth. Brownfield core redevelopment leverages existing sunk infrastructure, increases agglomeration productivity, reduces GHG emissions from urban sprawl, and optimises land



TOD Infographic



Mill Lands Redevelopment, Mumbai



Bhendi Bazaar Urban Renewal Project, Mumbai



Kidwai Nagar (East) Redevelopment, New Delhi



Sabarmati Riverfront Development



Smart City Bhopal brownfiled development

Brownfield Redevelopment exemplars

value. The strategic deployment of underutilised inner-city land serves as a vital tool to curb unchecked peripheral sprawl, are illustrated as below-

- Mill Lands Redevelopment, Mumbai: Over 600 acres of underutilised textile mill land in central Mumbai (Girangaon/Lower Parel) were unlocked for urban brownfield redevelopment. Transformed derelict industrial estates into high-density commercial centers, residential spaces, and transit-adjacent hubs. It leveraged existing central transport infrastructure, optimised high-value urban land, and generated economic agglomeration in the core city.

- Bhendi Bazaar Urban Renewal Project, Mumbai is 16.5-acre brownfield cluster redevelopment in South Mumbai, replacing dilapidated, unsafe high-density tenements (chawls) with a modern master-planned district. It demonstrated market-driven densification by utilising vertical growth to rehouse original tenants in safer, modernised homes on-site while unlocking land value for wider roads, public spaces, and social infrastructure without expanding urban sprawl.

- Kidwai Nagar (East) Redevelopment, New Delhi is a good example of Redevelopment of an aging, low-density government housing colony spanning 86 acres along a core transit corridor (Ring Road/ Metro). It replaced low-rise

housing with high-density, multi-story residential units and modern commercial office spaces. It optimised high-value central land, connected directly to existing metro infrastructure, and incorporated sustainable features like localised sewage treatment plants and solar integration.

- Sabarmati Riverfront Development & Core Infill, Ahmedabad: It Reclaimed and redeveloped underutilised land along the Sabarmati River running through the city center. It combined environmental river restoration with urban land management. The project created public parklands and reclaimed commercial/mixed-use plots for market sale, effectively using land value capture to fund the central infrastructure works without extending the city's outer physical footprint.

- Smart City Brownfield Infill Projects, Pune & Bhopal: It focused Area-Based Development (ABD) initiatives under the Smart Cities Mission targeting underperforming core urban pockets. Pune's Aundh-Baner-Balewadi (ABB) and Bhopal's Tatya Tope Nagar models focused on retrofitting existing urban cores—upgrading old utility pipelines, widening pedestrian walkways, and densifying underutilised public plots to drive localised economic growth while reducing reliance on long-distance commuting.

Brownfield redevelopment in core urban areas is rarely a seamless process; it requires navigating complex tenant displacement, fragmented land titling and high upfront demolition and engineering costs. While these projects present severe execution hurdles, their long-term structural benefits make them a step forward in planning.

Additional Interventions

Institutionalise Single-Window Clearances: Institutionalise a centralised, single-point authority across inter-governmental agencies to streamline approvals, eliminate departmental bottlenecks, and curb pre-construction**.** Implementing a single-window clearance mechanism cuts approval timelines by 40% [6], enhancing execution speed, predictability, and investor confidence. By accelerating project launches, this unified framework mitigates cost overruns while fostering transparency and trust across all stakeholder levels.

Synchronise Utilities and Housing Metrics: Mandate that no housing project receives final handover clearance without synchronised trunk connections for water, power, and sewerage, etc., eliminating infrastructure-led delivery lags.

Bringing informal leases into the mainstream fold: Mainstreaming of informal leases transforms off-the-record rental agreements into transparent, legally backed tenancies. By introducing simple digital registration, basic tenant protections, and landlord incentives, cities protect vulnerable migrants from arbitrary eviction and poor sanitation. At the same time, governments get clear data on where people actually live. Knowing real neighborhood population numbers allows planners to build enough water lines, public transit, schools, and hospitals where they are needed most.

Below are a few global and national case studies of inclusive planning that demonstrate practical success on the ground[7]. When shaping future urban frameworks, prioritising real-world interventions with verified outcomes ensures that strategies are both actionable and resilient.

Driving Inclusive Growth for Tomorrow

True urban resilience demands moving from the eradication of informal settlements to their strategic integration—recognising these neighborhoods as vital engines of the urban economy. To build genuinely inclusive cities, governance frameworks must modernise on three key fronts: first, by formalising the full spectrum of housing to bring workforce accommodation into the mainstream fold; second, by replacing rigid master planning with agile bylaws that seamlessly link housing to livelihoods; and third, by

Table : Global and national case studies of inclusive planning

Case Study / Location	Redevelopment Model	Key Intervention	Scale / Outcomes
JAGA Mission, Odisha, India	Urban Land Readjustment & Slum Upgrading	Secure land rights, housing improvement and modern infrastructure in slums	585 slums upgraded across 30 cities; 8 cities made slum-free
Barrio 31, Buenos Aires, Argentine	Integrated Slum Upgrading	Infrastructure improvement, community integration and enterprise partnerships	40,000 residents integrated across 72 ha; 18 km of infrastructure developed
Land Readjustment (LR), Japan	Land Readjustment & Value Capture	Reconfiguration of land parcels; reserve land sales used to finance public infrastructure	Over 3,700 sq. km redeveloped, equivalent to around 30% of Japan's urban land area
Johannesburg Property Company, South Africa	Public Asset Monetisation & Leasing	Derelict/abandoned public buildings leased to private developers through open tenders for affordable housing	500+ buildings targeted; 48 initial leases generated R17.9 million in incremental revenue while reducing maintenance costs
Regent Park, Toronto, Canada	Public–Private Cross-Subsidisation	Higher-density market-rate development used to finance replacement social housing and community facilities	69-acre estate transformed into a mixed-income community; 100% of social housing units replaced

embedding decentralised infrastructure—such as localised clean water and energy micro-grids—at the neighborhood level. Unifying housing, infrastructure, mobility, and economic opportunity ensures that India's urban future is safe, dignified, and intrinsically tied to growth.



Jaga Mission, Odisha, India



Barrio 31, Buenos Aires, Argentine

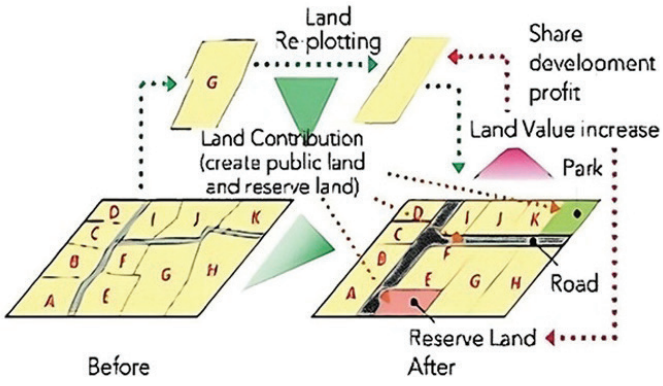


Social Housing by Johannesburg Property Company

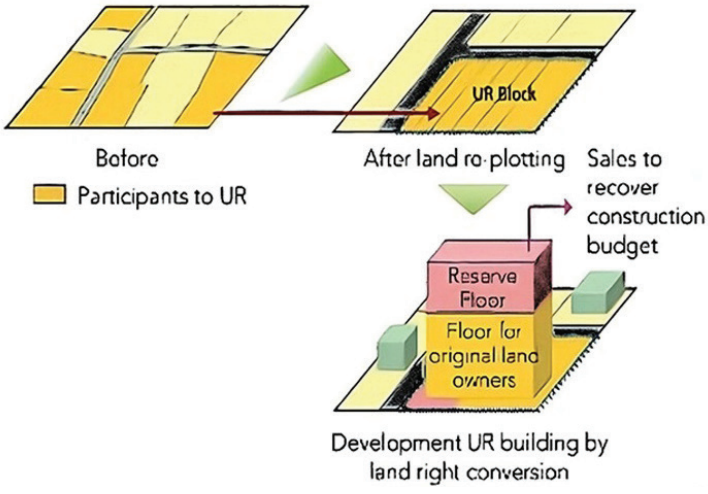


Conceptual 3D of Redevelopment of Regent Park, Toranto

Global and national case studies of inclusive planning



Conceptual diagram of Land Readjustment (LR), Japan



Global and national case studies of inclusive planning

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ADEQUATE HOUSING IN INDIA'S URBAN TRANSITION: LINKING HOUSING, INFRASTRUCTURE, LIVELIHOODS AND FINANCE

A POLICY SYNTHESIS OF CURRENT HOUSING, URBAN DEVELOPMENT AND FINANCING INSTRUMENTS

ANSHU KALSHYAN

India's urban housing policy has achieved substantial scale. The next policy question is how completed housing can translate more consistently into adequate housing outcomes - affordability over the household lifecycle, access to livelihoods and services, infrastructure readiness, resilience and sustainable operation. This paper examines that question through a synthesis of existing policy and institutional instruments rather than by proposing a new scheme. It draws on PMAY-U and PMAY-U 2.0, NITI Aayog's Comprehensive Framework to Promote Affordable Housing, the Urban Challenge Fund, Union Budget 2026-27 provisions on City Economic Regions and Municipal Finance, the Economic Survey 2025-26, and HUDCO's Urban Invest Window. The paper also reviews selected international practices from Vienna, Singapore and Hong Kong for lessons on durable affordable housing, integrated town planning and land-value capture. It argues that the policy emphasis can progressively move from housing delivery in isolation to housing within a functioning urban system, where land use, public transport, basic services, employment access, financing and post-occupancy performance are considered together. It concludes with an implementation lens for project appraisal and monitoring based on existing policy directions, intended to support better convergence across housing, urban infrastructure and livelihood planning. The discussion retains a focus on implementation, convergence and measurable outcomes.

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1. Introduction: From Scale to Adequacy

The theme 'Adequate Housing for All' is especially timely because it asks a deeper question than the numerical housing deficit. The United Nations has consistently treated adequate housing as multidimensional. The seven recognised dimensions are security of tenure, availability of services and infrastructure, affordability, habitability, accessibility, location and cultural adequacy. UN-Habitat's World Cities Report 2026 reiterates these dimensions and notes that location is material because housing should allow access to employment, healthcare, schools, childcare and social facilities (OHCHR & UN-Habitat, 2009; UN-Habitat, 2026). This broader understanding is particularly relevant to low-income households, migrants and vulnerable groups, for whom an apparently inexpensive house can become difficult to

sustain if it is disconnected from jobs, public transport and basic services.

India enters this debate from a position of considerable achievement. On 9th August 2026, the Ministry of Housing and Urban Affairs reported that more than 1.25 crore houses had been sanctioned under PMAY-U and PMAY-U 2.0 together and more than one crore had been completed and delivered. Around one crore houses had been allotted to women. PMAY-U 2.0 itself had crossed 18.38 lakh sanctioned houses by that point (Ministry of Housing and Urban Affairs, 2026c). These milestones are significant not only because of their scale, but because they create the institutional base for the next stage: moving from delivery alone to the quality of the urban opportunity created by that delivery.

Affordability also needs to be read in the context of location. A low acquisition price or rent does not necessarily imply a lower cost of living if the household faces high transport expenditure, long travel time, unreliable services or repeated maintenance costs. Conversely, a well-connected location can improve access to employment and public services and reduce the recurring burden associated with urban living. The relevant policy issue is therefore not only whether a dwelling is affordable to acquire, but whether it remains affordable and functional to occupy over time.

2. PMAY-U 2.0 and the Housing Continuum

PMAY-U 2.0 offers a strong platform for this transition because its architecture recognises that urban households do not all need the same tenure or delivery model. Effective from 1st September 2024 for five years, the Mission operates through four verticals: Beneficiary Led Construction (BLC), Affordable Housing in Partnership (AHP), Affordable Rental Housing (ARH) and the Interest Subsidy Scheme (ISS). The guidelines require basic civic amenities and social infrastructure, and place responsibility on States and Union Territories for trunk infrastructure up to project sites (Ministry of Housing and Urban Affairs, 2024). This is an important conceptual step: the programme is not only about providing / constructing dwelling units; it explicitly recognises the infrastructure environment in which those units function.

The rental vertical deserves particular emphasis. India's urban labour markets include circular migrants, industrial workers, construction workers, service employees, working women, students and young households whose location may change before their household settles permanently. For many such groups, secure rental housing near employment can be more useful than an ownership unit far from economic activity. Research on migrant housing supports this link between housing and work. Chadchan et al. (2024), studying migrant industrial workers in the Bengaluru fringe, show that housing preferences are strongly shaped by the relationship between affordability and living conditions. Desai's (2025) study of circular construction migrants in Ahmedabad finds that most surveyed naka workers preferred to live close to their work location; 70 per cent travelled less than 20 minutes to the naka and 71 per cent incurred no travel cost because they walked. These findings caution against treating housing and labour mobility as separate policy domains.

Housing adequacy is also lifecycle-specific. The relative importance of tenure flexibility, proximity to employment, childcare, healthcare, universal accessibility and neighbourhood safety varies across migrants, working households, families with children, senior citizens and persons with disabilities. A diversified housing system can therefore better accommodate changing household circumstances over time.

Housing also needs to be understood as a dynamic household asset rather than a one-time transfer. Harish and Lala (2026) examine housing inequality and asset creation through a finance lens and argue for interconnected policy measures that account for household risk, access to finance and incremental improvement over time. The implication is that Housing for All need not mean Ownership for All at every point in a household's lifecycle. A mature housing ecosystem should support

rental, ownership, incremental construction and housing finance as a continuum, while maintaining security, quality and affordability across tenure types.

For PMAY-U 2.0, the policy opportunity is therefore to add post-occupancy questions to physical monitoring. Are completed units occupied? What share of household income is absorbed by housing and transport together? How long does it take to reach major employment clusters? Are water, sanitation, electricity and public transport reliable? How accessible are schools, primary health care and childcare? Has the location exposed households to new climate or disaster risks? These indicators should not become a cumbersome compliance checklist; they can instead provide a compact evidence base for better site selection and project design.

3. Housing, Land, Infrastructure and Livelihoods as One Urban System

3.1 Well-Located and Serviced Land : In livable cities the supply of well located serviceable land is more of a problem than construction of units. As economic activity concentrates, land values rise around jobs, transport and amenities. Affordable formal housing may then be pushed towards peripheral sites, while workers continue to seek informal accommodation closer to work. The result is a spatial mismatch: formal housing can expand while congestion, long commutes, exclusion and informal living arrangements persist.

3.2 Serviced Density and Integrated City Planning : NITI Aayog's Comprehensive Framework to Promote Affordable Housing emphasises the need for structural reforms spanning land, planning, finance, tenancy and supply (NITI Aayog, 2025). PMAY-U 2.0 itself links continued support to a State/UT affordable housing policy and identifies enabling reforms such as affordable-housing zones, land reservation, additional FAR/TDR, land banks, faster approvals, reduced statutory charges, rental reforms and measures to improve the supply of affordable land (Ministry of Housing and Urban Affairs, 2024). The central principle is straightforward: housing cannot remain affordable if access to developable, serviced and well-located land is structurally constrained.

3.3 City Economic Regions, Mobility and Housing Access : Greater FAR around transit can improve land-use efficiency only where water, sewerage, drainage, pedestrian access, open space and social infrastructure can support additional residents. The policy objective should be serviced density: compact development in locations where infrastructure and mobility systems can sustain it. The Economic Survey 2025-26 calls for a shift from a scheme-compliance mindset to a balance-sheet and outcomes mindset and recommends multi-year city capital-investment plans integrating land use, transport, utilities and economic development. For million-plus cities, it argues for long-horizon City Spatial and Economic Plans containing, among other elements, a transport network plan, a housing supply plan and a land-value-capture framework linked to infrastructure corridors (Ministry of Finance, 2026b).

The Union Budget 2026-27 extends the same logic to the scale of urban agglomerations. It describes cities as engines of growth, innovation and opportunity and proposes mapping City Economic Regions (CERs) around their specific growth drivers. An allocation of Rs 5,000 crore per CER over five years is proposed through challenge-mode, reform-cum-results-based financing. The Budget also proposes public capital expenditure of Rs 12.2 lakh crore in FY 2026-27 and a Rs 100 crore incentive for a single municipal-bond issuance exceeding Rs 1,000 crore, while continuing the existing AMRUT incentive for smaller issuances (Ministry of Finance, 2026a). These provisions reinforce the link between urban growth, infrastructure finance and city-level institutional capacity.

This suggests a reversal in the planning process. Instead of first locating inexpensive land and then asking how residents will reach their workplace, cities should first map housing demand, jobs, public transport, social infrastructure, hazard exposure and trunk-infrastructure capacity. Site options can then be evaluated by their ability to connect households to opportunity. Such an approach does not

imply that every low-income household must live in the city centre; it means that peripheral housing should be justified by connectivity and services rather than by land price alone.

4. Financing Connected Neighbourhoods: UCF, HUDCO and UiWIN

The finance challenge is equally large. The World Bank estimates that India will need about US$840 billion in urban infrastructure investment over the fifteen years to 2036, or roughly US$55 billion per year on average, as the urban population approaches 600 million. It also notes that public sources have historically financed the overwhelming majority of city infrastructure while private financing remains limited (Athar, White, & Goyal, 2022). Housing therefore sits beside - not inside - an already enormous requirement for transport, water, sanitation, roads and other municipal infrastructure.

4.1 UCF: Leveraging Public Support and Market Finance: The Urban Challenge Fund (UCF) is an important institutional response to this financing gap. Announced in Union Budget 2025-26 and operationalised in April 2026, the UCF provides Rs 1 lakh crore in Central Assistance and is intended to catalyse approximately Rs 4 lakh crore of urban investment. Central support is limited to 25 per cent of project cost and at least 50 per cent is expected to be mobilised through municipal bonds, bank loans and PPPs. Of the total Central Assistance, Rs 90,000 crore is earmarked for projects, Rs 5,000 crore for project preparation and capacity building, and Rs 5,000 crore for the Credit Repayment Guarantee Sub-Scheme for eligible cities (Ministry of Finance, 2025; Ministry of Housing and Urban Affairs, 2026a). This architecture matters because it explicitly rewards project bankability and municipal financial capacity rather than treating urban finance only as grant allocation.

The July 2026 clarification on UCF adds another relevant feature: ULBs may designate endorsed private entities as Special Purpose Urban Infrastructure Managers (SPUIMs) for integrated delivery of housing, infrastructure and operations and maintenance in large-scale developments (Ministry of Housing and Urban Affairs, 2026b). Used carefully, this can help overcome the fragmentation that often separates construction of housing from the long-term operation of the neighbourhood around it. The essential safeguard is that integration should strengthen public objectives - affordability, service standards, transparency and accountability - rather than merely bundle contracts.

4.2 HUDCO and UiWIN: Project Preparation and Financial Facilitation : HUDCO's evolving role is particularly relevant to this problem because adequate housing requires both finance and project-development capability. HUDCO's Urban Invest Window (UiWIN), inaugurated in November 2025, is designed as a comprehensive facilitation platform for ULBs facing limited project-

Box 1. Namo Bharat RRTS: mobility as economic infrastructure

The Economic Survey 2025-26 uses the Delhi-Meerut Namo Bharat Regional Rapid Transit System (RRTS) to illustrate how transport investment can reshape the economic geography of an urban region. The 82-km corridor is designed to reduce Delhi-Meerut travel time to under one hour, compared with about 1.5-2 hours by road, and is integrated with metro, rail, bus and paratransit networks.

The Survey also highlights the corridor's relationship with transit-oriented development. TOD zones have been notified in Meerut and Ghaziabad, with large greenfield townships planned around RRTS stations. Early accessibility estimates cited in the Survey indicate sizeable increases in jobs reachable within one hour, including roughly 6.9-7.6 lakh for Meerut and about one lakh for Sarai Kale Khan.

For housing policy, the relevance lies in the linkage rather than the specific corridor model: mobility investment, land-use planning, housing supply and employment access can be considered together. The appropriate density, tenure mix and affordability measures will, however, vary by local land markets, infrastructure capacity and last-mile connectivity.

Source: Economic Survey 2025-26, Chapter 15: Urbanisation (Ministry of Finance, 2026b).

preparation capacity and constrained access to finance. Its stated offerings include project identification and structuring, development of investment-ready pipelines, asset management and monetisation, revenue enhancement, investment facilitation, capacity building and convergence with the UCF (HUDCO, 2025). HUDCO's May 2026 investor presentation explicitly places UiWIN within the CER agenda, with roles spanning affordable housing and township development, mass transit, water and sanitation, green infrastructure, project structuring and resource mobilisation (HUDCO, 2026a).

HUDCO also enters this phase with an expanding balance sheet. Its official Q1 FY 2026-27 release reported loan sanctions of Rs 65,485 crore, up 91 per cent year-on-year; record quarterly disbursements of Rs 16,377 crore; and a loan book of Rs 1,73,123 crore (HUDCO, 2026b). More importantly for the subject of this paper, HUDCO's current activity illustrates the project-preparation role envisaged under UiWIN. On 11 August 2026, its Vijayawada Regional Office invited an Expression of Interest for empanelment of consultancy firms for DPR preparation, technical and financial modelling of urban infrastructure projects and support to ULBs in asset maintenance and monetisation in Andhra Pradesh (HUDCO, 2026c). This is a practical example of the institutional layer required to convert urban needs into finance-ready projects. UiWIN can support project preparation and structuring; HUDCO and other financial institutions can provide debt and blended finance; UCF can improve viability and market access; and PMAY-U 2.0 can support eligible households and housing projects. The relevant policy objective is convergence around complete and serviced neighbourhoods rather than financing individual components in isolation.

The financing principle should therefore be convergence without confusion. The dwelling may draw on PMAY-U 2.0 assistance or household finance; trunk infrastructure may be financed by the State, ULB, UCF or other urban schemes; market-suitable components may use debt, PPPs or municipal bonds; and land-value-capture instruments can recycle part of infrastructure-created value. The project should still have a single spatial and service logic. Financing silos should not become planning silos.

5. Resilient and Technology - Enabled Housing

Housing created today will remain part of India's urban fabric for decades. Adequacy must therefore account for heat,

Box 2. UiWIN and UCF: project preparation as the bridge from urban need to finance

The current urban-finance architecture increasingly places project preparation alongside funding. The Urban Challenge Fund (UCF) provides Rs 1 lakh crore of Central Assistance for transformative, bankable urban projects, with Central support generally limited to 25 per cent of project cost and at least 50 per cent expected from market sources. Its guidelines link support to reforms, measurable outcomes and sustainable operation and maintenance.

HUDCO's Urban Invest Window (UiWIN), inaugurated on 8 November 2025, addresses a related constraint at the ULB level: limited capacity to identify, structure and finance viable projects. HUDCO's Technical Assistance Framework covers project identification and formulation, financial structuring and closure, asset management and monetisation, municipal finance and preparation for UCF appraisal. The framework explicitly describes a movement from stand-alone project financing towards a more integrated city-transformation approach.

Recent activity indicates how this role is being operationalised. In August 2026, HUDCO sought consultancy support for ULBs in Andhra Pradesh for DPR preparation, technical and financial modelling, and asset maintenance and monetisation. The larger point is not that finance alone resolves urban housing constraints; rather, better project preparation can make the interfaces among housing, trunk infrastructure, O&M and long-term finance more explicit and accountable.

Source: MoHUA UCF Guidelines/PIB releases (2026); HUDCO UiWIN and Technical Assistance Framework (2025-26).

flooding, water stress, cyclones, seismic risk and other location-specific hazards. Low-income households are often least able to absorb a climate shock because housing represents a large share of their wealth and because recurring costs - cooling, water, repairs and transport disruptions - can quickly erode affordability. Resilience is consequently not an optional environmental add-on; it is part of lifecycle affordability and household security.

India already has an institutional platform for accelerating better construction. The Technology Sub-Mission under PMAY-U has promoted modern, green and alternative technologies. Through the Global Housing Technology Challenge-India, 54 globally proven sustainable, disaster-resilient and prefabricated technologies were shortlisted and grouped for different geo-climatic contexts; the Light House Project programme has been used to demonstrate such systems at scale (Ministry of Housing and Urban Affairs, 2026d). The next step is to evaluate technologies not only by speed of construction, but by lifecycle performance: thermal comfort, energy and water use, maintainability, local skill requirements, durability, repairability and the total cost borne by residents and housing agencies.

5.1 Inclusion, Women's Agency and Universal Access: Resilience also begins with location. A technically efficient building on a flood-prone site with weak drainage remains a vulnerable housing outcome. Climate and disaster screening should therefore form part of site appraisal alongside infrastructure readiness, accessibility and long-term operation and maintenance. Universal accessibility, women's safety and tenure security are equally relevant to adequacy. PMAY-U's large-scale allotment of houses to women is an important asset-ownership achievement; Women's ownership of housing can be reinforced by neighbourhood conditions that expand effective agency—safe access to public transport, proximate childcare and basic services, and reliable connectivity to employment. Thus, the welfare gain from a housing asset depends not only on ownership, but also on the opportunities that can be accessed from the dwelling. the continuing policy task is to ensure that location, mobility and service design allow that asset to support wider economic and social participation.

6. International Practice: Principles For Adaptation

International experience is used here only as an illustrative source of design principles. The selected cases highlight three dimensions relevant to the Indian discussion: durable affordability, integrated town planning and land-value capture. India's federal structure, land institutions, income distribution and labour mobility differ materially from these jurisdictions; the lessons are therefore adapted selectively rather than treated as directly transferable models.

Table : International housing practices and the principle relevant for India

Practice	What the evidence shows	Design principle	Possible Indian adaptation
Vienna	More than 60% of residents live in city-subsidised or municipal housing; the city reports about 220,000 city-owned and 200,000 co-operative flats (City of Vienna, 2025; City of Vienna, n.d.).	Maintain a durable affordable / rental stock and use land policy for long-horizon affordability.	Expand professionally managed rental and affordable stock; retain strategic public land; link new quarters to transit, services and mixed neighbourhoods.
Singapore HDB	Towns are comprehensively planned for self-sufficiency, with schools, shops, parks and community facilities, and for connectivity through transport and pedestrian networks (Housing & Development Board, n.d.).	Plan the dwelling and the neighbourhood as one system.	Use common spatial evidence for housing, mobility, social infrastructure and employment planning; coordinate agencies rather than copy centralisation.

Practice	What the evidence shows	Design principle	Possible Indian adaptation
Hong Kong MTR - Rail + Property	Development-based land-value capture around transit can help finance infrastructure and support compact TOD (Suzuki et al., 2015).	Recycle part of publicly created land value into infrastructure.	Adapt through land pooling, TDR, development rights, betterment/ LVC tools and transit-oriented affordable-housing requirements where local institutions can support them.

Source: Synthesis from World Bank literature.

7. Bringing Existing Policy Directions Together

The preceding evidence can be organised around five implementation dimensions:

- » lifecycle affordability,
- » accessibility,
- » serviced location,
- » resilience and inclusion,
- » institutional-financial viability.

These dimensions are not proposed as a separate scheme or regulatory framework. They consolidate principles already present in UN housing-adequacy guidance, PMAY-U 2.0, NITI Aayog's affordable-housing recommendations, the Economic Survey's urbanisation analysis and the current urban-financing architecture. Used together, they provide a practical lens for project appraisal and post-occupancy review.

First, lifecycle affordability: eligibility and subsidy design can be considered alongside expected recurring housing, utility, maintenance and transport costs. Rental, ownership and incremental housing form parts of a continuum. Second, accessibility: new housing sites can be assessed against employment opportunities and essential services reachable by affordable public transport within travel-time thresholds appropriate to the city's form and transport network. The emphasis is on evidence-based accessibility rather than a single national benchmark.

Third, serviced location: water, sanitation, drainage, electricity, waste management, digital connectivity, public transport, schools, health facilities, childcare, markets and public space should be treated as part of housing rather than post-construction additions. Fourth, resilience and inclusion: site and building appraisal should reflect relevant climate and disaster risks, universal accessibility, women's safety and tenure security. Fifth, institutional and financial viability: the project should have a credible operating and maintenance arrangement, realistic revenue and subsidy structure and an identified institution responsible for service quality. The technical capacity of ULBs, management of land / assets, its own sources

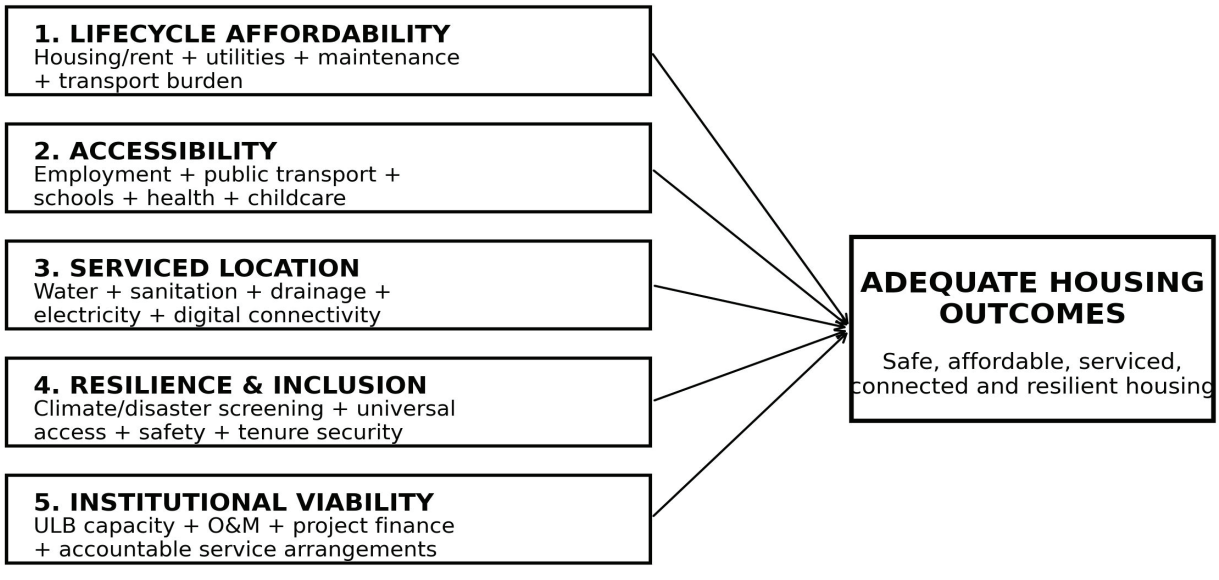


Figure 1: Adequate Housing Outcomes: An Implementation

Table : Illustrative indicators for project appraisal and post-occupancy review

Dimension	Illustrative indicator	What it helps diagnose
Use of housing	Occupancy 12-24 months after completion	Whether supply is translating into actual residence
Living affordability	Housing + transport expenditure relative to household income	Whether low unit cost is offset by high recurring location cost
Employment accessibility	Travel time/cost and jobs reachable by public transport	Whether housing location supports access to livelihoods
Basic services	Continuity/quality of water, sanitation, electricity and waste services	Whether the dwelling functions as serviced housing
Social access	Travel time to school, primary healthcare and childcare	Whether neighbourhood location supports household welfare
Resilience/inclusion	Site risk screening; universal access; safety indicators	Whether the asset is robust and usable by diverse households
Institutional sustainability	O&M arrangement, revenue source and accountable agency	Whether service quality can be maintained after construction

of revenue and access to finance are therefore closely connected to adequate housing outcomes.

Figure 1 brings these dimensions together as an implementation lens. The purpose is not to redefine the PMAY-U 2.0 architecture, but to show how existing policy considerations interact after a house is completed. Persistent non-occupancy, unusually high commuting costs or weak service performance can provide useful feedback for subsequent location and project decisions.

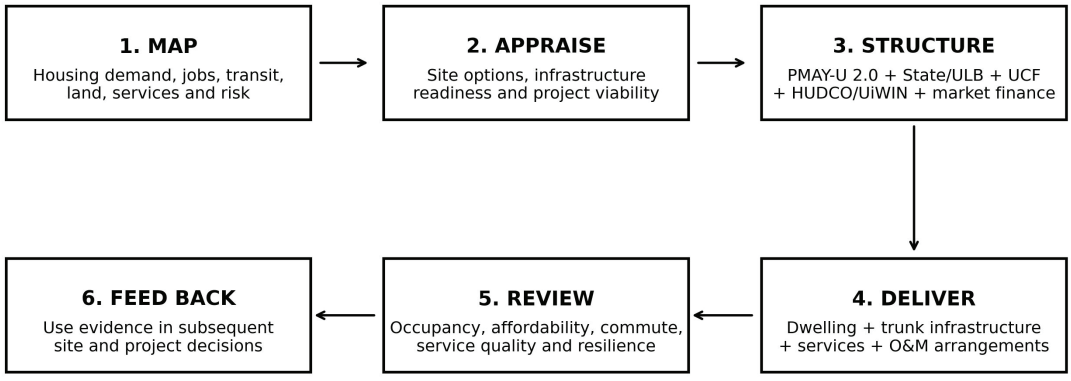
8. From Project Preparation to Post-Occupancy Review

Operationally, the same logic can be incorporated within existing city planning and project-appraisal processes rather than through a new institutional mechanism. When public land is released, PMAY-U/AHP or rental projects are appraised or UCF/UiWIN support is sought, the concerned ULB or development authority can bring together housing, transport, infrastructure and economic-development information in a common project note. The purpose is to ensure that site selection, infrastructure readiness, accessibility, financing and long-term service arrangements are considered at the same stage.

The first layer of such appraisal would map present and projected housing demand by income, household type and tenure requirement. The second would map employment concentrations - industrial estates, logistics nodes, hospitals, educational clusters, commercial centres and major construction zones - along with existing and planned public transport. A third would identify serviced land, infrastructure capacity, social facilities and climate or disaster risk. Overlaying these layers would help identify locations where housing investment is better aligned with existing and planned urban systems.

Project preparation can then incorporate a small number of transparent outcome indicators alongside conventional technical and financial parameters. These may include expected travel time to major employment clusters, transport expenditure, access to primary services, trunk-infrastructure readiness, site-risk screening and the long-term O&M arrangement. Rental projects can track occupancy, tenant turnover and rent-to-income ratios; ownership projects can use post-occupancy surveys to identify whether households have occupied the units and whether commuting or service costs have created unanticipated burdens.

Finance can follow the same integrated logic. Where a housing site is viable but lacks trunk infrastructure, the project package can identify which component is appropriately supported through housing



The sequence consolidates existing planning, housing and financing processes and emphasises post-occupancy learning.

Figure 2: Indicative Implementation Sequence for Adequate Housing Outcomes. Source: Author synthesis of existing planning, housing and financing processes.

assistance, which utility project can be supported through a State funded programme or can be implemented through Central assistance or alternatively can be implemented through issuance of municipal bond or through land-value-captured-finance mechanism or through PPP. UiWIN is relevant at this interface because many cities face constraints in project preparation, structuring and access to finance rather than an absence of funding instruments alone (HUDCO, 2025). Better project preparation also helps distinguish components requiring public support from those capable of supporting market finance.

Finally, post-occupancy evidence can feed into subsequent planning and project cycles. If projects with similar construction costs show materially different occupancy, commute or service outcomes, future site selection can reflect that evidence. This is consistent with the reform-and-results orientation of UCF and CER financing and with the Economic Survey 2025-26 emphasis on integrated spatial-economic planning and outcome-oriented urban institutions. Figure 2 summarises this indicative implementation sequence.

9. Conclusion: From Housing Delivery To Adequate Housing Outcomes

India's urban housing policy has moved from aspiration to large-scale delivery. The next phase is to ensure that the gains from housing delivery are reinforced by location, infrastructure, mobility, resilience and sustainable service arrangements. An adequate house is safe and habitable, but it is also connected: to employment, education, healthcare, public transport and the basic networks through which a city functions. It should remain affordable not only on the date of allotment but through the recurring costs of urban living, and it should be supported by institutions capable of maintaining the surrounding neighbourhood.

The timing is favourable. PMAY-U 2.0 offers multiple tenure and delivery pathways and requires basic infrastructure. The Urban Challenge Fund provides a market-linked, reform-oriented financing architecture and permits integrated delivery arrangements for housing, infrastructure and O&M in large-scale development. Union Budget 2026-27 places City Economic Regions and agglomeration economies within the urban growth agenda. The Economic Survey 2025-26 emphasises integrated spatial-economic planning, own-source revenues and outcome-oriented urban institutions. HUDCO's UiWIN adds a project-preparation and financial-facilitation platform for ULBs. These are existing policy strands; the implementation task is to align them around the functioning of the neighbourhood and the welfare of the household.

Accordingly, the paper's answer is deliberately modest. India does not require a new definition of Housing for All; the existing policy architecture already contains many of the relevant elements. The implementation challenge is to connect them more consistently at the project

and neighbourhood level. The conventional question, 'How many houses have been built?', can therefore be complemented by a second question: 'Do the houses delivered provide sustained access to services, livelihoods and a safe urban environment?' Framed in this manner, Adequate Housing for All becomes an integral part of inclusive urbanisation, labour mobility, resilient household assets and better quality of life.

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Reimagining Karimnagar- ISWM and Dump Yard Remediation and Riverfront Redevelopment under UCF*

- The Karimnagar Municipal Corporation secured in-principle approval for projects worth approximately ₹840 crore under the Urban Challenge Fund.
- Karimnagar currently lacks a scientific waste management system. Waste is dumped uncontrollably, and leachate (the toxic liquid seeping from decomposing garbage) is contaminating the Manair River.
- The ISWM component builds an end-to-end system covering collection, segregation, processing, and scientific disposal.
- The dump yard remediation component addresses the legacy problem by treating and stabilising the existing dump to stop environmental harm.
- Once the dump yard stops polluting the river and its banks, the riverfront can be reclaimed as a public space—combining environmental restoration with civic amenity. This includes approximately 60 kilometres of model roads, stormwater drainage networks, major junction upgrades, footpaths, and a skywalk.
- The expected outcomes are improved public safety, protection of the Manair River from further contamination, better urban mobility, and a significantly improved quality of civic life in Karimnagar.
- The project is a part of Telangana's broader ambition to develop the Warangal-Karimnagar-Khammam urban corridor as a major growth hub, supported by an AI-based Integrated Command and Control Centre approved for Khammam under the same UCF round.

**These projects were approved at the first National Apex Committee meeting of the Urban Challenge Fund, chaired by the Secretary of the Ministry of Housing and Urban Affairs.*

**The funding of all these projects follows the UCF model: Central Government contributes 25% (₹210 crore), the state contributes 25%, and 50% comes as a HUDCO loan.*

URBAN TRANSFORMATION OF HOUSING IN DELHI: STRATEGIC ANALYSIS OF TRANSIT-ORIENTED DEVELOPMENT POLICY 2026 FOR DELHI

SALIL MOHAN

Cities are never static; they continually build and rebuild themselves, regenerating and rejuvenating structures, buildings, and urban spaces to adapt to the ever-changing needs of people, culture, technology, climate, and political and social structures. A city is a dynamic organism with its own brain, heart, lungs, kidneys, skin, and skeleton. "A city's physical structure (the container) must always protect, serve, and optimise the quality of human life (the contained)." (Cerdà #) Nowadays, the content of a city consists not only of people, flora, and fauna, but also of vehicles, machines, and even artificial intelligence. Rampant unplanned urbanisation and the exploitation of relaxations in building regulations and norms in Lal Dora[1] areas in post-Metro Delhi, along with the constant tussle between the 'container' and the 'contained', have contributed to modern problems such as traffic congestion, air pollution, inadequate car-parking spaces, insufficient green spaces, and inequitable access to basic infrastructure services such as potable water and sanitation for all residents of the city. Delhi's population at the time of Independence in 1947 was around 0.9 million, and it grew to almost 1.7 million within the next four years, placing considerable stress on the city's infrastructure and highlighting the need for planned development. Delhi's population today is around 22.5–24 million and is projected to reach 32 million by 2047. At present, Delhi's growth story is experiencing an inflection point as the city transforms from a predominantly two- to four-storey, horizontally spread and segregated urban form of a developing nation into a transit-oriented, high-rise, vibrant, mixed-use vertical city by the time India completes 100 years of Independence in 2047.

Lal Dora (historically designated abadi/village land exempt from standard building regulations).

Keywords: Transit-Oriented Development, Affordable Housing, Fire Safety, Universal Access, Public Transportation, Metro Corridor, Traffic Management, Electric Vehicles.

Introduction and Background to the Housing Stock of Delhi:

Delhi today has a population of 22.5–24 million and is expected to overtake Tokyo to become the world's most populous city by 2035. Most housing development is still up to four storeys high, except for a few mid- and high-rise developments constructed over the last decade. The majority of the current housing stock in prime locations of Delhi is, on average, 40–50 years old. These group housing developments, whether built by DDA or by cooperative

[1] Lal Dora: A historically designated village/abadi area in Delhi where land within the village settlement was traditionally exempted from, or subject to fewer, standard building controls.

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group housing societies, often lack adequate modern measures for fire prevention and safety. These developments also have narrow staircases, lack lifts, and generally do not have basements. Almost all open spaces, including setbacks, common front yards, courtyards, and, in some cases, even common landscaped greens and parks, are either encroached upon by residents or conveniently converted into car-parking spaces to meet the growing demand for private-vehicle parking. Surface parking on both sides of access roads poses a significant hazard to emergency evacuation in the event of a fire. It is often observed that fire trucks and ambulances are unable to reach the site on time because of road blockages. Additionally, there are hardly any provisions for universal accessibility for persons with disabilities. Barrier-free pedestrian movement and the lack of lifts for sick and elderly residents are also common concerns in these housing societies.

Over the last two decades, the consumption of electronic appliances by citizens in urbanised areas of India has increased considerably. Almost every household in Delhi, whether rich, upper-middle-class, middle-class, or among the so-called urban poor, now possesses appliances such as televisions, air conditioners/coolers, refrigerators, geysers, and washing machines. These appliances have been incrementally added to old, unplanned settlements—including urban villages, row houses, group housing, and squatter/slum settlements—while electrical circuits, wiring, and MCB boxes have seldom been upgraded accordingly. Furthermore, following the implementation of the Master Plan of Delhi 2021, a total of 2,538 roads were officially notified for mixed/commercial-use activities. (Municipal Body | Department of Urban Development (UD)). Upgrading the electrical infrastructure in these areas—including transformer capacity, poles, transmission lines, and cabling—has also taken time and is often carried out in an unplanned, uncoordinated, demand-driven manner, relying on ad hoc 'jugaad[2]' solutions.

"At present, the fire services in Delhi operate through 71 functional stations, while 49 of the 120 sanctioned facilities remain pending construction." (Bhandari) "The operational framework of the Delhi Fire Service currently relies on approximately 2,500 personnel distributed across 71 functional stations. However, department officials emphasise that to effectively implement a comprehensive 24-hour shift model, a sanctioned strength of 9,123 personnel is essential for the city's safety infrastructure." (Singh) The acute shortage of trained firefighters and personnel has placed considerable pressure on the workforce and has often increased the time required to reach fire-affected sites and take adequate safety measures.

The majority of Delhi's residents (around 75%) live in unplanned urban agglomerations, including urban villages and slums, because these areas offer relatively affordable housing and good locations with proximity to workplaces. However, these settlements have gradually been converted into four-storey row houses to maximise economic potential through rental income. Consequently, compromises are often made in terms of adequate lighting and ventilation, proper hygiene, and access to green and open spaces, which are important for better mental well-being.

Strategic Analysis: Transit-Oriented Development Policy 2026 for Delhi

The Delhi Master Plan and TOD Policy, since its first notification in 2019, have envisioned compact, mixed-use development along the Delhi Metro, with higher FAR, as a way forward for managing urban sprawl and addressing the need for modern, high-quality housing with improved fire and earthquake safety. The earlier policies of 2019 and 2021 stipulated a minimum plot size of 1 ha (10,000 sq m) within 500 m of Metro stations as an eligibility criterion. This seemed necessary to enable efficient use of buildable area within a plot, optimise basement parking, and provide adequate green space for residents of high-density developments. The policy appeared theoretically well considered; however, on closer inspection, the availability of

[2] Jugaad: An improvised, practical, and often low-cost solution developed by making creative use of locally available resources.

The following is a qualitative comparison of facility parameters across various types of housing stock available in Delhi:

FACILITY PARAMETERS				
	PLOTTED SOCIETIES	**URBAN VILLAGES/ UNAUTHORISED**	**GROUP HOUSING LOW RISE**	**GROUP HOUSING HIGH RISE**
PARKING/DU	✓✓	✓	✓✓	✓✓✓
AFFORDABLE RENT FOR MIGRANTS	✓	✓✓✓	✓✓	✓
GREEN-OPEN SPACE/ PERSON	✓✓	✓	✓✓✓	✓
CIVIC AMENITIES	✓✓✓	✓✓	✓✓	✓✓✓
LIFT ACCESS & FIRE SAFETY PROVISIONS	✓✓	✓	✓	✓✓✓
OVERALL LIVABILITY	✓✓	✓	✓✓	✓✓

plots larger than 10,000 sq m near Metro stations may be difficult to find in a city such as Delhi. Even where such plots are available, they often involve litigation, title issues, or landlocked conditions. Obtaining timely clearances in such cases can be an ordeal and is seldom attractive to developers.

Therefore, the move by MoHUA to reduce the minimum plot size to 2,000 sq m in the newly notified TOD Policy 2026 is welcome and could open up a number of options for landowners and developers to maximise the potential for optimum land utilisation and proximity to transit corridors. The following is an analysis of various parameters of the policy under reference:

i) Minimum Plot Size

As per Clause 20.1.2 of the policy under reference, a minimum plot area of 2,000 sq m is set as the eligibility criterion for participation in the TOD Policy. This has been done to make high density vertical construction practical and accentuate affordable housing supply near transit networks. However there is alternate point of view that while a mixed-use housing block with a commercial podium and residential floors above still appears feasible. It may be a compromise in usable-area efficiency (the carpet-area-to-built-up-area ratio), given the extant building bye-laws.

ii) Setbacks

As per Clause 20.3.6 of the policy under reference:

"For plot sizes from 2000 sq.m. upto 10,000 sq.m. – the Minimum Front Setback: 9.0m, Rear Setback: 6.0m and Side Setbacks: 6.0m" have been fixed at 9.0 m, 6.0 m and 6.0 m respectively which for a smaller plot does not seem practicable.

Setbacks are essential for adequate light and ventilation, fire-tender access, circulation, and building safety. However, on smaller plots of 2,000–5,000 sq m with limited frontage and greater depth, prescribed setbacks, basement ramps, a 9 m fire-tender access, and 9 m/12 m turning radii can significantly constrain basement planning. This may limit the efficient provision of basement parking and services.

It is suggested that, to improve the available buildable envelope

and the financial feasibility of projects, policymakers consider built-to-edge typologies for TOD buildings on plots smaller than 10,000 sq m by eliminating front setbacks for such plot size. This would not only create more space for ground coverage but also reduce circulation space. Built-to-edge developments can, in turn optimise passive surveillance for improved safety, and strengthen familiarity within neighbourhoods.

iii) Permissible Mix of Uses for Each Plot within the TOD Zone

As per Clause 20.3.4.2.1 of the policy under reference:

"A minimum 65% of the total permissible FAR shall be earmarked for Residential use of Dwelling Unit size less than 100 sq.m. of built-up area including Guest House/Studio Apartments."

The policy has emphasised the need to ensure higher density in the proposed development by stipulating that 65% of the developed area to be allocated for residential use and residential units to be of 100 sq m or less in built-up area. However, based on practical experience in high-rise construction, it is observed that common-area loading in high-rise buildings is often around 45–50% due to the greater size of structural members such as columns and shear walls, as well as mandatory provisions for minimum staircase widths, common passages, lift lobbies, balconies, and other requirements under the relevant building codes.

High-rise development, whether in tower or double-loaded-corridor form, generally has a higher common-area loading than low-rise walk-up housing of up to four storeys, where loading can be contained within 25–30%. In high-rise housing, common areas can approach 0.8–1.0 sq m for every 1 sq m of habitable area, reducing the effective dwelling-unit size. Consequently, a policy threshold of less than 100 sq m FAR area may translate into a carpet area of only about 55 sq m, typically accommodating a compact 2-BHK with limited flexibility. Such units may have weaker market acceptance and adaptability to changing household needs.

Under Clause 8.10 of Delhi's Unified Building Bye-Laws, 2016, common passages, lift lobbies, staircases and balconies are exempt from FAR computation. Accordingly, excluding these non-habitable components from the FAR calculation could enable dwelling units of around 70 sq m carpet area within the specified 65% residential FAR. This would facilitate more functional 2-BHK, 2.5-BHK and compact 3-BHK units, potentially improving the attractiveness of TOD areas and enhancing long-term adaptability and housing choice.

iv) Parking

As per Clause 20.3.8 of the policy under reference:

"TOD Plot shall provide 1 Equivalent Car Space (ECS) per100 sq.m. of FAR area."

The ECS norms for parking in the Master Plan are often misunderstood by citizens and, in some cases, inadequately interpreted in practice. Theoretical calculations based on overall basement area are often presented at the time of building-plan approvals, or the required ECS is achieved by providing a greater number of two-wheeler spaces than the actual demand may warrant. Post-occupancy parking demand often shifts towards car parking rather than two-wheeler parking. Inadequate designated parking can result in on-street parking and encroachment of open or green areas, adversely affecting circulation, public realm and overall quality of life.

The 500 m TOD influence zone along Metro corridors is likely to experience sustained land-value appreciation, making housing within the ₹1 crore affordability threshold increasingly challenging.

Considering that the supporting infrastructure for TOD is still evolving, it is recommended that one car-parking space per dwelling unit be provided for units exceeding 50 sq m carpet area. For units below 50 sq m, parking provision for at least 50% of the units may be mandated, recognising that some residents may depend on cars or light commercial vehicles for livelihoods, including taxi services, street vending and small-scale goods transport.

The following modification is suggested:

"At least one dedicated car parking for all Dwelling Units

having carpet area more than 50sqm to be provided. For houses having carpet area less than 50sqm 1ECS per 100sqm of FAR to be provided, ensuring at least 50% of parking space so generated has dedicated Car Parking spaces."

Challenges Ahead for TOD Projects

i. Private Vehicle Ownership, Traffic Management, and Possible Solutions

"The total number of motor vehicles on roads in Delhi till 2025-26 is 8.761 million, showing an increase by 7.93 per cent compared to 2024-25. The number of vehicles per thousand population was 522 as of March 19, 2026. The total number of vehicles registered till 2025-26 was around 8.761 million, increasing from 8.118 million registered in the previous financial year."

High-density development brings more cars onto already-stressed approach roads, thereby further degrading the level of services. Traffic analyses often propose adding new roads or connections to divert and manage traffic. However, this may not be feasible for all projects because potential solutions require coordination among multiple private and government stakeholders, making it difficult to execute them within project timelines. In practical experience, it is often observed that even different government institutions and PSUs are reluctant to make portions of their unused land banks available for new access roads, diversions, and related infrastructure.

The current reliance on private vehicles and the lack of affordable car-parking infrastructure within the city may compel new TOD projects to provide more parking space within developments, thereby increasing the cost of residential unit. The TOD concept focuses on maximising the use of public transport but till that equilibrium is achieved, there is an opportunity for Indian start-ups to develop apps and models for car sharing using small electric cars (less than 2.5 m in length). Studies show that many people who drive to work travel alone in their personal cars. This increases traffic on roads and reduces the efficiency of parking-space utilisation at homes and workplaces. Electric vehicles have lower operating costs than petrol, CNG, or diesel vehicles. India generates more electricity than its current demand, and greater adoption of EVs could reduce reliance on crude-oil imports. New cars are also entering international markets with integrated solar-roof systems and self-charging capabilities, offering another opportunity to harness the abundant solar energy available across the Indian subcontinent.

ii) Price and Affordability of Houses in TOD Zones

The long-term effectiveness of Transit-Oriented Development (TOD) will depend on its ability to deliver housing that is accessible to a diverse socio-economic population, rather than facilitating predominantly investment-driven real-estate development. Given the locational premium associated with high-accessibility transit corridors, appropriate affordability safeguards may be required to prevent excessive escalation in residential prices and the displacement or exclusion of lower- and middle-income households.

A price-regulation or cost-capping framework may therefore be considered for a specified proportion of residential units within TOD developments. Such regulation should be structured without adversely affecting project viability. The financial impact on developers could be partly offset through appropriate planning and fiscal incentives, including rationalisation of development-related charges, taxation incentives, or enhanced commercial development potential, subject to detailed financial feasibility assessment.

In addition, approximately 20% of the residential inventory within TOD zones may be considered for Affordable Rental Housing (ARH) under medium-term lease arrangements of approximately 5–7 years. Such housing could primarily cater to migrant workers, students, and early-career professionals, particularly those in the 18–30 age group, who require affordable accommodation during the initial stages of education and employment in Delhi.

Conclusion

The proposed TOD framework under the Delhi Master Plan provides a strategic opportunity to restructure urban growth around mass-transit corridors

through compact, mixed-use and higher-density development. Concentrating development within the designated TOD influence zones can support more efficient utilisation of land and infrastructure, facilitate urban regeneration, improve accessibility, and strengthen the role of public transport in shaping Delhi's future growth.

However, the success of TOD will depend less on policy notification and more on effective implementation, infrastructure readiness, institutional coordination and continuous monitoring. Increased development intensity must be matched by commensurate augmentation of water supply, sewerage, drainage, power, social infrastructure, public spaces and multimodal transport systems. Housing affordability and rental housing provisions should also be integrated into TOD implementation to ensure that higher accessibility does not translate into exclusion or displacement of lower- and middle-income households.

TOD should therefore be implemented as an integrated spatial-development strategy rather than merely a mechanism for increasing development potential or built-up density. Phased development linked to infrastructure capacity, protection of environmental assets, water-sensitive planning, pedestrian- and cycle-oriented mobility, and effective land-use and transport integration will be essential to achieve the intended outcomes.

A sustained institutional mechanism for coordination among the Government of India, Government of the National Capital Territory of Delhi, Delhi Development Authority, urban local bodies, transport agencies, and the neighbouring states of Uttar Pradesh and Haryana will be critical, particularly for addressing issues that transcend administrative boundaries.

Ultimately, the objective should be to leverage TOD to create a compact, connected, inclusive, resource-efficient and climate-resilient Delhi, where access to housing, employment, education, public transport and essential urban services is improved without compromising environmental sustainability or quality of life. The success of the policy should therefore be measured not only by the quantum of development generated along transit corridors, but by its contribution to better accessibility, housing affordability, infrastructure efficiency, sustainable mobility and overall urban liveability.

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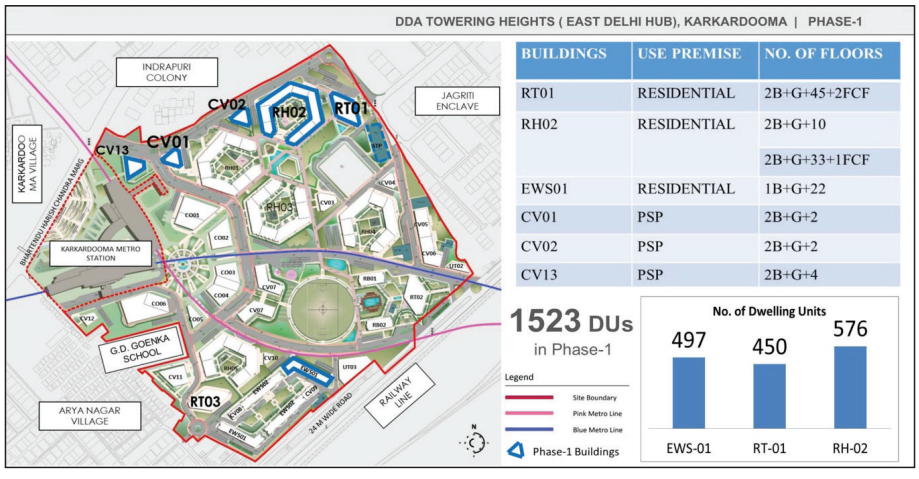
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BUILDINGS	USE PREMISE	NO. OF FLOORS
RT01	RESIDENTIAL	2B+G+45+2FCF
RH02	RESIDENTIAL	2B+G+10
		2B+G+33+1FCF
EWS01	RESIDENTIAL	1B+G+22
CV01	PSP	2B+G+2
CV02	PSP	2B+G+2
CV13	PSP	2B+G+4

Layout of Karkardooma Transit-Oriented Development (TOD) project, officially known as DDA Towering Heights

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Karkardooma TOD Project: Seamless multimodal connectivity with direct access to the Blue and Pink Metro Lines through elevated pedestrian walkways.



Initial Phase ("Towering Heights"): 1,026 premium 2-BHK apartments introduced as part of the Karkardooma TOD development.





EWS Housing at Karkardooma TOD: Promoting inclusive and affordable housing as an integral component of India's landmark Transit-Oriented Development initiative.

RENTAL HOUSING AS A CATALYST FOR AFFORDABLE URBAN ECOSYSTEMS: COMPARATIVE INSIGHTS FROM INDIA AND THE US

DR. SHALINI ROHILLA PANIGRAHI

Rapid global urbanization has created significant imbalances in metropolitan housing markets, making homeownership increasingly unaffordable for lower- and middle-income households. Historically, public housing policies have placed strong emphasis on homeownership as a means of wealth accumulation and residential stability. This paper examines the shift towards formal rental housing as a key instrument for addressing urban housing affordability. It considers structural urban changes, high-density land-use optimization, and policy interventions such as India's Affordable Rental Housing Complexes (ARHCs), and compares the ARHC framework with the United States' Low-Income Housing Tax Credit (LIHTC) programme. The analysis argues that a robust and institutionalized rental housing market is essential for limiting the expansion of informal settlements, supporting urban labour markets, and promoting long-term socioeconomic mobility.

Introduction

Housing and Its Importance:

Housing is one of the fundamental physical needs of human beings, providing safety, security, privacy, self-esteem, social status, identity, satisfaction, and a sense of achievement. It is a foundation for human development and an important determinant of quality of life. A house is also a social aspiration that people strive to achieve. Shelter has traditionally been accorded importance alongside food and clothing. Although the terms shelter and housing are often used interchangeably, housing extends beyond the physical structure of a dwelling to include basic services, infrastructure, and amenities that are integral to a dignified living environment. There is often little difference between the basic housing requirements of the rural and urban poor. Standard housing should be safe, sanitary, and comfortable. Housing is therefore not merely a commodity required for living and livelihood; it is also an important instrument of human development and social transformation, contributing to equality, social justice, and freedom from discrimination and deprivation. Adequate housing can enhance individual well-being and contribute to stronger democratic institutions and social processes. The quality of the surrounding environment is equally important, making it essential to provide healthy and well-serviced neighbourhoods. Housing is consequently an important indicator of a household's standard of living. The United Nations General Assembly's Resolution 217 A recognizes the right to an adequate standard of living, including housing, health, food, clothing, medical care, and necessary social services.

1.1. As per Census 2011, about 45 crore people migrated

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to different parts of the country in search of employment opportunities. Urban migrants—including workers in manufacturing, domestic and commercial establishments, healthcare, hospitality, construction, and other service sectors—play an important role in the urban economy. Many migrate from rural areas and small towns in search of better employment opportunities. To maximize savings and support families in their places of origin, migrants often compromise on living conditions and live in slums, informal or unauthorized settlements, and peri-urban areas to reduce rental expenditure. Long and unsafe commutes by walking or cycling can further increase physical and psychological stress and contribute to health problems arising from inadequate rest, recuperation, and hygiene.

1.2. The COVID-19 pandemic resulted in large-scale reverse migration of workers and the urban poor across the country. This mass exodus from cities highlighted the vulnerability of migrant populations and raised concerns regarding the continuity of urban economic activity. It also brought the housing needs of migrants and economically vulnerable groups to the forefront of policy attention.

1.3. Housing is one of the basic necessities of life and is recognized within the Directive Principles of State Policy enshrined in the Constitution of India. A significant proportion of urban migrants may already own a house or parcel of land in their place of domicile and may therefore have limited interest in purchasing a home in the city. Instead, many seek safe, affordable, and well-located rental accommodation that enables them to minimize living costs and remain close to employment opportunities. Provision of rental housing near workplaces can improve living conditions, reduce commuting burdens, and potentially enhance productivity. Promoting affordable rental housing is therefore an important component of inclusive urban development.

1.4. A substantial amount of vacant land remains underutilized by industries, trade associations, manufacturing companies, educational and health institutions, development authorities, housing boards, Central and State public sector undertakings (PSUs), and other entities. However, identifying suitable land close to employment and educational centres remains a major challenge. Entities possessing such land therefore have an opportunity to develop Affordable Rental Housing Complexes (ARHCs). In many cases, local planning and Development Control Regulations (DCRs) restrict the use of available land for housing. An enabling policy ecosystem, supported by appropriate incentives from the Government of India, States/UTs, Urban Local Bodies (ULBs), and parastatals, can help unlock this potential.

1.5. Vacant houses constructed for Economically Weaker Section (EWS) and Low Income Group (LIG) households under Central Government-funded schemes can potentially be utilized as rental housing for urban migrants and economically vulnerable groups. Similarly, States/UTs, ULBs, and parastatals that have developed housing complexes from their own resources may consider converting vacant housing stock into affordable rental housing.

1.6. Following the COVID-19 pandemic, the Government of India has sought to promote economic activity under the broader vision of "AatmaNirbhar Bharat". In this context, the Ministry of Housing and Urban Affairs (MoHUA), in consultation with concerned Central Ministries, States/UTs, and public- and private-sector stakeholders, initiated the Affordable Rental Housing Complexes (ARHCs) programme for urban migrants and economically vulnerable groups. The initiative seeks to improve living conditions and reduce dependence on slums and informal settlements.

1.7. By 2050, nearly seven out of ten people globally are projected to live in cities. This unprecedented scale of urbanization is placing increasing pressure on metropolitan land, infrastructure, and real-estate markets. As demand continues to outpace supply in many cities, housing costs have risen substantially, intensifying affordability pressures.

For decades, housing policy has focused heavily on subsidized homeownership. While well-intentioned, such programmes can require substantial public subsidies and may not adequately address the immediate needs of transient, low-income, and newly arrived migrant populations. A strong emphasis on homeownership can also overlook the needs of a geographically mobile workforce. Consequently, formal rental housing is

emerging as an important policy instrument for inclusive and sustainable urban development.

This paper examines why structured rental markets are important to sustainable urban planning, identifies the operational challenges faced by developers, and reviews international policy frameworks that use public-private partnerships and financial incentives to expand the supply of affordable rental housing.

2. The Structural Mechanics of Rental Affordability

A healthy housing ecosystem cannot rely on a single tenure type. Rental housing serves a specific economic and demographic function that purchasing schemes cannot replicate.

2.1 Catering to Migrant and Transient Workforces

Economic growth in metropolitan areas relies closely on service sectors, retail, logistics, and manufacturing—industries heavily staffed by migrant labour. These workers typically require short-to-medium-term urban residency and do not have the capital or desire to secure long-term residential mortgages. Informal rentals often step in where formal options fail, leading to overcrowding and substandard conditions. Formalized rental markets provide safe, regulated, and affordable units that keep the essential urban workforce integrated into the formal economy.

2.2 Mitigation of Slum Proliferation

When formal housing markets fail to supply units aligned with low-income wage brackets, informal settlements or slums inevitably expand. Slums present massive public challenges regarding sanitation, safety, and legal rights. By developing institutional, low-cost rental units close to industrial or commercial centers, municipalities provide a viable legal alternative to unauthorized colonies, facilitating more equitable city planning.

2.3 Optimization of Urban Density and Land Use

In high-density metros, land is finite. Single-family ownership models promote sprawling development, which strains public transport and utility networks. High-density, multi-family rental complexes maximize the efficiency of urban land, allowing hundreds of households to utilize shared infrastructure efficiently, minimizing per-unit development overheads.

3. Comparative Global Policy Frameworks

Transforming rentals into a core pillar of public policy requires deliberate regulatory and financial architecture. Different nations have approached this using distinct public-private investment frameworks.

3.1 India's Affordable Rental Housing Complexes (ARHCs)

Launched as a sub-scheme under the Pradhan Mantri Awas Yojana - Urban (PMAY-U), the ARHC initiative addresses the needs of urban migrants and industrial workers. The policy employs a dual-pronged strategy:

4.0 Model Options

Model 1: Converting existing vacant, government-funded housing complexes into ARHCs through Public-Private Partnerships (PPP) or by public agencies under long-term concession agreements.

MODEL 1 :

Utilizing Existing Government Funded Vacant Houses

a. A model RFP will be prepared and circulated by MoHUA to State/UTs. States/ UTs may customize and publish the RFP as per their requirements for selection of Concessionaire through State/UT e-Procurement Portal/ Government of India e-procurement portal.

b. Concessionaire will be selected through transparent bidding process, with rent and period of concession as fixed parameters and bidding on Highest Positive Premium to ULBs or Lowest Negative Premium through Viability Gap Funding (VGF).

c. Concessionaire will Repair/ Retrofit the houses/building and fill up civic infrastructure gaps like water, sewer/ septage, sanitation, internal road etc. to make it livable. Thereafter, these will be Developed as ARHCs and Operate for the concession period i.e. 25 years. Concessionaire will Transfer these complexes to the ULBs after 25 years. Thereafter, ULB may restart next cycle like earlier or operate the complexes on their own.

d. Necessary Social Infrastructure (e.g. health centre, anganwadi, creche, community centre etc.) and Neighbourhood Commercial (e.g. street shops, grocery store, medical shops, milk booths, ATM etc.) will also be developed by Concessionaire as per the requirement.

e. Initial affordable rent of ARHCs will be fixed by the

local authority based on a local survey, prior to the issuance of Request for Proposal (RFP) by ULBs. Subsequently, rent will be enhanced biennially by 8%, subject to maximum increase of 20% in aggregate, over a period of 5 years, effective from the date of signing the contract. Same mechanism shall be followed over the entire concession period i.e. 25 years.

f. Following incentives to be extended by Government of India and States/UTs/ ULBs to

Entities to develop and operate ARHCs:

Central Government

1) Exemption of Income Tax on any profits and gains derived from the operation of ARHCs on the similar lines as that for 'Affordable Housing' under section 80-IBA of Income Tax Act, 1961.

2) Exemption of GST on any profits and gains derived from operation of ARHCs at par with rental services of residential premises, vide Notification number 12 of 2017- Central Tax (Rate) dated 28 June 2017.

3) Concessionaire shall receive project finance/loan at lower interest rate through concessional window under Affordable Housing Fund (AHF) by Housing Finance Companies (HFCs) and Priority Sector Lending (PSL) by Commercial Banks, upon inclusion of ARHCs in Harmonized Master List (HML) on the same lines of 'Affordable Housing'.

State/UT/ULBs/

1) Single window system for approval of design/ drawings and other statutory approvals within 30 days, after which parastatals proposed project will be considered as deemed approved for construction.

2) Trunk infrastructure facilities like road, sanitation services, water, sewerage/ septage, drainage etc. to be provided.

3) Municipal services such as water supply, electricity, house/ property tax, sewerage/ septage charge etc. to be levied at par with the residential projects. g. States/UTs/ ULBs/ parastatals which utilise their vacant EWS/ LIG housing complexes developed from own funds by converting them into ARHCs under PPP mode through Concessionaire or by public agencies, will be eligible for similar incentives/ benefits as above.

Model 2: Incentivizing private or public entities to construct, operate, and maintain ARHCs on their own vacant land through special zoning provisions, tax exemptions, and concessional project financing.

Construction, Operation and Maintenance of ARHCs by Private/Public Entities on their own available vacant land

a) MoHUA will issue an Expression of Interest (EoI), under which eligible entities will submit applications with the required documents through the dedicated ARHC web portal. The applications will be examined by the concerned States/UTs/ULBs for shortlisting in accordance with the eligibility criteria specified in the EoI document.

b) Shortlisted entities shall submit a Detailed Project Report (DPR) to the respective ULBs for further processing and shall upload a copy of the DPR on the ARHC website.

c) Entities shall construct, operate, and maintain ARHCs on their available vacant land for a period of 25 years.

d) ARHCs developed under this model shall comprise a mix of dwelling units (DUs) of up to 30/60 sq m carpet area each and dormitories with 4/6 beds, with up to 10 sq m carpet area per bed, including common facilities. The mix may vary according to local requirements. Minimum dwelling-unit and dormitory standards shall conform to the National Building Code (NBC) and applicable State/local authority norms.

e) Each ARHC project shall comprise at least 40 dwelling units (single- or double-bedroom) or an equivalent number of dormitory beds. One single-bedroom unit of up to 30 sq m carpet area is considered equivalent to three dormitory beds. Entities may adopt any appropriate mix of single-bedroom units, double-bedroom units, and dormitories. However, to ensure that the complexes serve urban migrants and EWS/LIG households, the number of double-bedroom units in any project shall not exceed one-third (33%) of the total dwelling units.

f) The initial affordable rent for ARHCs will be fixed by the entity on the basis of a local survey. Thereafter, rent may be increased biennially by 8%, subject to a maximum aggregate increase of 20% over a five-year period, effective from the date of signing the contract. The same mechanism shall apply throughout the 25-year concession period.

g) An entity may partner or associate with other entities for land arrangements, project

financing, project management, and other activities required for development of ARHCs.

h) To support sustained occupancy and revenue, an entity may enter into arrangements with other entities or organizations to facilitate access by migrant workers and the urban poor, including through aggregators. Rent may be remitted by such agencies through direct deductions from tenants' salaries, fees, or other remuneration, subject to applicable rules.

i) Following incentives to be extended by Government of India and States/UTs/ ULBs to Entities to develop and operate ARHCs:

Central Govt.

1) Exemption of Income Tax on any profits and gains derived from the operation of ARHCs on the similar lines as that for 'Affordable Housing' under section 80-IBA of Income Tax Act, 1961.

2) Exemption of GST on any profits and gains derived from operation of ARHCs at par with rental services of residential premises, vide Notification number 12 of 2017- Central Tax (Rate) dated 28 June 2017.

3) Entity shall receive project finance/loan at lower interest rate through concessional window under Affordable Housing Fund (AHF) by Housing Finance Companies (HFCs) and Priority Sector Lending (PSL) by Commercial Banks, upon inclusion of ARHCs in Harmonized Master List (HML) on the same lines of 'Affordable Housing'.

4) TIG will be provided for adopting identified innovative technologies to expedite construction and delivery of ARHCs.

State/UT/ ULBs/ parastatals

1) Provision for "Use Permission" changes for houses for the vacant land.

2) 50% additional Floor Area Ratio (FAR)/ Floor Space Index (FSI) free of cost through necessary changes in the DCR.

3) Single window system for approval of design/ drawings and other statutory approvals within 30 days, after which proposed project will be considered as deemed approved for construction.

4) Trunk infrastructure facilities like road, sanitation services, water, sewerage/ septage, drainage etc. to be provided.

5) Municipal services such as water supply, electricity, house/ property tax, sewerage/ septage charge etc. to be levied at par with the residential projects.

5. Monitoring and Evaluation

a) The ARHC initiative has been introduced to address the emerging requirements for rental housing among urban migrants within the broader framework of PMAY-U. Third-party or independent evaluation shall be undertaken in accordance with the ARHC operational guidelines.

b) Monitoring and evaluation of the scheme shall be undertaken by MoHUA and the concerned State/UT governments, which shall take appropriate measures to ensure smooth and time-bound implementation.

c) A mid-term evaluation of the scheme shall be undertaken by MoHUA in accordance with the applicable guidelines for appraisal of Central Sector/ Centrally Sponsored schemes. In addition, a social audit of the scheme shall be conducted through a third party selected by MoHUA.

d) MoHUA shall develop a dedicated online ARHC portal for documentation, knowledge sharing, and management at the national level. States, ULBs, and parastatals shall upload details of relevant projects on the portal.

e) The concerned ULBs and parastatals shall be responsible for the overall management of ARHC projects, including maintaining a list of projects under the scheme.

f) The concessionaire/entity shall submit a Project Compliance Report to the concerned ULB on a quarterly basis for monitoring implementation in accordance with the scheme guidelines.

6. Expected Benefits/ Results

a) Urban migrants and economically vulnerable households will have access to a better and more dignified living environment through the creation of ARHCs near workplaces.

b) The scheme will provide an enabling framework for States/ UTs to convert vacant housing stock constructed from their own funds into ARHCs.

c) Vacant housing stock funded by the Central Government, State Governments, and UT administrations can be converted into ARHCs for productive use.

d) Industries can benefit from a more stable and accessible workforce.

e) Improved living conditions for migrant workers and

economically vulnerable households can contribute to better health, productivity, and economic outcomes.

f) The initiative supports the objective of "Housing for All" by catering to the rental housing needs of urban migrants and economically vulnerable groups who may not seek homeownership.

g) The framework can create a conducive environment for entities to develop ARHCs on their available vacant land, encouraging investment and entrepreneurship in the rental housing sector.

h) It can also enable public and private entities to make vacant land available for ARHC development, thereby supporting additional investment in rental housing.

i) Promoting affordable rental housing can strengthen inclusive urban development by providing livable housing at reasonable rents and reducing the likelihood of future unplanned expansion of slums and informal settlements.

j) Promoting affordable rental housing will ensure inclusive urban development by providing livable housing options to the urban migrants/ poor at reasonable rent and encourage prevention of future unplanned growth of slums.

5.0. Comparative Analysis of Global Institutional Frameworks

To assess the operationalization of rental housing policies, this paper examines two national frameworks designed to expand the supply of affordable rental housing.

5.1 Low-Income Housing Tax Credit (LIHTC), United States

The LIHTC is the primary federal program in the United States used to subsidize the creation and rehabilitation of affordable rental housing.

- **Target Audience:** It is designed to benefit low-to-moderate-income families whose earnings match specific regional median thresholds (typically calculated relative to the Area Median Income, or AMI).
- **Incentive Mechanism:** Instead of direct government construction, the program issues federal tax credits to private developers. Developers typically sell these credits to private investors to raise equity for their projects, lowering the amount of debt they need to take on.
- **Requirements:** In exchange for the subsidy, developers must agree to keep rental rates restricted and affordable for low-income tenants for an extended period, commonly 30 years or longer.
- **Outcome:** This structure successfully leverages private equity to expand the nation's long-term affordable housing inventory.

5.2.1 What is the purpose of the LIHTC programme?

The Low-Income Housing Tax Credit (LIHTC) programme is a federal policy instrument designed to encourage private-sector investment in the development, rehabilitation, and preservation of affordable housing. Established under the Tax Reform Act of 1986 and codified under Section 42 of the Internal Revenue Code, the programme has undergone several modifications. Since its inception, nearly 3 million units have been placed in service, and LIHTC remains a major federal mechanism for expanding the supply of affordable rental housing for low- and moderate-income households. Low-Income Housing Tax Credit (LIHTC) programgeneral shortage of housing units available

5.2.3 How do developers and investors benefit from LIHTC?

Developers generally do not retain the tax credits. Instead, the credits are sold to investors in exchange for equity, which reduces the amount of debt required to finance the project and helps make affordable housing development financially viable. The equity can offset development costs and the reduced rental income associated with affordability requirements. LIHTC projects may also include a developer fee, subject to applicable programme and market requirements.

Section 2: Type of Tax Credits, Allocation and Compliance

What type of tax credits can be requested?

There are two types of tax credits under the LIHTC program:

- 9% tax credits for new construction or substantial rehabilitation projects
- 4% tax credits for the acquisition of properties singled out for rehabilitation or for projects funded using tax-exempt bonds

It is possible to combine the two: for example, an older property can be acquired with 4% tax credits and then substantially rehabilitated with

9% tax credits. Where there is an extreme shortage of affordable rental housing, individual state HFAs may even allocate 'extra', enhanced tax credits to qualified projects.

The federal government grants tax credits to state and territorial governments which hand over the task of allocating the credits to their respective housing agencies (various housing finance authorities or HFAs). The tax credits are awarded to selected property developers based on their project proposals and via a competitive LIHTC application process. Developers generally sell these credits to institutional investors (typically banks) in exchange for equity funding. The banks who take up ownership in these developments have to ensure that the properties are occupied by the eligible low and moderate income families for the tax allocation period (typically 10 to 12 years).

The cash that equity investors inject into the project is used along with other soft debt (usually) such as HOME Investment Partnerships or the national Housing Trust Fund to subsidize the creation of affordable housing. This does not cover the cost of development, but the infusion of equity reduces the debt, a developer borrows from commercial banks, Fannie, Freddie, etc as a construction loan. The bulk of the tax credit equity installment is used to pay down the large construction loan to a long term mortgage once the housing project is built and occupied.

5.2.4 Do LIHTC projects need to remain affordable?

To qualify for LIHTC, rents for designated set-aside units must satisfy applicable income and rent tests during the compliance period; otherwise, tax credits may be subject to recapture. Following the initial 15-year compliance period, affordability is generally maintained through an extended-use period, commonly resulting in an affordability commitment of at least 30 years, although some jurisdictions require longer periods.

Monitoring compliance means to regularly check that only targeted income-eligible households live in the set-aside units and they pay compatible rents. There are further regulations on housing quality and the availability of basic amenities.In states where the 30 year period is not mandated, the property owner can decide to convert the units to market-rate rentals after the 15-year compliance period is over, but needs to first send a request to the HFA. If the HFA wants to make sure the rents stay at affordable rates, they have one year to find a buyer (called a 'preservation purchaser') who is willing to keep the rents low for another 15 years. If there aren't any buyers, the owner can adjust the rents to market-rate, but the original LIHTC eligible tenants can stay for another 3 years and receive rent vouchers to be able to pay the higher rents.

Step 1: Understanding the State QAP

The first step is to read and understand the Qualified Allocation Plan (QAP) for the State you are applying to. The QAP is released anew each year, by each state's affordable housing agency. It typically consists of the allocation criteria for LIHTC (the threshold eligibility for developers) for that year. It also states the acceptable combinations for the mix of affordable housing and regular housing units that developers can pick in their application.

The State HFA also has a duty to measure compliance of your property with the regulations set aside in the QAP. Therefore, you can find the minimum operation standards that your project will need to meet, to remain compliant with the regulations. You can find the latest QAP for your State HFA on their website. It is very important for all developers to carefully study and understand the QAP. It's meant to be a guide for you as a developer, to navigate the LIHTC application process of that state, for that year.

Step 2: Assessing your project's eligibility for LIHTC application

A typical affordable housing project is a multi-story apartment complex with managed rental units, but LIHTC is not limited to that (single-family units, townhouses, and duplexes are also eligible, although rare). In the majority of affordable housing projects, all the units are set aside to be rented out at affordable rates, but it is possible to have mixed-income or mixed-use projects under the LIHTC program. The primary target of the program are low- and moderate-income families, but it also supports the construction and rehabilitation of senior housing, homes for people with special needs and permanent supporting housing for the homeless.

A housing unit is considered affordable if the occupants are

spending no more than 30% of their combined household income for housing (rent and utilities). To be eligible for LIHTC, the developer must agree to meet a gross rent test and an income test for tenants.

To pass the income test, the units are set aside for tenants whose household income (as adjusted for family size) is below a certain percentage of the area median income (AMI). The units need to be allocated in one of these three ways:

- Minimum 20% of the units are set aside for tenants with maximum 50% AMI
- Minimum 40% of the units are set aside for tenants with maximum 60% AMI
- Minimum 40% of the units are set aside for tenants with an income average of maximum 60% AMI.

To pass the gross rent test, rents cannot exceed 30% of either 50% or 60% AMI, depending on the share of LIHTC units within the building.

Step 3: Demonstrating the financial viability of the project

When applying to a State Housing Finance Agency (HFA) or another allocating body, developers must demonstrate the financial viability of the proposed project. This requires clearly identifying sources of funding and demonstrating project feasibility. Key financial indicators include projected operating revenue, operating expenses, and cash flow.

1. Gross Potential Income (GPI): Gross Potential Income is the maximum revenue a property could generate if all units were rented at the optimal market or permitted rate. It provides an initial measure of the property's revenue potential.

2. Effective Gross Income (EGI): Effective Gross Income provides a more realistic estimate of revenue after accounting for vacancies, credit losses, and other expected collection losses. It is generally calculated by subtracting vacancy and credit loss from Gross Potential Income.

3. Annual Operating Expenses (OPEX): Annual Operating Expenses typically include property management, insurance, landscaping, utilities where applicable, and other recurring operating costs. Capital expenditures for major replacements are generally excluded from OPEX. Property taxes may be presented separately depending on the analytical framework and jurisdiction.

4. Net Operating Income (NOI): Net Operating Income represents the property's operating income after deducting operating expenses and applicable property taxes. NOI excludes debt service and financing costs and is therefore a key indicator of operating performance.

5. Cash Flow After Financing (CFAF): Cash Flow After Financing represents the annual cash flow remaining after debt service or other financing payments. It provides a broader view of project feasibility and may be considered alongside income taxes, replacement reserves, and other financial obligations.

The primary difference between India's Affordable Rental Housing Complexes (ARHCs) and the United States' Low-Income Housing Tax Credit (LIHTC) programme lies in their institutional and financing structures. ARHCs rely on public-sector incentives, civic concessions, and public-private partnerships to repurpose existing housing or facilitate development on vacant land, with a strong focus on urban migrants. LIHTC, by contrast, uses federal tax credits to mobilize private equity for the development and preservation of long-term affordable rental housing.

Here is a direct comparative overview showing how ARHC differs fundamentally from LIHTC:

Key Structural Differences

- **Financing Philosophy:** LIHTC leverages private investment by providing tax credits that are monetized to raise project equity, while ARHCs rely more heavily on supply-side incentives, regulatory facilitation, concessional financing, and public-private partnerships.
- **Migrant Focus:** ARHCs are specifically oriented towards the needs of urban migrants and economically vulnerable workers, including through dormitory accommodation and smaller dwelling units near employment centres. LIHTC developments, in contrast, generally comprise conventional rental housing targeted to income-qualified households.
- **Institutional Setup: A**RHCs were introduced as a targeted rental-housing initiative under the PMAY-U framework. The programme's institutional position should be described in accordance with the applicable

Comparative Framework: ARHC vs. LIHTC

Feature	Affordable Rental Housing Complexes (ARHC)	Low-Income Housing Tax Credit (LIHTC)
Country	India	United States
Primary Mechanism	Public-Private Partnerships (PPP) backed by concessions, GST/Income Tax exemptions, and technology grants.	Federal tax credits allocated to states, which developers sell to private investors to raise equity.
Core Strategy	Model 1: (JNNURM/RAY) via 25-year concessions. Model 2: Construction on private/public vacant lands.	New construction, acquisition, or substantial rehabilitation of privately owned rental buildings.
Target Population	Urban migrants, street vendors, industrial laborers, and EWS/LIG demographics.	Low-income households earning below specific Area Median Income (AMI) thresholds (e.g., 60% or lower).
Rent Control	Base rent is fixed via local municipal surveys, increasingly up to 8% biennially.	Rents are capped relative to local AMI parameters and federally regulated formulas.
Affordability Term	Mandated for a minimum period of 25 years, after which assets revert to local bodies.	Mandated for a minimum of 30 years (with extended use agreements reaching 50 years or longer depending on the state).

current policy framework and operational guidelines.

6.0 Challenges to Scaling Institutional Rental Housing

Despite the clear socioeconomic benefits of institutional rental housing, several systemic challenges can constrain its large-scale adoption:

Low Rental Yields: In many developing economies, residential rental yields are relatively low, which can make rental projects less attractive to private investors than build-to-sell developments.

Complex Land Acquisition: Securing large, contiguous parcels of clear-title land close to urban employment centres can be difficult, time-consuming, and expensive.

Outdated Rent Control Laws: Rigid or outdated rent-control provisions can discourage landlords from maintaining properties or adding new rental inventory. Balanced and predictable tenancy frameworks are important for restoring market confidence while protecting legitimate tenant interests.

7.0 Conclusion and Policy Recommendations

India's growing population will require additional housing over the coming decades, while non-durable housing stock will also need to be replaced or upgraded. It is estimated that India's urban population will increase by approximately 410 million between 2018 and 2050. This growth will intensify the challenge of providing adequate housing, serviced land, infrastructure, and housing finance in urban areas. Land is a finite resource and must therefore be used efficiently. Significant areas of government land and land held by PSUs remain vacant or underutilized, including parcels located in central parts of major cities. Previous studies have highlighted the underutilization of land held by public agencies. The identification and appropriate utilization of surplus public land can help expand the land available for affordable housing. Cantonment areas also occupy substantial tracts of land in several cities; any consideration of their redevelopment or land use must, however, remain consistent with applicable statutory and defence requirements. Affordable housing will solve the housing shortage significantly.

Development Plans often regulate Floor Area Ratio (FAR) to manage congestion and built density. However, excessively restrictive FAR provisions can limit construction capacity in central locations, encouraging outward spatial expansion, increasing infrastructure costs, and lengthening commuting distances. A more judicious approach to FAR, taking into account the spatial distribution of housing, infrastructure capacity, land demand, and mobility patterns, can increase the effective supply of housing while supporting more efficient urban development. Land pooling may also be promoted where owners of undeveloped or underused land consolidate

their holdings in exchange for appropriately serviced or developed plots. Rental housing is a persistent feature of informal and slum settlements worldwide and is also significant in many developed economies. A large number of households in India live in rental accommodation, which provides flexibility for migration, labour mobility, household financial management, and social mobility. However, the private rental housing stock has faced constraints arising from rent-control provisions, weak contract enforcement, and other market barriers. These factors can discourage private owners from maintaining existing rental housing or investing in new rental supply. The document notes that 11.09 million urban housing units were vacant, representing about 12% of the urban residential housing stock and potentially accommodating around 50 million people. It also notes a decline in the proportion of residential units occupied by tenants over time. Rental housing should no longer be viewed merely as a secondary alternative to homeownership; it is a structural component of a modern and competitive urban housing system. To develop an affordable, high-quality rental market, policymakers should consider the following strategic actions:

1. Provide Density Bonuses: Permit appropriate increases in Floor Area Ratio (FAR) for projects dedicated to affordable rental housing, subject to infrastructure capacity and planning norms.

2. Standardize Tenancy Frameworks: Establish transparent and modern tenancy laws that protect tenant rights while providing landlords with effective remedies in cases of default or breach of contract.

3. Expand Fiscal Incentives: Consider targeted tax incentives for rental housing, including appropriate relief on rental income and property taxes for institutional affordable-rental assets.

A balanced, tenure-neutral housing policy that supports both ownership and rental housing can help cities build flexible and inclusive housing ecosystems, strengthen labour mobility, and contribute to long-term economic growth and social stability.

Flood Mitigation Project for Frequently Flooding Locations in Pune City*

- The project addresses waterlogging and urban flooding in Pune through stormwater drainage improvements at 335 flood-prone locations across the city.
- The project will be implemented by the Pune Municipal Corporation (PMC).
- Several parts of Pune (especially Dhayari, Narhe, and Khadakwasla) have witnessed severe waterlogging during heavy rainfall in recent years, leading to traffic congestion and property damage. The existing drainage infrastructure has been unable to handle the monsoon volume.
- The project aims to upgrade drainage infrastructure to prevent flooding in low-lying and highly sensitive zones, safeguard citizens and property, and reduce waterborne diseases, thereby improving public health conditions.
- It is part of a broader ₹1,290 crore infrastructure package under the Urban Challenge Fund. The flood control component is approved at ₹400 crore, while ₹890 crore has been allocated for a water supply scheme for 12 villages recently merged into PMC limits- villages that gained attention after a Guillain-Barré Syndrome outbreak linked to unsafe drinking water.

**These projects were approved at the first National Apex Committee meeting of the Urban Challenge Fund, chaired by the Secretary of the Ministry of Housing and Urban Affairs.*

**The funding of all these projects follows the UCF model: Central Government contributes 25% (₹210 crore), the state contributes 25%, and 50% comes as a HUDCO loan.*

HUMANISING IN DIGENISING THE ALIEN: HUMANISING THE HIGHRISE LIVING

YATIN PANDYA

Over the six millennia of human endeavor of sheltering himself, the house form has evolved and morphed in response to the climatic, cultural and constructional forces. Later political policies and economic strategies came in to shaping the built environments. Mediaeval ages created compact built fabric within the fortified settlement for the defense and as a result long, narrow front, four storied courtyard house form was the outcome. Renaissance with cannonball invention rendered fortification redundant and as a result, settlements defied the bounds of the walls and grew beyond, with gardens and collective open spaces, inadvertently giving rise to speculative developments through private players. Industrialisation held mobility with car at the helm of affairs and as a result creation of planned autonomous suburbs with villa with 'smiling Lawn' as the chosen house form.

Today we are at the confused state of affairs. On one hand habitation, may it be rural or urban, is sprawling way farther horizontally while the built form is growing exponentially vertical. Thus, ironically it is neither a compact city nor a low-rise one. This calls for the smarter development vision and thereby the strategies to ensure appropriate house form for healthy and happy living environments. It is prudent to understand the consequences of the each living environments. Especially, we at the crossroads of choosing between low rise and the highrise living. There are pros and cons to each choice. Even if it may popularly seem like no escape from vertical living, in the guise of growing population and demanded densities, we need to holistically evaluate and introspect the same within Indian cultural, climatic, economic as well as historic context, before accepting it as an inevitable typology by default.

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Inherent Ailments Of Highrise Typology:

Independent to the design there are issues inherent to the high rise living. Apart from uncoordinated urban form, unstitched street edges, non-participatory interface zones to public realms / streets these isolated needles of human habitat have serious repercussion in social, economic and environmental fabric. There has been researched findings, as observed by Christopher Alexander and stated in the book Pattern language, to suggest that the crime rate is observed to be higher in the upper floors of the building than the same structure's lower floors. This is due to sense of indifference creeped in by the "out of sight out of mind syndrome". Pruitt Igoe at St. Louis- USA, was the point in case; where within a decade, 33 isolated eleven storied concrete towers as human habitat, had been

attributed to poor maintenance and increased crime rates such as vandalism and juvenile delinquencies in the newly created Arfrican American neighborhood. Demolishing the entire complex was seen to be the sane alternative within decade and a half.



Pruitt Igoe planned demolishion

Vertical segregation is far more severe than the horizontal distance, because the latter still falls within view cone encouraging chance interaction. This phenomenon has led to breakdown of interaction between neighbors and thus lack of social bonding. The groups more specifically and acutely affected by this segregation are the elderly, home makers as well as toddlers. Even mechanised elevators do not substitute for the impulsive chats or unplanned socialising. This group of inhabitants remains confined to respective floors, largely indoors, all through the day. Moreover, the foyer spaces have shrunk to minimise the built-up area and maximise the Floor space index. That too often remains gloomy having been flanked by elevators on one end and staircase on the other end. Such scenario does not even encourage neighborly relations or substitute as much-needed ground at upper levels for kid's play or elderly's gossip or women's kitty.

Apart from social adversities, the high-rise typology involves higher energy consumption, and much increased maintenance demands due to its imperative dependance on mechanised services. Going anti-gravity, it demands higher structural provisions and expenses, both, during construction as well as subsequent maintenance. This challenges its suitability for the housing options of the economically weaker sections, in addition to cultural incompatibility. Is there a wisdom in housing the urban poor in fourteen story vertical apartments, Today, under the 'no slum city' vision?



Pruitt Igoe as planned

HIGHRISE: A DEFAULT COMPULSION OR AN OPTION ADOPTED:

Before vertical needles become the default typology, indiscriminately everywhere, under the pretext of higher density let us reexamine the density claims. Half a millennia old, mediaeval urban settlements, lived in even today, have ably demonstrated their optimisation of landmass through dense built fabric and have remained humane, environmentally responsive and socially interactive walkable cities. Also, they have achieved nearly 2.5 Floor Space Index within four to five story limits.

This suggests that till such a built density threshold there is no compulsion to build high-rise only. There exists an option that suits Indian cultural, climatic and economic contexts and creates better urban form and city character. Pols of Ahmedabad, havelis



Dharavi slum (low-rise settlement)

of Rajasthan, Katras of Delhi, Agraharams of Southern temple cities, even Chawls of Mumbai as well as Row houses of the contemporary times are the points in case.

After which there is midrise with seven to eight storied mid rise and then eventually eleven storied and taller high rises. So, within such options can it not be appropriately designated from city cores to suburbs? From Towns to metros? For economically underprivileged to the affluent? From residential to commercial land uses? Thus, high-rise living need not be a compulsive typology for most urban contexts but can well be the choice. But important is to recognise that such a choice comes with design responsibilities to humanise the same. Design nuances to enhance the virtues of the type while overcoming the adversities.

Design Strategies:

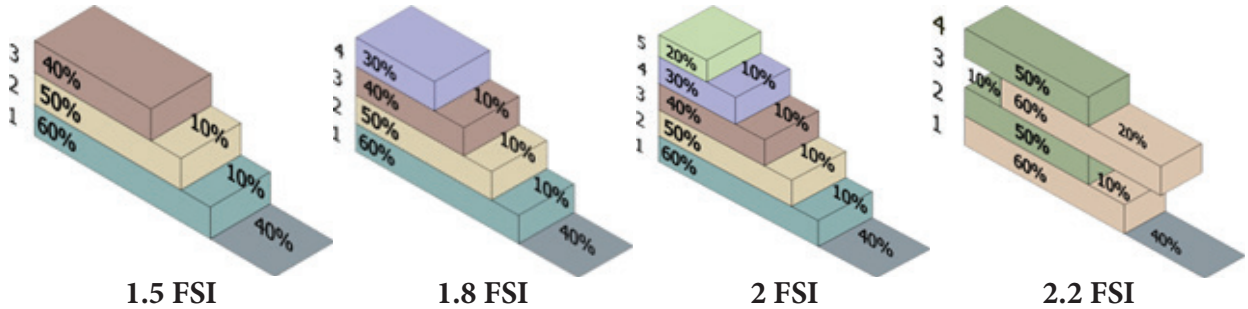
The design dimensions demanded for the typology can be summarised as follows:

a) Use discretion to choose the high-rise typology for commercial functions rather than residential; for the economically affording groups rather than the have nots; and for the growth zones instead of existing city cores.

b) Mandate legally the provision of open spaces for higher floors. There exist strict byelaws for the compulsory setbacks as no build zones, up to fifteen percent open space as common open plot etc. for the ground developments, why can't the same be extended to upper floors by mandating certain percent of dwelling space as compulsory personal open space for activity spillover and the minimum of certain percentage of floor plate as compulsory common foyer space for neighborly interactions. These foyer spaces can also be encouraged to have cutouts overlooking lower

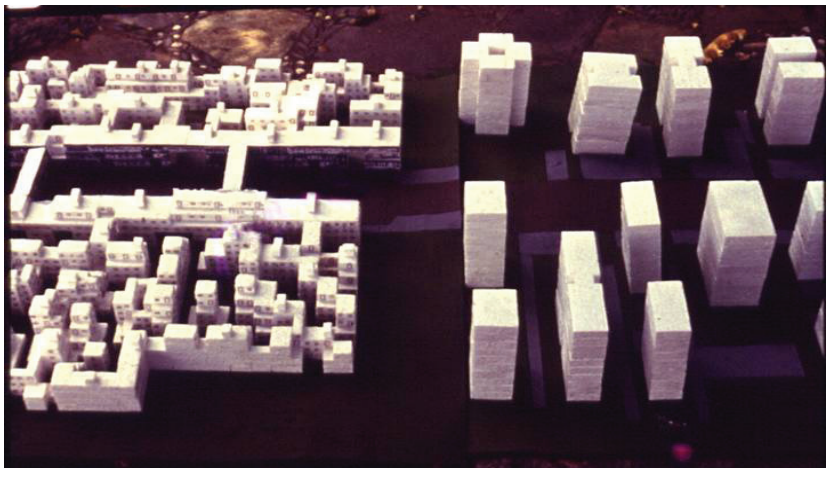


No slum city idea of vertical rehabilitation of slums



1.5 FSI **1.8 FSI** **2 FSI** **2.2 FSI**

Low-rise can still achieve high FSI



Low rise vs. High rise Comparison of built form for same built density

floors, like Atriums of the malls, to visually and thereby socially bind neighbors segregated by floors. Thus, the entire visually and physically interconnected hierarchical network of open spaces are imperative from neighborhood green to building block clusters, to building foyers to personal terraces adjoining utility and living spaces.

c) Rather than isolated needles of towers akin to Nariman point, they can have better street interface as well as contiguity of edges through connected lower floors like podiums and arcades of colonial town streets to impart street character.

d) Flexibility for personalisation, adaptation and growth are the inherent attributes of design for the vertical living. This not only involves structural flexibility but also supported by the dimensional coordination, spatial modulation as well as spatial zoning. As home is the family's identity, rather than uniformising the external faces, inadvertently infesting monotony, it must be accommodative of owner expressions as well as image; as in our traditional living quarters with diversity and vitality. Like traditional craft-based production of assembled kit of parts such replication of contemporary kit may be an answer to avoid incongruent eclecticism and yet achieve harmonisingly diverse homefronts.

Like a doctor, as architect, we are responsible to be responsive to improve the quality of life. It is not about preconceived norms of Good or bad or ugly, but instead about being appropriate or inappropriate. Appropriate to the place, people and the planet and thus it needs to derive holistic design syntax incorporating timeless aesthetics, socio-cultural appropriateness, functional efficiency, environmental sustainability as well as structural stability. Design can make a difference to the world, but the goal must be the improved quality of life of the people as well as the planet.



Ahmedabad pol houses



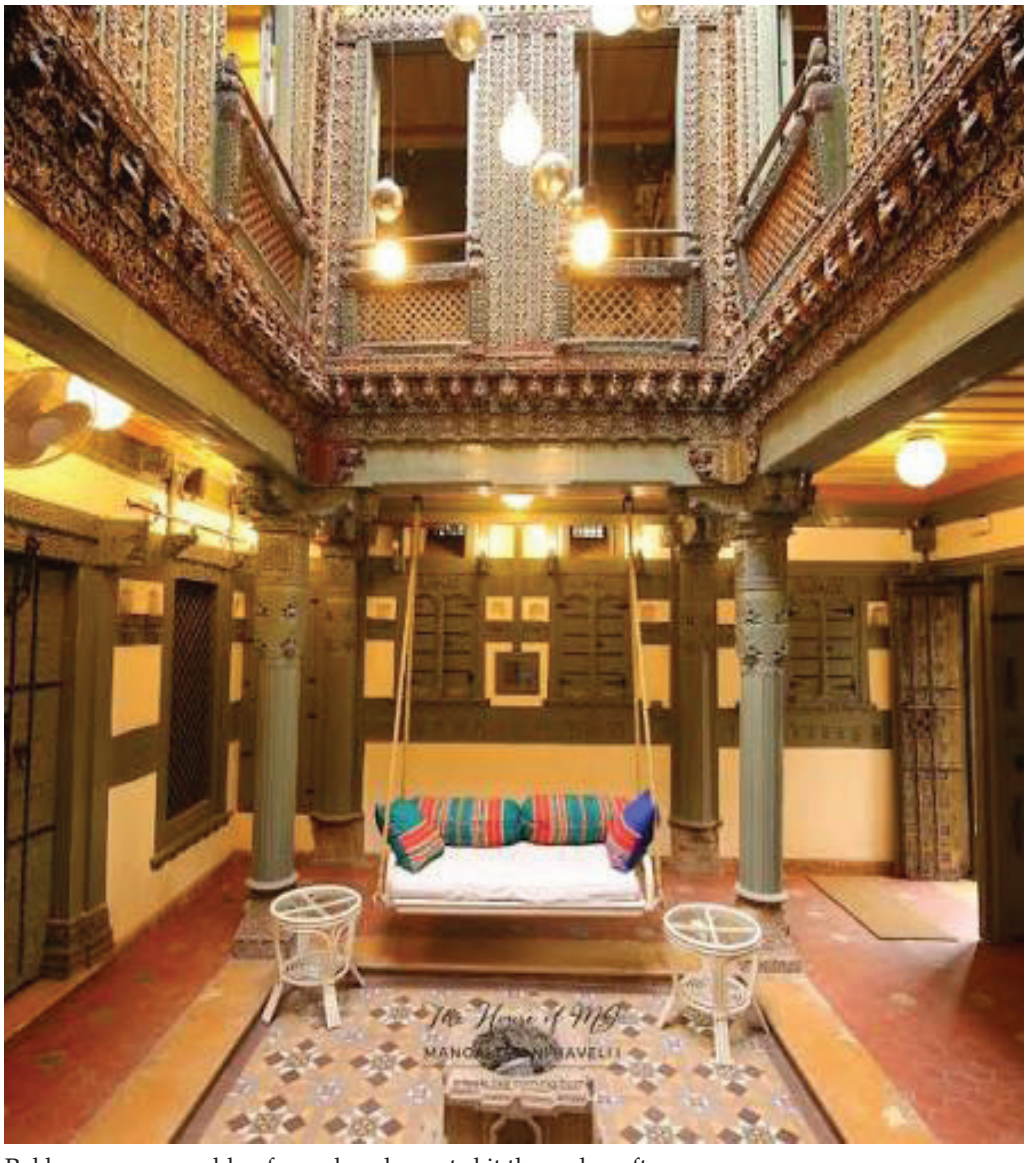
Jaipur havelis



Tamil Agraharam (image courtesy THE HINDU)



Mumbai Chawls (image courtesy Hindustan times)



Pol house: as assembly of wooden elements kit through craft processes



Utopian neighbourhood collage
Image Courtesy : Astha CEPT University

Bhubaneswar Town Centre and Lake Zone Development at Nicco Park under UCF*

- The 24-acre BDA City Centre (Nicco Park) is being transformed into a modern urban leisure and tourism destination integrating entertainment, wellness, nature, and commerce. A 3-kilometre stretch of Storm Water Channel No. 10 is being ecologically restored and developed into a green public corridor with landscaped gardens, plantation areas, and recreational spaces along its banks. Key elements include rides, upgraded boating facilities on the restored lake, an Ayurvedic and herbal park, cycling tracks, food courts, restaurants, hotel spaces, and a market complex.
- The goal is to create a "green corridor" — an ecological and recreational spine running from the BDA City Centre through Storm Water Channel No. 10 to the Janpath Lake Zone — while restoring a neglected public space and addressing the environmental degradation caused by the polluted drain.
- A wastewater treatment plant is being added near the Satya Nagar end to treat polluted water before it flows further downstream, directly addressing the contamination that had rendered the park's boating pond unusable.
- The redevelopment is part of Odisha's broader "Next-Generation Urban Growth Roadmap" presented under the UCF, worth approximately ₹5,000 crore, with a total investment of over ₹600 crore for the BDA City Centre and a separate ₹200 crore for Storm Water Channel No. 10 and the Janpath Lake Zone.
- The DPR has been finalised and work is set to begin in 2026. The project is being executed in three phases: core infrastructure and lake beautification (Phase 1), commercial components (Phase 2), and premium recreational amenities (Phase 3).

**These projects were approved at the first National Apex Committee meeting of the Urban Challenge Fund, chaired by the Secretary of the Ministry of Housing and Urban Affairs.*

**The funding of all these projects follows the UCF model: Central Government contributes 25% (₹210 crore), the state contributes 25%, and 50% comes as a HUDCO loan.*

TOURISTS, TENANTS AND TUG-OF-WAR: INVESTIGATING LONG-TERM AND SHORT-TERM RENTAL DEMAND-SUPPLY GAPS IN UJJAIN

DR. ARTI JAISWAL, SAURABH KUSHWAHA AND PRANTIKA BHOWMICK

Tourism often generates periodic demand surges in cities where short-term visitor or tourist demands of housing overlaps with long-term and everyday rental needs of migrants, students and workers. This study examines the resulting demand-supply dynamics of short-term rental (STR) and long-term rental (LTR) housing in Ujjain, a major pilgrimage city in Madhya Pradesh, India. Drawing on a stakeholder-survey covering 596 tenants, 510 landlords, 269 accommodation units and 896 visitors, the study integrates rentalmarket assessment, multiple linear regression and GIS-based and Google Earth image-based to identify spatial and affordability related gaps in rental provision. The findings reveal a pronounced spatial mismatch between STR demand and available accommodation, particularly around the Mahakal Lok corridor, Ujjain railway junction and major transport nodes. Ward 28 shows peak demand of 3296-3767 accommodation units against a smaller supply. Regression model further indicate that dwelling area is the strongest predictor of rent, followed by garden/green spaces, accessibility and parking/porch facilities. Based on demand patterns and locational criteria, three public land parcels are identified as suitable for Affordable Rental Housing Complexes (ARHCs) with differentiated potential for STR and LTR provision. The study argues that rental housing in these pilgrimage or tourist cities must be treated as an integral part of urban infrastructure, requiring policies to address the dual demand nature seen in these tourist destinations.

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Introduction

The tourism industry has grown by leaps and bounds in recent decades, aided by advancing transportation infrastructure and the increasing desire to engage in recreational activities. Several cities across the world attract huge numbers of tourists each year. This has resulted in rental housing issues coupled with an acute structural crisis within the urban housing sector (Gilbert, 1992; Malik & Wahid, 2014; King et al., 2017).

While public institutions and macro-level financial policies traditionally encourage hip as a primary mechanism for asset accumulation (Doling & Ronald, 2010) and social security (De Decker & Dewilde, 2010; Mudrazija, & Butrica, 2017), large segments of the shifting urban workforce – students, employees and transient groups are systemically excluded from ownership due to high property rents, volatile credit availability and localized inflation in land

prices. This situation tightens with the introduction of tourists' rental demand in the housing sector in a city. In this scenario, rental housing emerges as a highly responsive, flexible (Peppercorn & Taffin, 2013) and essential medium that absorbs localised demand surges (Brill et al., 2023) and facilitates the entry of the aforementioned transient groups into urban economic systems while accommodating the tourists and pilgrims as well. Despite their ability to offer a secure and affordable temporary or permanent shelter to transient groups, there is hardly any structured policy planned for it.

The operation and dynamics of rental markets become more complex in historic, religious and pilgrimage cities (Pasha, 1984, 1987) where urban centres exhibit a unique dual-demand pattern - a continuous demand for residential rentals (LTR) incurred by public and private sector employees, university students and ; and cyclical, episodic rental (STR) or transient housing demand during religious festivals (such as the Simhastha Kumbh Mela). This dual nature of rental demand places extraordinary pressure on local real-estate values and The city of Ujjain located at the religious heart of Madhya Pradesh, by the Kshipra River (Rohit & Tiwari, 2025), represents a classic example of this pilgrimage driven dual market housing demand. Known by the name of Avanti during the Vedic period, this city is recognised as one of the seven sacred Hindu cities (Sapta Puri). Ujjain is known for its highly revered Mahakaleshwar temple and has seen recent commissioning of the massive Mahakal Lok corridor redevelopment project. This has exponentially increased daily tourist and pilgrim flows leading to a rapid unregulated demand for accommodation among local residential assets. As a result, rent their houses fully or partially to meet the demand surges and get an income source. The high demand increases the rent as well which makes it difficult for the marginal workers and to afford, pushing them into peripheral urban slums, making them highly vulnerable. To combat this pressure incurred by the dual nature of rental housing demand, proper structured plans must be adopted, which will aim to increase rental housing accommodation in these cities at an affordable rate.

Literature review

Historically, the term "rental housing" emerged alongside the shift from agrarian land-tenure systems (Ghertner, 2020; Upadhya & Rao, 2023) to urban, monetized economies. The Industrial Revolution entrenched rental housing, as mass urban migration and wage-based labour created demand for temporary, non-ownership shelter (Clark, 2002). Abrams (1964), in his books "Man's Struggle for Shelter in an Urbanizing World" defined rental housing as a tenure arrangement in which ownership remains with the landlord while tenants acquire the right to occupy a dwelling in exchange for rent. This definition distinguishes rental housing from owner-occupied tenure where ownership conveys title and residual claims to capital gains, while rental tenure confers time-bound and conditional rights of occupation without title transfer (Payne & Durand-Lasserve, 2012). Beyond functionality, rental housing intersects with questions of security (tenure security, legal protections against eviction) (Hulse & Milligan, 2014; Huisman, 2020), affordability (rent burden relative to income) (Stone, 2010; Barrett, 2023), quality (adequacy of physical conditions and services) (Kain & Quaigley, 1970); and distributional justice (which groups access well located and quality rentals) (Keene & Blankenship, 2023). UN-Habitat (2003) further described rental housing as a diverse tenure system encompassing a wide range of ownership structures, dwelling types, income groups and legal arrangements (Payne & Durand-Lasserve, 2012; Hulse & Milligan, 2014; Hulse & Reynolds, 2024).

In India, rental housing evolved through colonial urbanisation and industrialisation (Jenkins et al., 2006), when cities such as Calcutta, Bombay and Madras experienced substantial

migrant inflows (Tumbe, 2018). Housing forms such as chawls, bustees, railway quarters and company housing emerged to accommodate urban workers. After Independence, public rental housing remained largely confined to government employees and industrial workers, while restrictive rent control legislation discouraged private investment, resulting in the expansion of informal rental markets (Tiwari et al., 2018). In the evolution of the meaning of rental housing, tourists have not been considered a primary role, yet, in today's world, tourism industry and demand by tourists shape the housing provision dynamics in various cities across the world.

Recent reforms have attempted to strengthen India's rental housing sector. The Draft National Urban Rental Housing Policy, The Model Tenancy Act (2021) and the Affordable Rental Housing Complexes (ARHCs) scheme introduced after the COVID-19 pandemic aim to promote transparent rental agreements, improve dispute resolution mechanisms and expand affordable rental housing for migrants and resolution and expand affordable rental housing for migrants and economically weaker sections.

Simultaneously, digital platforms such as Nest Away, Housing.com, and Airbnb have transformed rental markets by improving information accessibility and property management, although concerns regarding affordability, inequality and market concentration remain. Existing literature consistently identifies affordability, accessibility, housing quality, tenure security and proximity to employment as the principal determinants of rental housing demand (Randolph, 1988; Beltsky & Retsinas, 2008; Peppercorn & Taffin, 2013; Desai & Mahadevia, 2014). Informal rental housing plays a critical role in accommodating migrant populations (Naik, 2015) despite its limited legal protection and inadequate infrastructure. Researchers have also highlighted the need for balanced rental policies, institutional reforms and greater government support to create inclusive and sustainable rental housing systems (Golubchikov & Badyina, 2012; Peppercorn & Taffin, 2013). The Smart Cities Mission and digital governance initiatives have accelerated the integration of technology into housing management (Chatterji & Mukkai, 2024; Mishra et al., 2025) but failed to address affordability significantly (Hoelscher, 2016). Consequently, India's rental housing sector reflects the contradictions of financialized digital urbanism, where technology and capital enhance efficiency and visibility for formal markets while deepening precarity and exclusion within informal and affordable segments. For example, the Build to Rent (BTR) model, which has gained significant traction in the United Kingdom and Australia, involves the development of residential schemes for rental purposes (Abidoye et al., 2022; Carvalho et al., 2023). Similarly, the Rent to Own (RTO) model, which is highly adopted in Europe, the Middle East, and Africa, allows tenants to set aside part of their rental payments towards the down payment for the future (Gilbert & University College London, 2015).

The COVID-19 pandemic also revealed the weakness in migrant housing infrastructure (Dubey et al., 2022), leading to the launch of the Affordable Rental Housing Complexes scheme under the Pradhan Mantri Awas Yojana. The ARHC scheme is a supply-side stimulus package under two implementation models: the conversion of vacant government housing into rental housing through concession agreements with ULBs, and incentivizing the construction of rental housing by private/public entities on vacant land. To increase the financial attractiveness of the scheme, it offers infrastructure status for rental housing, additional FAR benefits, single-window clearances, and tax concessions (Knight Frank Research, 2019). On the whole, the Indian model of renting reflects the transition from the rigidities of rent control and public provisioning to the development of a well-

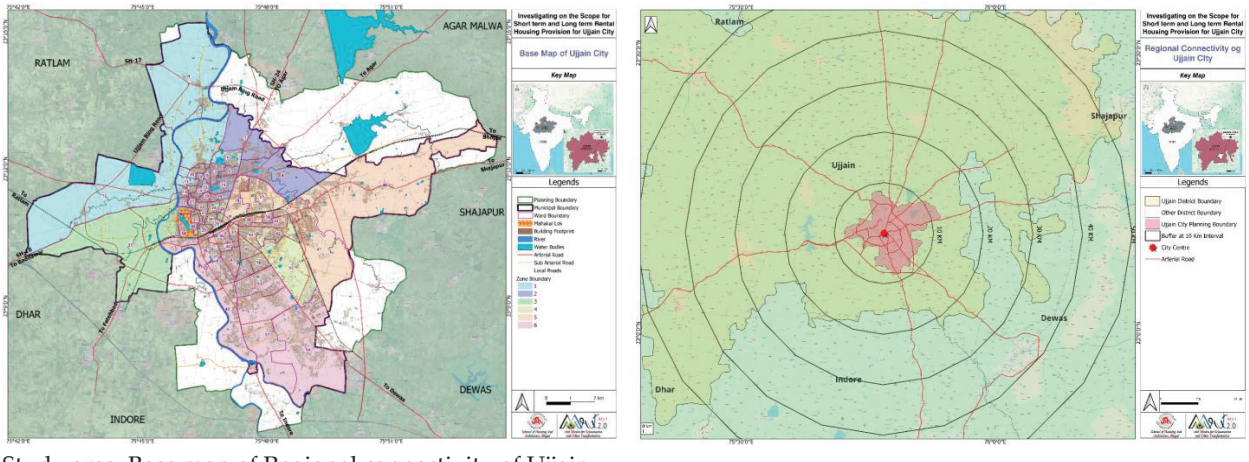
structured, transparent, and investment-friendly renting system that aims to mainstream renting in the country and meet the housing needs of diverse urban populations.

Despite the growing body of literature on rental housing and India's efforts in building an inclusive and sustainable housing is noticeable, a significant remain in the context of religious tourism in medium-sized pilgrimage cities. Destinations such as Mecca, Lourdes, Santiago de Compostela, Bodh Gaya, Varanasi and Tirupati (Shinde, 2007) exhibit strong seasonal fluctuations in accommodation demand. While short-term rentals serving pilgrims are often supported by digital booking systems, licensing mechanisms and crowd-management strategies, long-term rental housing generally follows conventional tenancy agreements. This coexistence of pilgrim-oriented accommodation and residential rental housing creates challenges for governance owing to the periodic surges in demand (Pasha, 1987) and a consequent demandsupply gap. The effects of periodic religious events on rental demand, affordability and tenant experiences remain inadequately explored.

The most important barriers included inflexible rental agreements, negative social attitudes and the absence of government incentives. It is recommended stronger institutional coordination policy and stakeholder participation to improve rental housing outcomes (Saha et al., 2025). Tiwari (2016) further stated that India's housing policies require comprehensive reforms including improved land administration, stronger financial mechanism and greater attention to affordable housing needs. The study emphasized that existing housing market frequently overlooks the requirements of low and middleincome households. In a study, Gupta & Gupta (2017) found that demand for rental housing is influenced by factors such as rent level, access to water, availability of bathrooms, proximity to and security of the rental. The study also revealed that rental damage among low income house is relatively inelastic to both income and rent is. These issues of rental housing must be contextualised in case of medium-sized religious cities of Central India, like Ujjain, as well. As already mentioned, these cities display a unique dual nature of demand i.e. short-term and long-term. Ujjain being an important pilgrimage centre experiences periodic demand surges from pilgrims, particularly during major religious event such as the Simhastha Kumbh Mela. In light of the policies implemented and adapted in the major cities across India, Ujjain is chosen as a site for the implementation of AMRUT 2.0, under the PMAY. Hence, rental issues including rental housing and gaps, affordability, amenities, tenant security among others must be addressed.

Study area

Ujjain is the second major city in the Indore agro-industrial



Study area: Base map of Regional connectivity of Ujjain

region. Ujjain is located at 23°11′ north latitudenband 75°48′ east longitude, at an altitude of 510.00 meters above sea level. Indore, another major city in Madhya Pradesh, is located 60 km from the city, and Dewas is located only 36 km away. The city is 198 kmbfrom the state capital, Bhopal. The city is well connected by road and rail to major cities in the country. Rail services are available from Ujjain to Delhi and Bhopal. For air travel, the Devi Ahilyabai International Airport is located in Indore, near Ujjain. An airstrip is located 16 km from the city in the village of Dattana, near the Ujjain-Dewas Road (Fig. 1b). However, the Devi Ahilyabai International Airport in Indore, being located 60 km away, this airstrip could not be developed.

Ujjain Municipal Corporation (UMC), as per the 2011 Census, had a population of 515,215, spread over 54 administrative wards, with an average density of approximately 3,400 per sq. km. The highest density is seen in the Old City regions surrounding the Mahakaleshwar temple, coinciding with high land-use pressure and high built density. The latest estimates for 2026 suggest that the municipal population has swelled to nearly 773,000, thereby substantially raising the baseline requirement for long-term and affordable housing in the city. Analysis at the ward level identifies specific pockets of demand for rental housing. Wards with high density, such as 48, 17, 53, and 40, have the highest population and are closely linked to religious and commercial activity nodes. These regions are ideal for short-term rental housing to serve the needs of pilgrims, tourists, and seasonal visitors. In contrast, wards in the emerging growth corridors, especially around Nanakheda and the Dewas Road/Indore Road stretch, are taking shape as organized residential clusters with excellent potential for long-term rental housing to serve students, service class employees, and middle-class families. At the same time, the low-density wards that are close to the fringes of industries offer Greenfield sites for the development of affordable rental housing schemes to cater to the industrial workforce. The socio-economic factors also emphasize the importance of a rental housing strategy. With around 120,141 people residing in slum areas, it is clear that there is a large informal rental housing market that is yet to be tapped. Also, with nearly 42.3% of the total households belonging to the lower socioeconomic classes, the demand for affordable rental housing is quite important.

Methodology

The analysis draws on a stratified random survey using a stakeholder-based sampling strategy to ensure comprehensive representation of all major actors within the rental housing system. It was carried out in two phases – Phase I and Phase II. The idea of the phases is for doing the survey on normal days and peak days. The four primary respondent categories were identified:

1. Tenants

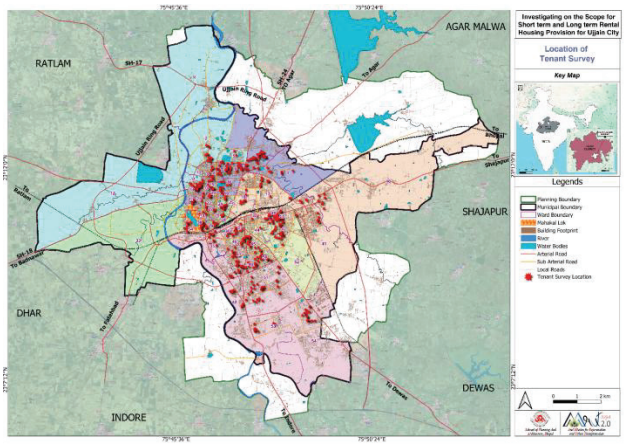
In total, 596 tenants were surveyed, of which 462 tenants (about 77%) were covered in Phase I and 134 tenants (about 23%) were covered in Phase II.

2. Landlords

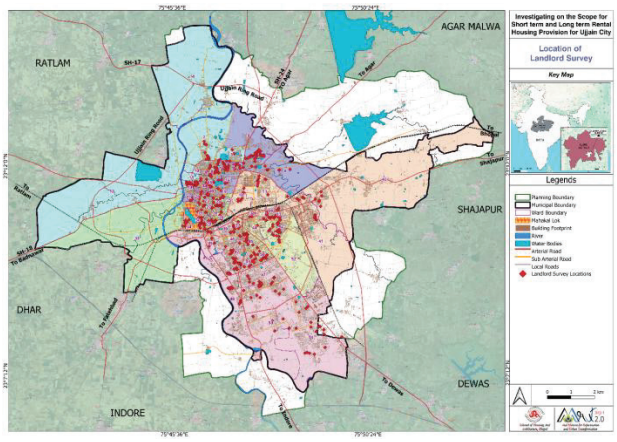
A total of 510 landlords were surveyed, of which 406 landlords (approximately 80%) were covered in Phase I and 104 landlords (approximately 20%) were covered in Phase II.

3. Accommodation providers

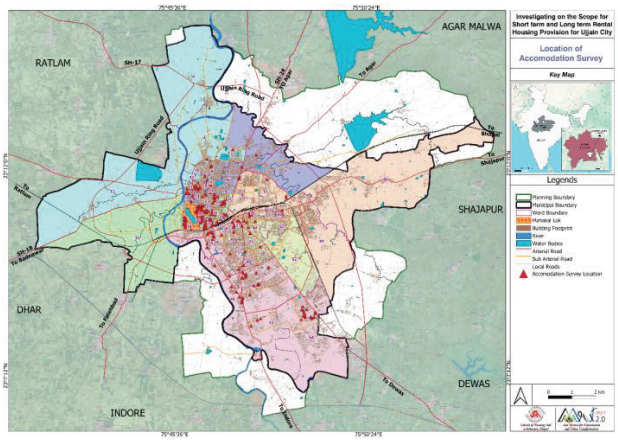
The two-phase survey provides a clear picture of how 269 across Ujjain. Rental samples were selected based on the existing Census data of rental houses. In Phase I for transient category (short-term rental accommodation), the focus was mainly on the busiest and high-demand areas of the city. It covered locations near religious landmarks, market areas, and mixed-use neighbourhoods where accommodation activity is already well established. Good road connectivity in these areas further supports their popularity. Phase II extended the survey to understand the rental housing dynamics during the peak days of tourist inflows. The units surveyed in this phase were more scattered, showing that accommodation facilities are slowly expanding beyond the traditional city centre.



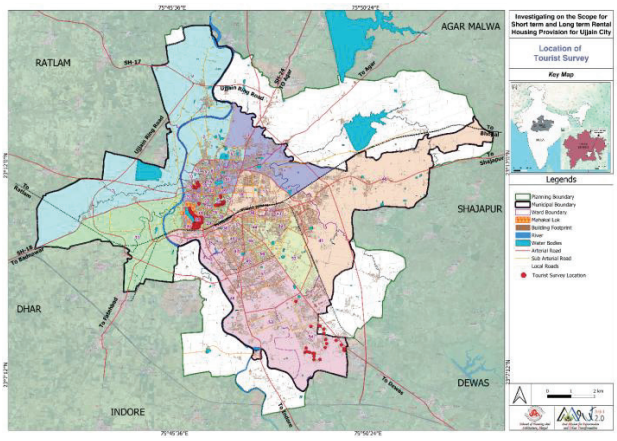
Location of tenant survey



Location of landlord survey



Location of accommodation survey



Location of tourist survey

4. Visitors and Migrants

The Primary Visitors Survey was conducted to understand the spatial distribution and accommodation patterns of visitors, including both migrants and tourists. The survey was carried out in two phases to ensure ward-wise coverage of major activity areas, residential zones and peripheral extensions within the city. A total of 896 people were surveyed, of which 510 (approximately 57%) were covered in Phase I and 386 (approximately 43%) were covered in Phase II. The mapped survey locations indicate that the study covered key wards across the city, including the central core, surrounding residential wards, and selected outer areas.

The ward-wise distribution shown on the map (Fig. 2d) highlights a strong concentration of visitors in the central wards, particularly around the Mahakal Lok precinct and the historic city core. These wards show dense clusters of survey points, reflecting high tourist inflow and short-term stay demand in areas close to temples, markets, and major commercial activities. The central wards function as the primary accommodation and activity hub for tourists due to proximity to religious landmarks and better access to hotels, guest houses, and other stay facilities. Phase I mainly focused on high-footfall and high-demand wards, particularly in the central and adjoining areas, resulting in higher survey coverage in these zones. Phase II extended the survey to additional wards and developing localities to capture a broader understanding of visitor distribution across the city. The overall spatial pattern demonstrates a clear concentration of visitors in central wards, gradually decreasing toward peripheral wards.

In conclusion, the survey of 896 persons provides a comprehensive ward-wise understanding of short-term, temporary accommodation demand and long-term demand in Ujjain. Central wards experience the highest visitor concentration due to religious

tourism and commercial activity, while outer wards show moderate to emerging demand. This spatial analysis supports better planning of both short-term and extended-stay accommodation and helps in formulating policies for balanced and sustainable rental housing provision in Ujjain City.

The accommodation category focuses on establishments providing short-term stays such as hotels, guest houses, dharamshalas, lodges, homestays, and hostels. The tenant and landlord surveys together help in understanding long-term rental housing demand and supply patterns, as well as visitors such as migrants and tourists. Migrants generally represent long-term rental demand, while visitors and tourists may have both short-term and extended stay preferences. The tenant survey focuses on the socio-economic background of tenants, their rental affordability, housing preferences, type and duration of tenure, and the challenges they face in the long-term rental market. The landlord survey examines the availability of rental housing stock, investment behaviour, property management practices, and the constraints that limit expansion of rental supply. The visitor survey evaluates both short-term and longer-term accommodation demand. It collects information on duration of stay, spending patterns, satisfaction levels, and willingness to consider alternative rental housing options. Together, these four kinds of survey categories provide a comprehensive understanding of rental housing dynamics in Ujjain City.

Rent Estimation based on present study

A multiple linear regression analysis has been carried out to examine whether employment type predicts the amount of rent paid. Employment type was recorded using dummy coding (Yes = 1; No = 0) across seven categories (freelancer, government permanent, government transferable, other, private permanent, private transferable and self-employed). Accessibility categories were recorded using dummy coding (Yes = 1; No = 0), such as Very easy, Fairly Easy, Accessibility not specified, Very difficult. Facility type was recorded using dummy coding (Yes = 1; No = 0), such as, Garden & Green spaces, Play area for small children, Community center, Malls/ Cinema halls, Religious Place. Location for each individual was recorded using dummy coding (Yes = 1; No = 0). The location categories are Near to workplace, Good quality housing, Community bonding, Well-connected area and Near to relative. Amenity type was recorded using dummy coding (Yes = 1; No = 0). The amenities are Parking and Porch (Paid/ Not-paid), Balcony terrace, good access to water, Separate toilet and Separate gate. From each regression model run on each of these categories, the most dominant predictor of rent has been estimated, respectively.

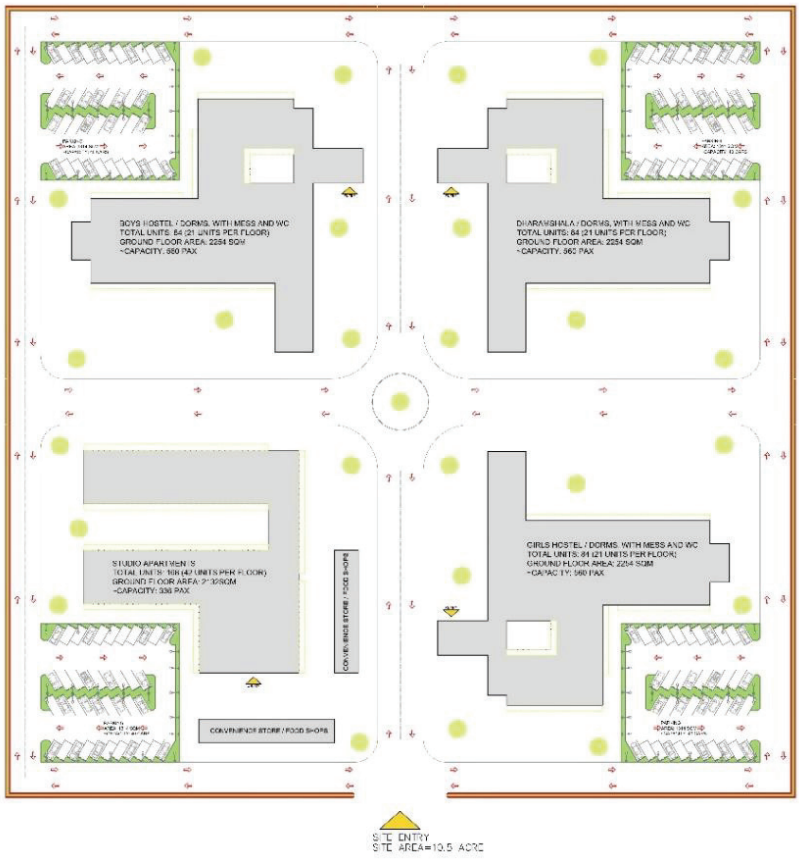
Land Suitability

For land suitability, GIS-based analysis based on established criteria has been done to identify the locations suitable for building the Affordable Rental Housing Complexes (ARHCs) in future. Perception analysis from all the stakeholders about the location was also factored in.

Results and analysis

Majority of the visitors come to Ujjain for pilgrimage activities, such as visiting prominent religious sites like Shri Mahakaleshwar Temple, Harsiddhi Temple and Kal Bhairav Temple. This makes Ujjain an important pilgrimage centre. The survey further indicates that the majority of the visitors prefer to stay for short durations, such as one to three days, as their visit is mostly linked to activities like darshan of temples, religious activities or participation in religious festivals. During events like Simhastha Kumbh Mela, the number of visitors increases exponentially.

In terms of their accommodation requirements, most of them opt for budget hotels, dharamshalas, guest houses and short-term stay accommodations, which are located in close proximity to major temples and commercial hubs. The main factors that influence their stay are



Prototype of Site Plan of Rental Housing Complex

accessibility, affordability, and proximity to religious centres.

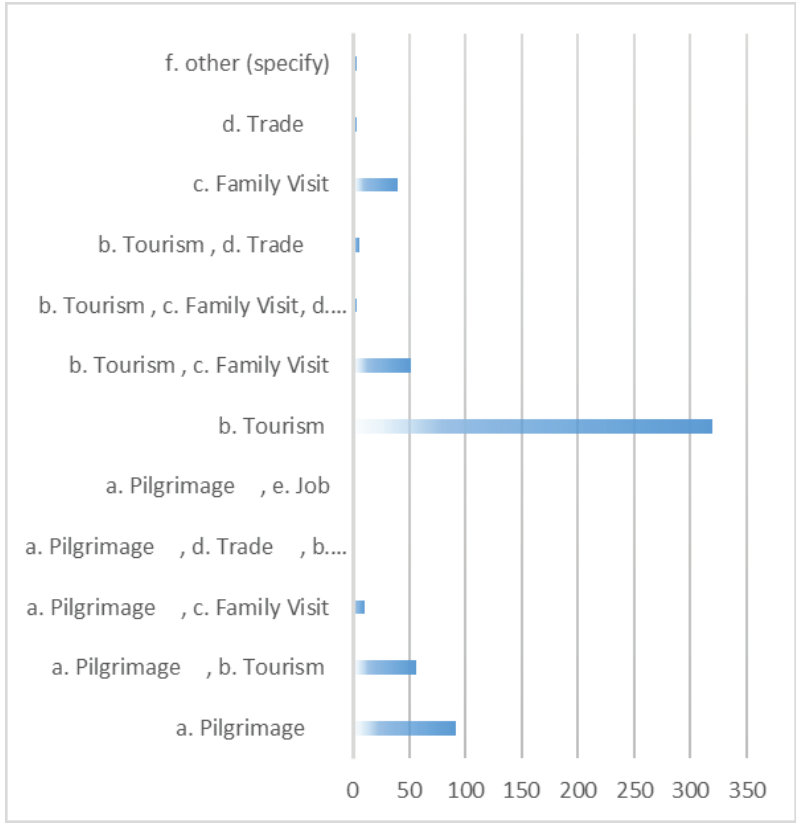
Overall, the survey reveals that religious tourism is the main driver of inflow for the city of Ujjain, which in turn, generates a continuous demand for short-term stay accommodations and plays a significant role in shaping the rental housing market in the city. Analysing survey data, it is found that tourism constituted the largest share of respondents (53.97%) among the surveyed samples. This was followed by 15.56% of respondents who were visiting the city solely for pilgrimage. Various combinations of purposes, including both tourism and pilgrimage, were also reported. This indicates the dominant influence of tourism and pilgrimage on short-term rental market.

The survey of visitors in Ujjain shows that visitors' accommodation is affected by budget constraints, proximity to temples and length of visit. Many visitors prefer to stay in budget accommodations like budget hotels and guesthouses.

These accommodations are preferred by visitors because of their proximity to major temples like Shri Mahakaleshwar Temple in Ujjain. Budget accommodations offer basic facilities at low costs and are close to temples and markets. Another type of accommodation that is preferred by visitors in Ujjain is dharamshalas and religious resthouses. These types of accommodations are often used by visitors for short periods of time and for religious purposes. These accommodations offer low-budget accommodations and are often run by religious trusts.

However, some visitors, such as families and those staying longer, prefer to stay in the mid-range hotel or lodging facilities, which offer more facilities and privacy. During the recent years, some visitors, particularly during the peak season of pilgrimage, stay in short-term rented accommodation facilities, such as rented apartments or rooms. Overall, the typology of accommodation preferred by the visitors in Ujjain appears to be short-term, affordable and is located in the vicinity of the major religious attractions, which indicates the prevalence of strong pilgrimage tourism in the city. The figure (Fig. 5) below represents the preferred accommodation typology among the visitors, where hotels account for the highest individual share, followed by homestays, guesthouses and dharamshalas. Several responses also included combinations of typologies like that of hotels and homestays, indicating a higher demand for these two accommodation types.

Purpose of Visit	Frequency of Visitors
a. Pilgrimage	92
a. Pilgrimage, b. Tourism	56
a. Pilgrimage, c. Family Visit	10
a. Pilgrimage, d. Trade, b. Tourism	2
a. Pilgrimage, e. Job	2
b. Tourism	319
b. Tourism, c. Family Visit	52
b. Tourism, c. Family Visit, d. Trade	4
b. Tourism, d. Trade	6
c. Family Visit	40
d. Trade	4
f. other (specify)	4



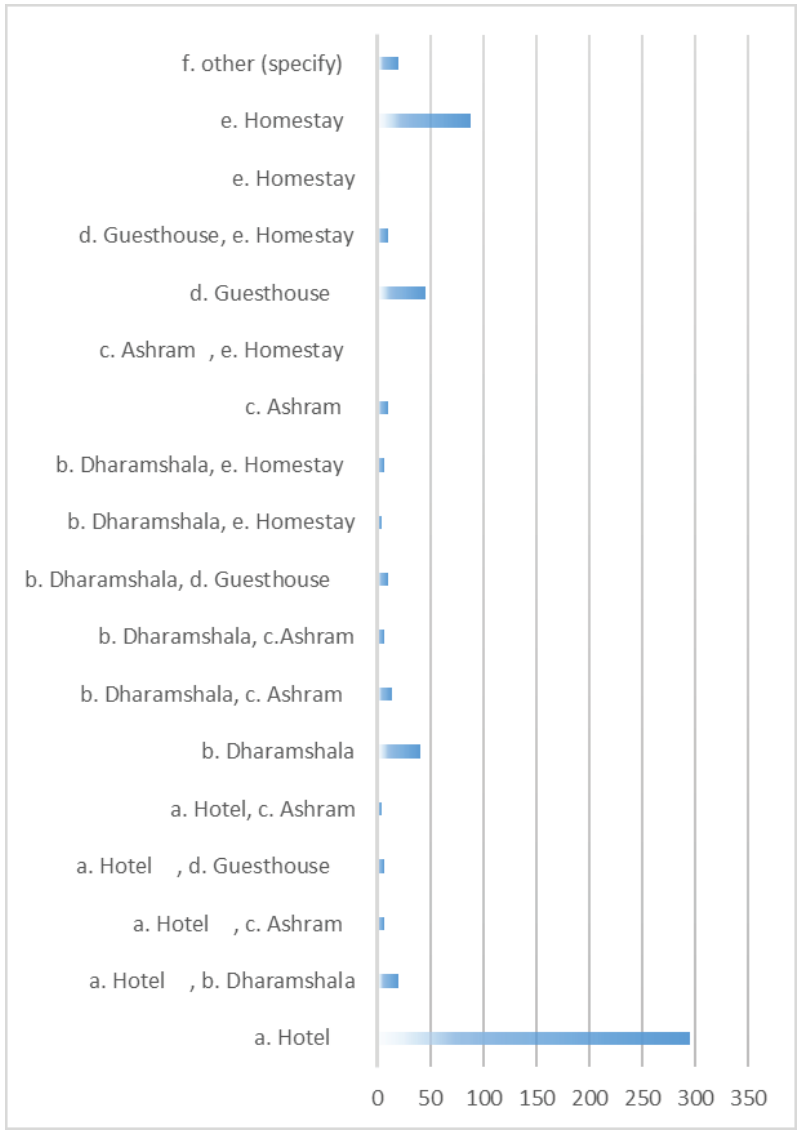
Purpose of Visit of visitors based on survey data

The findings reveal that rental housing demand in Ujjain is not solely a consequence of housing shortages but is strongly linked to the city's unique socio-economic and cultural status. The demand-supply gap assessment demonstrates significant spatial variability in the distribution of rental accommodation, both across the city with most of them located near major pilgrimage destinations, transportation nodes and commercial activities. Some wards exhibit disproportionately high demand for short-term accommodation in particular areas surrounding the Mahakal Lok corridor (Ward no: 31-34), Ujjain Junction, bus stops and road corridors, putting considerable pressure on existing accommodation infrastructure during STR acccomodation. On the demand side, accommodation requirements during peak days have been categorized into eight demand ranges.

The survey of visitors in Ujjain has shown that the selection of rooms depends upon the number of visitors traveling together, budget constraints and the duration of stay. to double bedrooms, as many pilgrims and tourists travel in pairs or as couples. Double bedrooms are the most suitable options for such visitors, as these rooms are available in most hotels, lodges and guest houses near the prominent pilgrimage centres like Shri Mahakaleshwar Temple. Families of visitors to Ujjain prefer family rooms or triple bedrooms, as these rooms can accommodate three to four people. This option is economical for families, as these rooms can accommodate several people while reducing the costs of accommodation.

Some tourists, especially groups of pilgrims, prefer to stay in dormitory rooms or shared halls, which are usually available in dharamshalas and religious rest houses. Such accommodation is preferred due to its low cost and suitability for short-term pilgrimages of a religious nature. Overall, it appears that double rooms and family rooms are the most preferred accommodation

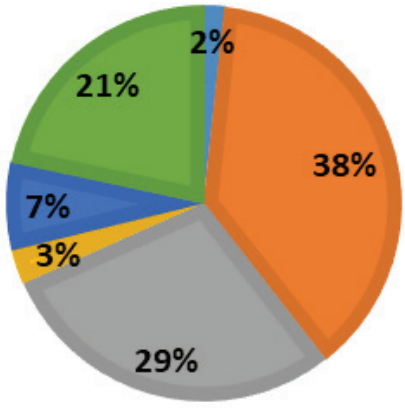
Preferred Accommodation Typology	Frequency of Visitors
a. Hotel	295
a. Hotel, b. Dharamshala	20
a. Hotel, c. Ashram	6
a. Hotel, d. Guesthouse	6
a. Hotel, c. Ashram	4
b. Dharamshala	41
b. Dharamshala, c. Ashram	14
b. Dharamshala, c. Ashram	6
b. Dharamshala, d. Guesthouse	10
b. Dharamshala, e. Homestay	4
b. Dharamshala, e. Homestay	6
c. Ashram	10
c. Ashram, e. Homestay	2
d. Guesthouse	46
d. Guesthouse, e. Homestay	10
e. Homestay	3
e. Homestay	88
f. other (specify)	20



Preferred Accommodation Typology among visitors based on survey data

types, whereas dormitory rooms/bunk beds and shared rooms are preferred by pilgrims who are budget-conscious and traveling in groups to Ujjain, as shown in the figure below with percentage share of each.

Type of Room Preferred	Frequency of Visitor's Preference
Bunk Beds	10
Double Bed	20
Family Size	6
Not Specified	6
Sharing Room	4
Triple Bed	41



Type of Room Preferred among visitors based on survey data

As indicated in the survey of visitors to Ujjain, it is revealed that the rent paid by visitors varies depending on the type of accommodation and facilities provided. Visitors staying in dharamshalas and religious rest houses usually pay the least amount of rent, which varies from Rs. 200 to Rs. 500 per night. Such accommodations are usually managed by religious trusts and are preferred by pilgrims due to their affordable rates and proximity to major temples like Shri Mahakaleshwar Temple. Visitors preferring to budget hotels and guest houses usually pay a rent ranging from Rs. 700 to Rs. 1,500 per night depending on the type of accommodation and facilities provided. Such accommodations are usually preferred by couples and small families who require a bit more comfort and privacy. For tourists who prefer mid range hotels or better facilities, the rent is likely to vary between Rs. 1,500 and Rs. 3,000 per night. These facilities offer better services like air-conditioning, parking facilities and better amenities in rooms, with a larger share of tourists preferring to dharamshalas and budget hotels due to the short period of stay in the city. The figure below presents the average rent paid by respondents using a combination of bar chart and a table, while the observed range has been described above.

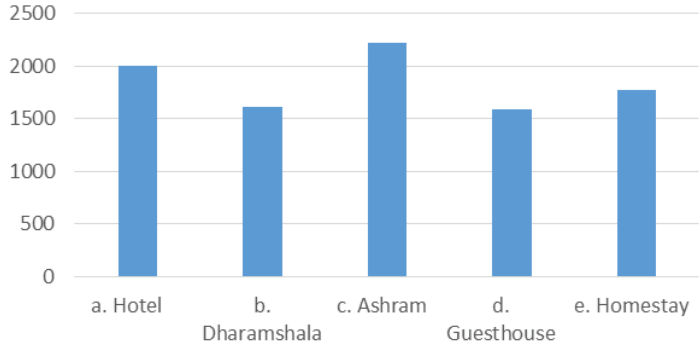
It can be observed that the majority of visitors paid more than ₹4000 for double-bed rooms. This is followed by family-size rooms where rents are predominantly above ₹4000, as well as within the range of ₹1000 – ₹2500 per room. From the survey of visitors conducted in Ujjain, it is observed that the willingness to pay for accommodation varies with the type of accommodation, level of comfort and proximity to major pilgrim centres such as Shri Mahakaleshwar Temple. It is also observed that visitors staying in dharamshalas and religious rest houses show a low level of willingness to pay and the rent level is usually in the range of ₹2000 to ₹2500, as these accommodations provide basic amenities and are preferred by pilgrims and group travellers. Visitors staying in budget hotels and guest houses show a moderate level of willingness to pay, and the rent level is usually in the range of ₹2000 to ₹3000, as these accommodations provide privacy and basic amenities and are preferred by couples and small families. Visitors staying in mid-range hotels and lodges show a higher level of willingness to pay, and the accommodation charges are usually in the range of ₹1,500 to ₹3,000, as these accommodations provide higher amenities such as air-conditioned rooms, attached bathrooms, and higher levels of service.

Discussion

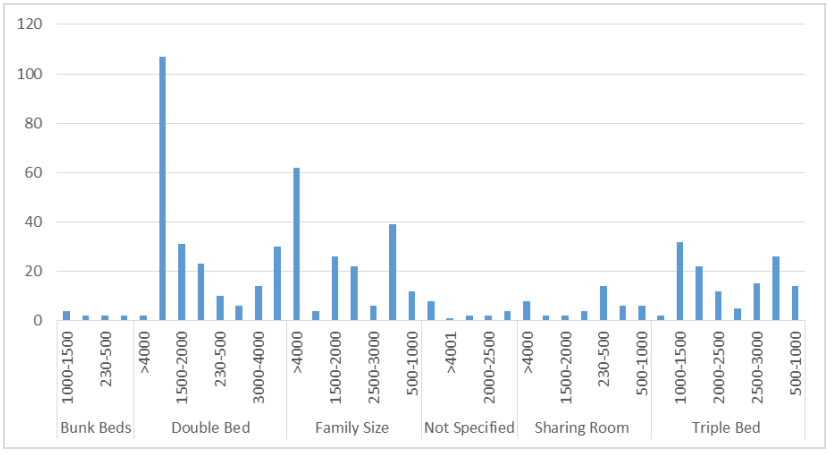
The analysis reveals that a majority of wards fall within the lowest demand range of 1- 471(demand range) accommodation units, including Ward Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10, 13, 15, 16, 17, 19, 20, 24, 25, 26, 27, 36, 39, 41, 42, 43, 44, 45, 46, 47, 49, 52, 53, and 54.

The analysis reveals that a majority of wards fall within the lowest demand range of 1- 471(demand range) accommodation units, including Ward Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10,

Type of Accommodation	Average Rent paid by the Visitors
a. Hotel	2005
b. Dharamshala	1616
c. Ashram	2220
d. Guesthouse	1593
e. Homestay	1774



Average Rent paid by the Visitors as per the Type of Accommodation based on survey data



Average Rent paid by the Visitors and of Room preferred based on survey data

13, 15, 16, 17, 19, 20, 24, 25, 26, 27, 36, 39, 41, 42, 43, 44, 45, 46, 47, 49, 52, 53, and 54. However, significantly higher demand is observed in a few specific wards. Ward Nos. 28 and 31 fall within the highest demand range of 3296-3767(demand range), lying in close proximity to the Mahakal Lok corridor and accommodation units, indicating intense demand for short-term rental housing during peak periods.

The analysis shows that several wards, including Ward Nos. 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 25, 39, 41, 42, 43, 50, and 52, fall within the lowest supply category of 1-15 (supply range) accommodation units, indicating limited availability of short-term rental facilities in these areas. In contrast, Ward Nos. 31, 33, and 35 show the highest supply of accommodation units, representing the wards with relatively greater availability of short-term rental infrastructure within the city.

A particularly significant mismatch between supply and demand is observed in Ward No. 28 near Ujjain and , where the existing supply ranges between (41-93) units, while the demand reaches the highest category of 3296-3767 (demand range) units. This high demand can largely be attributed to the ward's close proximity to Ujjain Junction , making it a preferred location for visitors arriving in the city. Furthermore, the rental market widely operates on informal terms, often lacking regulatory oversight and reliable market information available on open forums. Thus, there is a need for institutional mechanisms capable of formalising existing rental stock while maintaining affordability. Therefore, Affordable Rental Housing Complexes (ARHCs) are needed to be set up, which also aligns with the objectives of and with their rental housing vertical, aiming to improve rental housing governance and increase the availability of affordable rental accommodation in the city, of Simhastha Kumbha Mela 2028.

For building ARHCs, proper location and factors of rent determination must be taken into account. Locational analysis becomes a crucial part in determining the rent and demand of the accommodation units. Additionally, other factors such as proximity to work/ educational institution, accessibility, amenities, facilities become controlling variables for rent determination of a rental unit. A multiple linear regression model has been run in order to determine the importance of each factor in the final rent.

Accommodation Typology	Average Rent (Willingness to Pay)	Identified Range
a. Hotel	2145	2000-2500
b. Dharamshala	2048	2000-2500
c. Ashram	1964	1500-2000
d. Guesthouse	2667	2500-3000
e. Homestay	2000	1500-2500

Accommodation Typology vs Average Rent paid by the Visitors and the identified range of rent the visitors, based on survey data

Table : Summary of the predictors and their influence on rent paid

	Predictor category	Unstandardised coefficients	Standardised coefficients (β)	Significant level	Remarks
Area (sqmt.)	Size	30.182	0.451	0.000	Statistically significant at an α-level of <0.001, the most influential predictor of rent paid out of all the other factors
Garden & green spaces	Facilities	1272.916	0.255	0.000	Statistically significant at an α- level of <0.001; second most influential predictor of rent paid
Very easy	Accessibility	598.635	0.109	0.001	Statistically significant at an α-level of 0.001; third most influential predictor of rent paid
Parking and porch (paid/ non-paid)	Amenities	502.468	0.106	0.002	Statistically significant at an α-level of 0.05
Government permanent	Employment type	623.885	0.080	0.013	Statistically significant at an α-level of 0.05
Near to workplace	Location	194.897	0.038	0.240	Statistically insignificant

The multiple linear regression equation (with unstandardized values) that can be formulated is as follows:

$\hat{Y}$ = 1960.311 + 623.885X1 + 598.635X2 + 1272.916X3 + 194.897X4 + 502.468X5 + 30.182X6

Where, $\hat{Y}$ = Rent paid (dependent variable)

Rs. 1960.311 represents the minimum base rent, independent of the categories mentioned here.

X1 = Employment type (Government permanent)

X2 = Accessibility (Very easy)

X3 = Facilities (Garden and green spaces)

X4 = Location (Near to workplace)

X5 = Amenities (Parking and porch)

X6 = Area (sqmt.)

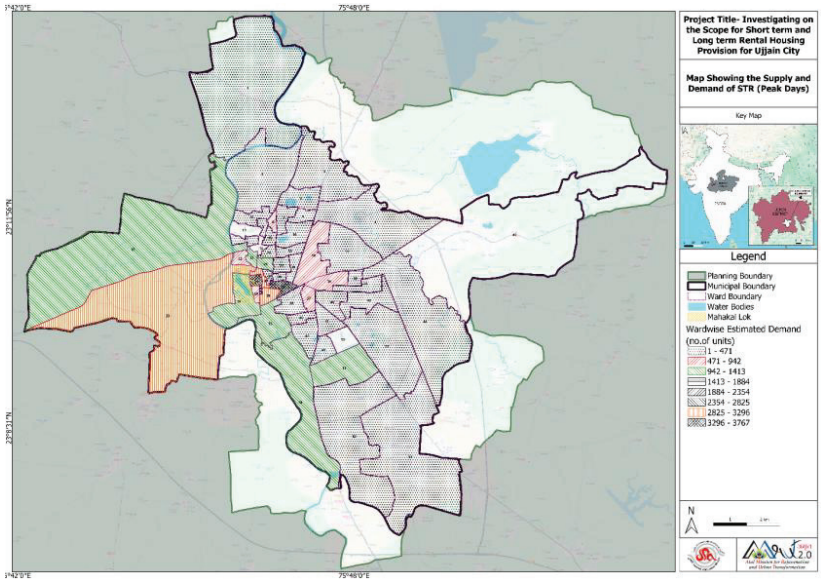
X1 - X5 are categorical variables (dummy variables: 1 = Yes, 0 = No), their coefficients show how much rent increases if that feature is present, keeping other variables constant.

This equation can be an effective tool in predicting rent paid and understanding the influence of each factor on the rent paid. if the ARHCs are developed through PPP model.

From the analysis, three suitable locations have been identified. The first site is in Ward No.33, approximately 5 km from Mahakal Lok Corridor and around 7 km from Ujjain Junction .

This site falls within the Simhastha Kumbh Mela Kshetra boundary and has been categorized under the high suitability category through the suitability analysis. Due to its proximity to major religious tourism destinations, the site is well suited for short-term rental housing, particularly for tourists and pilgrims visiting the city. In addition, the location can also accommodate marginal workers and service providers associated with activities around Mahakal Lok, making it suitable for supporting temporary and seasonal housing demand.

The second site is located in Ward No. 48 along Indore-Dewas Road, which is one of the major transportation corridors of the city. The site is approximately 3 km from Ujjain Junction , 2 km



Ward-wise estimated demand of Short-Term Rental (STR) on peak days

from Nana Kheda Bus Stand, and around 4 km from Mahakal Lok Corridor. Owing to its strategic location and strong connectivity to major transport nodes, this site is highly suitable for both short-term and long-term rental housing. Its location along a major road corridor will facilitate easy access for visitors arriving by road and can help reduce traffic congestion in the core areas of the city. The proposed rental housing complex at this location can cater to the accommodation needs of tourists, visitors, and workers, based on their affordability and housing preferences.

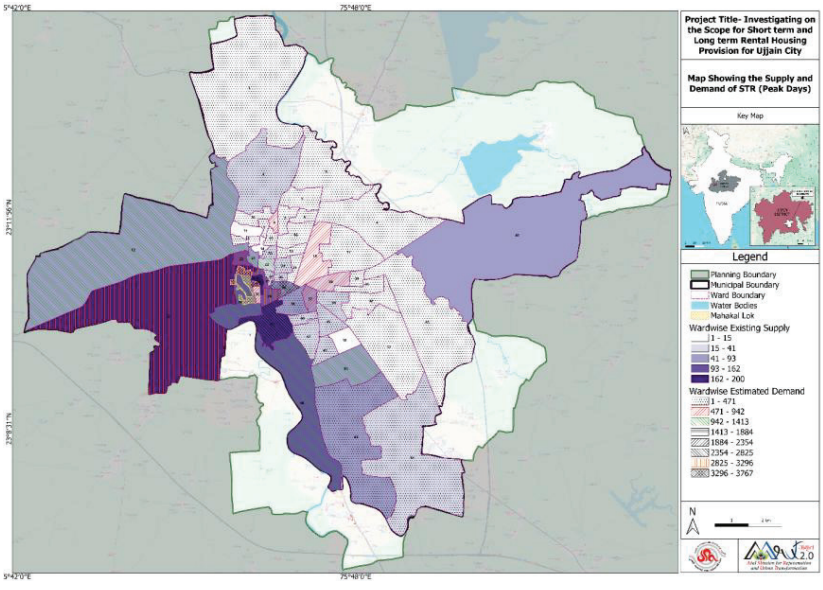
The third site (Site C) is more suitable for long-term rental housing and is strategically located between the major industrial areas of Ujjain. The site lies approximately 3 km from Vikram Nagar and about 3.5 km from Vikram University. Due to its proximity to educational and industrial activity zones, this site is well suited to address the housing demand of students, industrial workers, and migrant labourers who require stable and affordable long-term rental accommodation. The location provides convenient access to employment and educational opportunities, making it an appropriate site for the development of a long-term rental housing complex.

These rental complexes absorb excess demand generated by the visitors including tourists as well as shortterm immigrants without creating unnecessary pressure on the existing accommodation facilities.

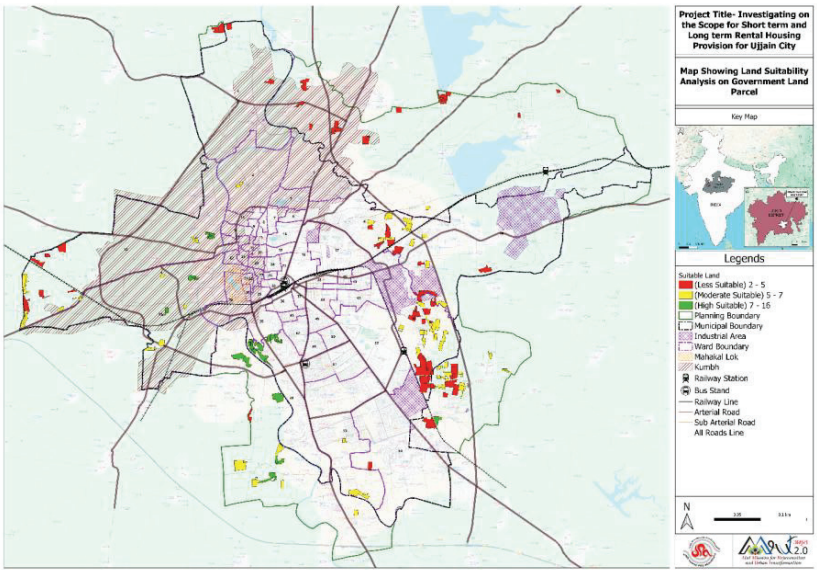
Conclusion

Perception surveys of different stakeholders (landlords, tenants,) alongside GIS and help in constructing ARHCs in an inclusive manner that will cater to the variable needs of the tenants and the visitors – both, and rental/ transient housing in the study area. This also aims at closing the gap between the demand and supply of the accommodation units. These rental units also aim to absorb the periodic demand shock during the major religious festivals such as the upcoming Simhastha Kumbha Mela in 2028 and can also be effective in regulating rent.

This also reinforces the argument that rental housing should not be as merely a housing sub-system but as an integral component of urban



The Short-Term Rental (STR) on peak days



The lands suitability analysis on government land parcel.

landscape ensuring accessibility and mobility of migrating population, affordability and planning interventions that integrate rental housing provision with transport infrastructure and other facilities and therefore likely to generate higher occupancy rates and greater economic viability.

The undertaken in this study provides evidence that strategically located public land parcels can be utilized to address both short-term and long-term rental housing needs. The identified sites demonstrate suitability for different user groups including tourists, pilgrims, students, industrial workers and migrant labourers. Such differentiated planning approaches acknowledge the heterogeneity of rental housing demand and suggest that a single housing model may fall short of addressing the accommodation needs of all the population groups; instead, a diversified rental housing strategy incorporating multiple accommodation typologies appears more suitable for Ujjain's dual-demand nature.

The proposed rental housing Framework also highlights the importance of institutional and governance arrangements in ensuring sustainability.

Public private partnerships specialized rental management agency and dedicated institutional frameworks could significantly improve the operation and maintenance of rental housing projects in Indian cities. Overall, the study demonstrates that rental housing should be recognised as a critical component of urban housing policy rather than a temporary substitute for hip. Formal rental housing provision through strategic planning, institutional support and targeted policy intervention can improve housing accessibility, reduce pressure on informal settlements and increase cities' capacity to accommodate both permanent and in the context of Ujjain's anticipated growth and the upcoming Simhastha 2028. Proactive investment in rental and transient housing infrastructure will be essential for ensuring inclusive and sustainable urban development in Ujjain City.

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TOWNSHIP DEVELOPMENT FOR ACHIEVING INTEGRATED LARGE-SCALE HOUSING IN INDIA

RAMAKRISHNA NALLATHIGA

In the backdrop of rapidly urbanising population, India has been facing twin challenges - the shortfall of urban housing and the lack of affordable housing options in its cities. Traditional house development through public housing programmes as well as private development has the limitation of inability to respond to the challenges by developing scalable housing units required in the cities. Moreover, increasing urbanization is also exerting pressure on the infrastructure facilities and services of existing cities, which the cities find it increasingly difficult to improve due to paucity of funds. Townships, herein, come as the right option wherein such large-scale housing can be developed with all modern facilities and good urban infrastructure. In fact, modern township development is based on the principles of "New Urbanism", which is aimed at creating liveable and sustainable cities. The existing models of township development in some Indian cities demonstrate the potential worthiness of their replication in every big city. However, township development requires promoting policies, investment inflows and enabling regulations that lead to their development at a greater pace. Few states have such township policies in place but more have to fall in line.

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Introduction

India has been on the path of rapid urbanisation for the last few decades. Although the last Census (2011) recorded urbanisation level at 31%, it is estimated to have gone above 40% by now and further estimate to go beyond 50% by 2030. As a result, the urban population is expected to rise from 377 million in 2011 to 675 million by 2035 (UN Habitat, 2022). Such large rise in urban population over a relatively short span of time is going to result in a lot of stress on urban areas. Housing is an important dimension that would undergo further severe stress, when existing backlog housing shortages themselves are quite large. The conventional development model of cities, especially existing, towards creation of housing in the existing urban areas is threatened by the limited amount of land, financial capital and infrastructure available with the urban local governments. At the policy level also, the government does not want to be a provider off housing but only an enabler of housing provision (Nallathiga, 2012). Given these constraints, township development around the existing cities and new areas (as new towns rather) holds a lot of promise, as it involves the private developers to play the execution role in the creation of housing in such vast land. The government can further benefit from regulating township development through stipulation of norms/ standards and enter into public-private partnerships wherein it sees a value proposition.

Township refers to a group of human settlements that are

(d) Architectural quality and design: Good quality architecture in terms of aesthetics, comfort and placement will inspire the communities to nurture their innate talent and flourish the community living.

(e) Traditional neighbourhood: Clear distinction city centre and suburbs with the city centre as a public space for promoting art and culture and suburbs preserving natural form and resources will enhance neighbourhood structure.

(f) Dense living: Achieving the maximum density will lead to tapping the development potential of land and ensures that all activities are very close to each other thereby avoiding transport and better interaction.

(g) Green transportation: Transit development and connectivity improves transportation and integrating it with pedestrian pathway and facilities will promote natural living.

(h) Sustainable development: Communities with minimum environmental impact through eco-friendly technologies, energy efficient practices, low resource use and utilisation of local materials will promote sustainability of neighbourhoods.

(i) Quality of life: Communities built on the above principles will enhance the quality of life and inspire human spirit that enhances their contribution to the society.

3. Factors Driving the Popularity of Townships in India

Townships and their development have been assuming importance for a variety of reasons. The main factors driving the township development are discussed below.

Rapid Urbanisation and Population Growth

India is experiencing rapid urbanisation of its population. Urbanisation in India stood at 31% of total population (Census 2011) but was estimated to have crossed 40% (GoI 2024). The World Bank (2011) projected that the urban population in India would rise from 377 million in 2011 to 590 million by 2031. Such rapid urban growth creates significant strain on current urban infrastructure and housing as well as resulting in congestion, pollution and poor civic services. Townships present a viable solution to these issues by creating a well-planned urban setting that can support the increasing population while maintaining good standard of living.

Rising Middle-Class Aspirations

The emergence of the middle class in India has played a crucial role in stimulating demand for improved housing options. As incomes rise and lifestyle preferences evolve over time, a growing number of Indians are looking for more than mere shelter. They desire access to top-tier amenities, green areas, and a strong sense of community. Townships are designed to meet these expectations by providing a variety of facilities and services that contribute to an enhanced quality of life.

Improved Connectivity and Infrastructure

The advancement of urban infrastructure, including arterial roads, metros and suburban trains, has facilitated the ability of individuals to reside in townships located on the urban periphery, while maintaining strong connections to city centers. Enhanced connectivity has rendered townships becoming an attractive choice for those seeking a more peaceful living environment, without compromising access to urban conveniences.

Government Initiatives and Policies

Government policies and initiatives, including the Smart Cities Mission and Housing for All, have significantly contributed to the advancement of township development. These programs promote the creation of urban areas that are sustainable, inclusive, and economically viable. Furthermore, the enforcement of the Real Estate (Regulation and Development) Act (RERA) has enhanced transparency and accountability within the real estate sector, thereby making township projects more appealing to both developers and investors.

Demand for Sustainable Living

As environmental awareness continues to rise, there is a rise in the demand for sustainable and smart living environments. Townships are frequently developed with sustainability as a core principle, integrating elements such as rainwater collection, solar energy, efficient waste management systems, and ample green areas. These environmentally conscious features not only mitigate ecological impact but also offer residents a healthier and more sustainable way of life. Several smart features of technology

formed in greenfield areas around or near the cities, but there is no standard definition across cities, states and countries. This absence of a common definition allows for a wide range of land areas from 25 acres to 2,500 acres to be classified as townships. However, over time, the Indian state governments and cities began to establish the criteria for terming township development. In a good number of them, the minimum area of land required for a township project is set at 100 acres. Besides, the planning authorities outline other development regulations that are applicable to townships, such as minimum road/ street widths and minimum amount/ share of land uses. Depending on their size, township projects are also expected to offer certain social infrastructure and ancillary services such as primary schools and healthcare facilities as well as a community centres and recreation facilities. Township development projects exceeding a size of 1,000 acres may be designated as Integrated Townships. Cities like Gurgaon, Bangalore and Pune have long ago embraced the concept of townships (including integrated townships), which led to significant development of residential housing projects featuring ultra-modern and luxurious amenities. The concept of townships has gained traction in response to the increasing demand for luxury apartments within integrated townships. These expansive complexes, equipped with essential facilities such as schools, hospitals, shopping malls, gymnasium clubs and health spas, offer the unique living experience that contemporary residents seek.

The concept of townships was first introduced in India in the form of the current Chandigarh city, which was designed by Architect Le Corbusier as a planned greenfield town in 1951, which covered an area of 114 sq km. This initiative was followed by the development of additional planned cities and satellite townships in India. By 1971, Navi Mumbai emerged as the largest planned township in the country, encompassing a vast area of 344 sq km. This satellite township was specifically designed to address the growing population and the associated infrastructure demands of Mumbai. The government was compelled to initiate such a significant planned development. However, the groundwork for township development had been laid over several decades, initially manifesting in a less organised manner around the city's periphery, yet still connected to the central urban area. As the city expanded, the notion of integrated townships developed beyond the main urban center gained traction. Integrated Township includes housing, commercial premises, hotels, resorts, city and regional level urban infrastructure facilities such as roads and bridges and mass rapid transit systems. Development of core and allied infrastructure forms an integrated part of township development. These townships were designed to be self-sustaining, providing residential options through plotted developments, housing units, and essential social and physical infrastructure, as well as areas for economic activities. The plans for self-sustaining townships aimed to reduce the necessity for residents to travel to the main city for employment, education, or recreational purposes.

Principles of Township Development

One of the important underlying principles behind the township development in modern times is "New Urbanism", which is aimed at creating liveable and sustainable cities. New Urbanism emphasizes upon the following elements of urban development:

(a) *Walkability:* It involves creating the settlement systems that ensure all the facilities required for living and work are available within walking distance. The neighbourhoods need to have pedestrian-friendly street design and access to some of the important central spaces can even only be through pedestrian pathways.

(b) Connectivity: Inter-connected street network designed as a hierarchical street system would enhance traffic flow by effective traffic circulation and combining it with pedestrian pathways will further enhance the overall effectiveness.

(c) Mixed use and diversity of users: Mixed land use, rather than exclusive land use allocation, would make the communities more livable with an improved ease of access and mixed use within buildings also further avoids unnecessary travel. Diversity of communities in terms of race/ethnicity, age-groups, socio-economics and culture will promote interaction and instil community sense among the inhabitants.

are also getting embedded into townships.

4. Benefits of Township Development

Townships offer numerous benefits that make them an attractive option in terms of offering several benefits to those living in them when compared to the normal human settlements. Some of the key advantages include:

Integrated Living

One of the key advantages of residing in a township is the ease of access to essential amenities located nearby. Townships offer a comprehensive solution for daily necessities, encompassing educational institutions, healthcare facilities, shopping centers, and recreational areas. This cohesive living environment minimizes commuting time and effort, enabling residents to achieve an improved balance between work and personal life.

Enhanced Security

Townships are generally enclosed communities that offer round-the-clock security, CCTV monitoring, and regulated entry points. This arrangement enhances the sense of safety and serenity for residents, particularly benefiting families with children and elderly individuals.

Community Living

Townships are structured to promote a strong sense of community among their inhabitants. By providing shared amenities like parks, clubhouses, and sports facilities, residents are afforded numerous opportunities to engage with one another and cultivate relationships with their neighbours. This communal atmosphere is frequently absent in conventional urban environments, where individuals often experience greater social isolation.

Better Quality of Life

Townships are intended to enhance the quality of life through meticulously planned infrastructure, abundant green areas, and a pristine environment. The presence of recreational amenities, including swimming pools, fitness centers, and sports courts, enables residents to maintain a healthy and active lifestyle. Furthermore, the availability of parks and green spaces contributes to a tranquil and calming atmosphere, which is vital for mental health.

Long-Term Investment

Township housing can also represent a prudent financial choice. The thoughtfully designed infrastructure, available amenities, and enhanced security features of townships render them appealing to both end-users and investors alike. Consequently, properties within these areas frequently experience value appreciation over time, yielding a favorable return on investment.

5. Sustainability and Township Development

Sustainable Development can be defined as the development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED, 1987). Achieving sustainable development can be done through many means, but one such important means is building the real estate and urban infrastructure in a sustainable manner. Therefore, sustainable development of townships assumes importance towards reducing energy consumption, emissions and resource utilization. Features of townships that would lead to sustainable urban development include:

1. *Green Housing* – Environmentally sustainable construction practices; minimized construction expenses; energy-efficient residences; implementation of water harvesting, recycling, and reuse systems; segregation of waste into biodegradable and non-biodegradable categories; establishment of green spaces within and surrounding residential areas.

2. *Energy Efficient Habitat* – Adoption of renewable energy sources such as wind and solar power; systems for monitoring energy consumption; development of green buildings, complexes, and office spaces; promotion of fuel-efficient transportation within the township.

3. *Integrated Waste Management* – Achieving zero negative externalities in waste management; comprehensive strategies for waste disposal, recycling, processing, and the reuse of wastewater.

4. *Infrastructure* – Developed and maintained by the developer through Public-Private Partnerships; enhancement and modernisation of infrastructure within and around the township.

5. *Walk, Work, and Play Concept* – Reduced transportation costs; lower fuel consumption;

promotion of public transport, walking, and cycling; enhanced human productivity; time savings for individuals.

6. *Private Initiative* – Decreased pressure on city infrastructure; reduced demands on local governments and municipal authorities; the government acts primarily as a facilitator rather than a provider.

7. *Economies of Scale* – Consolidating various township initiatives for infrastructure and construction to optimize and lower costs; utilisation of common construction materials across the site; establishment of a shared labour pool and training programs.

6. Successful Cases of Township Development

Four Indian states have their individual township policies that resulted in some ground level initiatives. We consider the following four major states for consideration for the review of policies for township development promotion and regulation:

1) Gujarat

2) Uttar Pradesh

3) Maharashtra

4) West Bengal

6.1 Case 1: IFFCO Township, Kalol (Gujarat)

The IFFCO Township in Kalol serves as a remarkable example of the integration of sustainability and cost-effectiveness in the sector of low-cost housing in India. Established by the Indian Farmers Fertiliser Cooperative Limited (IFFCO), this township transcends the concept of a mere housing development; it represents a comprehensive manifestation of meticulous urban planning and design. IFFCO Township distinguishes itself through innovative design principles that optimize space for maximum efficiency.

Green Building Initiatives for Environmental Stewardship

Sustainability is a fundamental aspect of the architectural design in IFFCO Township. The development integrates environmentally friendly practices, including the use of energy-efficient materials, systems for rainwater harvesting, and effective waste management solutions.

Cost-Efficient Construction Practices

IFFCO Township emphasises the importance of cost-effective construction methods to maintain affordability while upholding quality standards. The incorporation of locally sourced materials, effective project management, and optimised construction procedures plays a significant role in reducing overall expenses.

Design for Varied Demographics

The inclusive design of IFFCO Township addresses the varied demographics of Kalol's residents. It offers a range of housing options, from compact units ideal for individuals or small families to more spacious homes designed for larger, extended families. This thoughtful approach ensures that the project accommodates the diverse needs of the community, promoting inclusivity and establishing a living environment that reflects the social dynamics of Kalol.

Communal Spaces for Social Interaction

IFFCO Township adopts a community-centric approach by incorporating communal spaces within the complex. Parks, recreational areas, and community centers serve as hubs for social interaction, fostering a sense of community among residents. This approach recognizes the importance of shared spaces in enhancing the overall quality of life.

Community Engagement in Decision-Making

A notable aspect of IFFCO Township's community-centric approach is the active participation of residents in decision-making processes.

6.2 Case 2: Township Development in Pune (Maharashtra)

The development of township has evolved considerably in the city as well with a move towards efficient and smarter townships that have been designed over a period of time. Nallathiga et al (2016) discuss the "evolved-ness" of township development through 3 case studies of town ship development in Pune.

Case Study 1: Magarpatta City

The city is constructed as a fortified enclave, featuring secure gates and monitored access points. Entry is strictly regulated, requiring security clearance for all individuals. Furthermore, the premises are under constant surveillance by security personnel, both day and night. Professional oversight ensures compliance with safety regulations concerning fire prevention, electrical systems, and internal traffic management. Approximately one-third of

the township, encompassing around 120 acres, is dedicated to gardens. In addition, the area is adorned with trees, landscaped areas, and green pathways along the streets. Recognised as an Oxygen Zone, the city maintains a pollution-free environment. The implementation of sustainable practices, including solar water heating, solar lighting, and proper waste management, contributes to environmental preservation.

Case Study 2: Amanora Park Town

Amanora Park Township stands out as a distinctive and exclusive initiative, marking the first of its kind in Maharashtra. Spanning 400 acres, this township features 70 acres of thoughtfully designed, clean, and open spaces, located in Hadapsar, Pune. The project is developed by City Corporation Limited, a prominent real estate company. Amanora embodies the envisioned growth of a new township that incorporates favorable urban characteristics while ensuring the preservation of significant elements of the current landscape, including the nalla, clusters of trees, slopes, and natural drainage systems. The aim is to provide comfort and convenience for residents while maintaining the ecological balance of the area. Amanora Park Town represents a self-sufficient paradigm of urban living that seamlessly blends contemporary values with traditional community life, establishing Amanora as a benchmark for comfort, security, and dependability. The township boasts a comprehensive array of amenities, facilities, and exquisite features that elevate the living experience to one of exceptional luxury.

6.3 Case 3: New Township in the fringe of Kolkata (West Bengal)

The Sukhobrishti project is one of the largest mass housing development projects in India. It was initiated by the West Bengal Housing Infrastructure Development Company (WBHIDCO), a Government owned company that was set up for the state infrastructure development with a focus on New Town, Kolkata. The Bengal Shapoorji Housing Development Pvt. Ltd (BSHDPL), a group company of Shapoorji Pallonji and Company Pvt. Ltd (SPCL), has been developing the project by constructing low-cost housing units in New Town Kolkata for 20,000 families. This development is primarily to cater to the housing needs of Low Income and Middle Income Groups (LIG and MIG) of households. At the end of this project, it is expected house around 1,00,000people in the township.

The Sukhobristi project was conceptualised as a Public – Private Partnership (PPP) project with the WBHIDCO and the SPCL representing public and private sectors respectively. The project is based on the model of cross subsidizing the development of MIG and LIG housing units with the utilisation of some amount land outside the project area for commercial activity. Kolkata international airport is 12 km away from the project and Howrah railway station is 27 km, which are connected through bus. The road connectivity for the project is provided by the West Bengal state government and the centralized water storage system, drainage and sanitation are provided by the Kolkata Municipal Corporation.

7. Major Challenges of Township Development

While townships offer numerous benefits, they also come with their own set of challenges. Some of the key challenges include:

1. High Initial Investment

The establishment of a township necessitates considerable land and financial investment. This requirement can pose a challenge for smaller developers who may lack the necessary financial means to engage in such extensive projects. Furthermore, the elevated cost of land in and near major urban centers can render township development economically impractical in certain instances.

2. Longer Project Timelines

Township projects generally involve extensive developments that require multiple years to finalise. This presents a significant challenge for developers, who must effectively manage cash flow and maintain the project's viability during the entire construction phase. Additionally, any delays in the completion of the project can impact buyers, resulting in extended waiting periods before they can occupy their new homes.

3. Regulatory Hurdles

Navigating the intricate regulatory environment in India presents significant challenges for township developers. Securing the requisite approvals and clearances from multiple government agencies often

proves to be a lengthy and arduous endeavor. Furthermore, alterations in government policies or regulations may affect the feasibility of township projects.

4. Sustainability Concerns

Numerous townships are planned with sustainability as a core principle; however, there are apprehensions regarding the enduring environmental consequences of extensive developments. The establishment of townships may result in the depletion of agricultural land, deforestation, and disturbances to local ecosystems. It is essential to ensure that the development of townships is conducted in a sustainable and environmentally conscientious way to secure their long-term viability.

8. Conclusion

Townships and their development holds a lot of potential and promise when the urbanisation pressures are leading to massive urban housing shortages in India. Unlike the slow pace of traditional housing development in cities, townships in greenfield areas can be developed at a good pace in several phases towards creating a large amount of housing stock. Townships hold the promise of new model of urban development proposed under the 'New Urbanism'. They have the advantage of integrating residential housing with all other aspects of living i.e., working spaces, commercial places, physical and social infrastructure, recreational facilities and proximity to other services. Townships have been becoming popular among the investors as well as end-users for their total package appeal. The sustainability features are making them further attractive. The township development experience in some of the well-established cities, especially in Pune, shows that it holds a lot of promise and potential to experiment with. The State governments need to form appropriate policies for promoting the development of townships and come out with development norms/ guidelines. They can also forge Public-Private Partnerships (PPP) with the private developers towards creating them on the public land in order to develop affordable housing.

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