Journal of Marketing & Social Research

ISSN (Online): 3008-0711

Volume: 02 | Issue 07 | 2025

Journal homepage: https://jmsr-online.com/

Research Article

Demand Dynamics in Mumbai's TDR Market: The Role of Digital Transformation in Real Estate Business and Urban Planning

Komal Mimani[1], Prof. Astha Agarwalla[2] and Anuj Vishwakarma[3]

[1]Vivek College of Commerce & Adani University

[2]CEPT University

[3]CEPT University

Received: 18/08/2025; Revision: 30/08/2025; Accepted: 03/09/2025; Published: 20/09/2025

***Corresponding author: Komal Mimani**

Abstract: Limited useable urban land is a problem in many densely populated Indian cities, and the constructed heritage may be at danger throughout the rebuilding process. Improvements to the built environment and social wellbeing may come with significant costs and financial loss, especially in cities where land is highly valued. Managing socio-environmental objectives alongside economic benefits in urban revitalization continues to be difficult. To enable private redevelopment, clear and effective mechanisms are crucial. Transferable Development Rights (TDR) provide an organizational approach that aligns public and private interests while facilitating infrastructure development in the face of land limitations. Nonetheless, the lack of market transparency, changes in demand, and intricate regulations frequently hinder its efficiency. This study examines the TDR market in Mumbai, concentrating on demand-side dynamics, developer choices, regulatory and spatial influences, and the impact of digital implementation. Through qualitative insights, the research illustrates how project and site-specific factors influence developer choices. Essential elements affecting market responsiveness encompass infrastructure preparedness, regulatory transparency, risk tolerance, and site preference. The results guide specific policy and practical modelling to improve market efficiency and promote sustainable growth. Digital platforms can revolutionize TDR transactions and better align them with changing urban demands through real-time tracking, clear pricing, and simplified approvals.

Keywords: TDR, Demand-side dynamics, infrastructure, Digital Platform.

INTRODUCTION

The Transferable Development Rights (TDRs) are a planning approach that separates land ownership from the right to develop it. This distinction has two main objectives: to limit the amount of development allowed in a given area, and to enable the controlled transfer of development potential between different locations. TDRs thus become the operational tool through which such spatial reallocation is achieved.

In quest of these dual objectives, planning authorities enforce strict density regulations, and they only allow relaxations through specific provisions, including the issuing of TDRs. Due to their limited availability and state regulation, these rights create market scarcity, which promotes tradable value. This valuation has encouraged urban planning authorities, particularly in land-constrained or fiscally limited contexts, to use TDRs as a financing mechanism for public infrastructure and land acquisition (Shih et al., 2018). In this way, TDRs function as a kind of regulatory currency, allowing the state to effectively leverage its control over airspace or buildable volume to finance welfare-enhancing initiatives through the monetization of unused or transferred development rights. Originating in the developed world, TDRs were initially employed to steer urban density away from ecologically sensitive or historically significant areas toward zones with greater development potential. Robust planning controls were established to ensure that recipient areas could absorb the additional density without facing congestion, degradation of urban form, or unaffordable housing costs (Levinson, 1997). On the other hand, TDRs are increasingly becoming tools for generating income in poor nations. In situations where governments lack direct financial and administrative capabilities, their marketability becomes crucial to the execution of projects. By improving project feasibility for private developers through FSI relaxations, TDRs are frequently used to help slum rehabilitation in Indian cities like Ahmedabad (Routh and Bhavsar, 2024). Therefore, the presence of a viable and effective TDR market is essential for encouraging private sector involvement in public-focused urban reforms.

Using TDRs as an off-budget technique comes with its limitations. Since issuing TDRs requires a deliberate policy decision, regulators may depend too heavily on this method. Urban planning rules dictate the location and density of development, so TDR supply is tied to these regulations. Uncontrolled TDR issuance can lead to distorted growth patterns, necessitating strict limits and monitoring. The demand for TDRs from developers is influenced by regulatory stability and potential profits, ultimately deciding if releasing TDRs is viable.

Nonetheless, there are structural risks linked to an overreliance on TDR issuance. The mechanism requires regulation through strategic caps and careful spatial planning, as it directly influences city form by allowing

vertical growth. The ability of planning authorities to issue additional TDRs relies on current market demand and legislative limits. An excess of supply or inadequately aimed issuance may result in congestion, strain on the infrastructure, or uneven development patterns. Consequently, it is crucial to understand the elements affecting developers' need for TDRs to ensure the tool's effectiveness and alignment with sustainable urban development objectives.

Some Indian towns have implemented TDR with different levels of success. Mumbai is the earliest TDR market, established under Development Control Regulation (DCR) 1991. TDR is commonly utilized for urban renewal, expanding roadways, and preserving historical sites with a demand-oriented pricing model. Pune's demand has been inconsistent despite the introduction of TDR in 1997, attributed to the city's surplus land and additional incentives such as premium FSI. Hyderabad and Bengaluru have struggled due to ineffective processes and insufficient market infrastructure. In contrast, Ahmedabad has effectively employed TDR for slum redevelopment, historical preservation, and land acquisition. Refer to the table below:

City	Year Introduced	Certificate Issued/ Volume	Primary Use	Recent Developments
Mumbai	1991	3,178 (≈12.93 million m²)	Slum redevelopment, heritage conservation, infrastructural development	Most mature market: fully digitized TDR market via GIS
Hyderabad	2006	>600	Infrastructure acquisition, heritage/lake preservation	Scope: city-wide policy Online TDR bank
Chennai	2009	NA	Metro rail and Road widening	Partial Implementation of policy
Ahmedabad	2010	99 heritage TDR certificates (13,518 m² issued, 41% utilized)	Heritage conservation, Slum redevelopment, public infrastructure	Conventionally Applied Heritage TDR.
Bengaluru	2015	NA	Road widening, metro rail	Limited Implementation of policy

Source: NITI Aayog. (2020). Reforms in Urban Planning Capacity in India (Vol. 1). Government of India. Retrieved from https://www.niti.gov.in. Centre for Science and Environment (CSE). (2021). TDR as a Tool for Land Acquisition and Urban Planning. Retrieved from https://www.cseindia.org. Chennai Metropolitan Development Authority (CMDA). (2009). Second Master Plan for Chennai Metropolitan Area, 2026. Retrieved from https://www.cmdachennai.gov.in

This study investigates the demand-side dynamics of real estate development in Mumbai using TDR as a Land value capture tool . By examining factors such as locational context, building typology, regulatory constraints, and pricing mechanisms, the research offers insights into how and why developers choose to engage with the TDR market. The findings contribute to a broader understanding of urban land instruments and revolutionizing digital platforms, where TDRs are increasingly relied upon as fiscal and spatial planning tools amid complex governance environments. The next section discusses the literature precisely dealing with demand for TDRs, as an instrument. Section 3 provides details about the TDR market in Mumbai and the crucial demand side factors. Section 4 concludes with discussion along with recommendations.

LITERATURE REVIEW

Studies on TDRs as an institutional innovation to address property rights conflicts in urban conservation has taken place in many countries drawing comparative insights from other jurisdictions (Hou, Chan, and Li (2018). TDRs have been considered as regulatory instruments for density control on a global scale. (Kaplowitz et. al., 2008). TDRs are cost effective means of regulating externalities (Levinson, 1997). In order to balance property rights with environmental and cultural preservation, studies examine the legal, economic, and planning underpinnings of development rights transfer as a novel land-use instrument (Costonis, J. J. (1973). The function of the planning authority in carrying out the mechanism has also been covered in studies. In several nations, the local government actively participates in the system by mediating disputes between buyers and sellers and issuing certifications. These transactions are permitted in the market in many other nations, enabling price discovery based only on market conditions. (McCollen and Walls, 2009).

Since transferability turns it into a market-based tool, the program's effectiveness hinges on the existence of a robust, deep market that is effective at price discovery (Kopits, 2008). Studies addressing the constraints of planners' land use distribution have documented the tool's effectiveness as a market-based device for density control (Mills, 1980; McConnel and Walls, 2009).

The CEPACs in São Paulo establish development rights for upzoning and sell those rights to developers in order to fund public investments. (Sandroni, 2011). Curitiba uses natural drainage systems to mitigate floods and TDR for social housing and environmental protection. (Smolka, 2013).Yet TDR's success has been limited in developing countries, due to procedural inefficiencies and complexities of urban land and housing markets (Chapin, 2012; Pijor, 1986; Pruetz and Standridge, 2008). TDRs detach zoned development rights from site-specific locations (Sclar, 2021). It is much more crucial for local governments to assist in establishing a healthy market in developing nations, since the program's goal is to finance development rather than density management.

The use of TDRs for different purposes has been debated in the literature, along with the legislative instruments to implement them. (Lane, 1998). The mechanism's most important application has been to strategically regulate density and development, which was promoted early on by Rose (1975). The literature also supports using it as a tool to take the role of density restrictions. The development of such proposals depends on the evaluation of the market. (Mills, 1980).

Although the operation and results of TDR markets have been well studied in the literature, little is known about how they might be used as tools for economic and spatial redistribution. The ability of one landowner to over-develop utilizing TDRs creates a compensatory balance when another is forced to under-develop, frequently as a result of regulatory restrictions such land purchase for public infrastructure. In these situations, TDRs serve as instruments to disperse development potential and related welfare in addition to being tradable rights. Importantly, in order to provide equitable compensation, the market value of TDRs should represent the opportunity cost borne by the original landowner. This knowledge emphasizes the necessity of a more sophisticated valuation methodology that takes market efficiency and geographical equity into consideration.

TDR MARKET IN MUMBAI

Mumbai, India's financial capital, faces severe limitations in land availability, congestion, and uneven urban development. Mumbai's urban planners have responded to urban growth through the 1991 Municipal Corporation Act by using TDR to support projects such as infrastructure expansion and slum rehabilitation without immediate investment. TDR allows landowners to exchange land for Development Right Certificates, promoting building upwards while preserving spaces. Developers can use or profit from the certificates that grant Floor Space Index entitlements, allowing for greater development in designated areas. Mumbai's rapid urbanization requires infrastructure that contemporary financial strategies must support, often in the face of significant cost difficulties when governments use traditional land acquisition methods. This study examines the evolution of Mumbai's TDR system focusing on market drivers, regulatory practices, and spatial impacts. Four types of TDR - Reservation, Road, Slum, and Heritage TDR - are part of Mumbai's urban planning. The information provides clarity on how various forms of TDR contribute to urban planning and redevelopment strategies.

TDR Type	Purpose / Origin	Typical Use / Consumption	Notes
Road TDR	When land is taken for road widening or infrastructure projects these TDRs are issued to landowners	They are consumed to build additional FSI in receiving areas	Surrendered land gets incentivised for public infrastructure
Reserved-Plots TDR	Allocation of land for public amenities (parks, schools, etc.)	Redistributed to the development zones that are in high-demand	Key category with frequent urban application
Slum-Rehabilitation TDR	It is consumed for land used to rehabilitate slum dwellers under the Slum Rehabilitation Authority (SRA)	Project under SRA are redeveloped using this	In Mumbai, this TDR is used most extensively
Heritage (Cess) TDR	For conserving heritage structures/dilapidated buildings this TDR is awarded	Used city-wide, specifically in affluent suburbs	It aims to support and incentivise heritage conservation through FSI

The table below presents values that can help illustrate the role of TDR in shaping urban development, infrastructure contributions, and regulatory trade-offs.

TDR Type	TDR Issued (sq m)	TDR Utilized (sq m)
Road TDR	1,111,360	1,048,000
Reserved-Plots TDR	30,65,080	29,96,000
Slum-Rehab TDR	76,04,000	73,61,000
Heritage TDR	2,100	1,300
Total	**1,17,80,000**	**1,14,05,000**

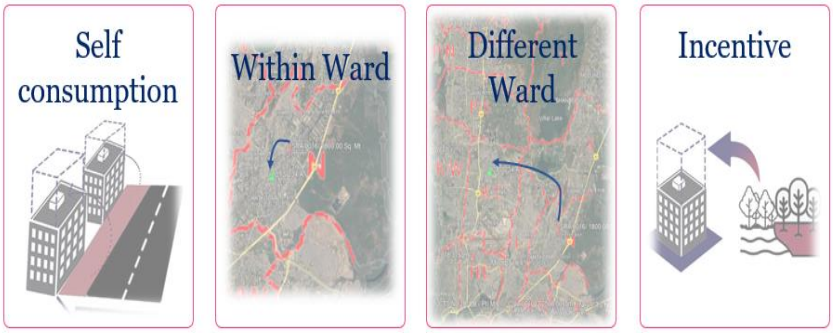
Table 1: TDR data, Source PEATA-2016

Sr. No.	Instances of Land Surrender	Extent of TDR	Remarks/Conditions
1a	Entire plot reserved for public purpose in the Development Plan (DP) and transferred to **MCGM/Appropriate Authority**.	- **Mumbai City (Island City):** 2.5 times the surrendered area. *(Max 2.5)* - **Mumbai Suburban/Extended Suburban:** 2 times the surrendered area. *(Max 2.0)*	Land must not have been handed over earlier, and no FSI/TDR/monetary compensation should have been availed.
1b	Development of lands of **Cotton Textile Mills** under Regulation 35, with land transferred to **MCGM/MHADA/Authority**.	BUA as per **zonal (basic) FSI** of transferred land.	Only if land has not been handed over and no FSI benefit is approved.
1c	**DP roads, river widening, major nalla widening**—land transferred to **MCGM**.	- **Mumbai City:** 2.5 times the surrendered area. - **Mumbai Suburban:** 2 times the surrendered area.	No FSI benefit should be approved or availed.
1d	**Setback due to road widening** or right of way for land-locked plots.	BUA as per **zonal (basic) FSI**.	If plot is fully developed or no new development is proposed.
2	If the owner/developer **constructs the public reservation** (e.g., school, hospital) but cannot use the full zonal FSI.	BUA equal to **plot area** transferred.	Due to **planning constraints**.
3	BUA in **lieu of construction cost** for an amenity handed over to MCGM.	If BUA is not availed as FSI, it can be converted into **TDR**.	Due to **planning constraints**.
4	**Redevelopment projects** under: 33(7), 33(7B), 33(8), 33(9) (Cluster Development), 33(10) (Slum Rehabilitation), 33(11) (Transit Tenements).	As per **DCPR provisions**.	Depends on **specific regulation**.
5	Affordable housing projects **on unreserved private land**, handed over free to **MCGM**.	As per the corresponding **DCPR regulation**.	Full plot must be transferred.
6	**Heritage buildings**, where development is not permitted under Regulation 52.	BUA = **(Zonal FSI + plot area) - BUA of heritage structure**.	Development is restricted, with **MHCC approval**.
7	**Encumbered plots** required for public projects.	- **Vacant land:** TDR as per **2.5 FSI (Island City) / 2.0 FSI (Suburban)**. - **Encumbered land:** 50% of **zonal FSI**.	Requires verification by **Project Implementing Authority**.

8	**Unreserved accessible plots**, if voluntarily offered and required by **MCGM** for public use.	- **Island City:** 2.5 times the surrendered area. - **Suburban:** 2 times the surrendered area.	Only for **essential public services** (e.g., waste management, police chowky).
9	**Reserved DP roads/public purposes** in SDZ areas with existing access.	- **Island City:** 2.5 times the surrendered area. - **Suburban:** 2 times the surrendered area.	Must be **accessible from an existing road**.
10	**Roads/access handed over** for Affordable Housing (AH), Public Open Spaces (POS), or Open Areas (OA).	BUA equal to **land transferred**.	Compensation may also be granted as **FSI instead of TDR**.

Table 2: DCPR 2034

TDR use rates in road and reserved plots are more than 90%. The largest portion of TDR issuance is Slum Rehabilitation TDR, which is 76 lakh sq m issued and roughly 74 lakh sq m utilized. Heritage TDR has a major conservation impact while being a tiny category in volume (just over 2,000 square meters). Mumbai's TDR system accomplishes two goals: it promotes the establishment of TDRs by enhancing public infrastructure, particularly in informal settlements, and it regulates their execution by setting eligibility standards based on road width specifications. The Development Control and Promotion Regulations (DCPR) 2034 mark a major change in policy by removing the prior geographical restrictions that restricted TDR use to the city's northern corridors. Within the same municipal ward, intra-ward transfers and consumption of TDRs promotes localized densification; self-consumption permits developers to use the granted development rights on the original parcel itself; intra-ward transfer permits the spatial redistribution of development potential across multiple administrative jurisdictions; and incentive-based allocation links the granting of TDRs to specific public-interest outcomes, such as environmental conservation or infrastructure provision. Together, these strategies demonstrate the flexibility of the TDR system as a regulatory and market-based instrument that enables cities to intentionally manage density and align private investment with broader urban policy objectives.



Although supply-side factors of TDR generation (such as road widening and slum restoration) have been extensively studied, there is dearth of studies to evaluate demand for TDRs, including developer perspectives, factors influencing market pricing, and how laws affect consumption patterns. By examining the demand structure of Mumbai's TDR market, this paper fills this gap. The study intends to encourage equitable, sustainable urban development and improve the efficiency of the TDR market by offering field-based observations and policy recommendations through this analysis.

The requirement for TDR in Mumbai is strongly tied to legislative frameworks, project-specific policies, and market dynamics. Developers buy TDRs mainly to exceed the minimum allowed Floor Space Index (FSI). This is particularly true in areas with high property values and business opportunities. Although policy changes allow TDR use across the city, demand remains concentrated in suburban areas like Bandra and Andheri. Market trends impact TDR uptake; booms drive purchases while downturns cut demand. Developers prefer official channels for their clarity and stability. They compare TDR costs to Premium FSI. Luxury and commercial projects generate higher TDR use due to budget and rule constraints on affordable housing. These complex factors highlight the necessity of adjusting policies to strike a balance between housing objectives, market efficiency, and spatial equality.

Units	Administrative Coverage	Land Area (Sq. Km.)
Mumbai City	Mumbai Island City District only	68.71
Mumbai Suburbs and Extended Suburbs	Mumbai Suburban District only	369.00
Greater Mumbai (Under MCGM)	**Mumbai City and Mumbai Suburban Districts**	**437.71**
Mumbai Metropolitan Region	Greater Mumbai, Urban Region plus Thane	4,355.00

(MMR)	District and Raigad District Palghar (7 Municipal Corporations and 13 Municipal Councils)	

Table 3: Source MCGM city profile of Greater Mumbai

Zone	Wards	Key Areas
South Mumbai (Island City)	A, B, C, D, E	Colaba, Fort, Marine Drive, Byculla, Girgaon
Central Mumbai	F-South, F-North, G-South, G-North	Parel, Dadar, Matunga, Sion, Dharavi
Western Suburbs I &II	H-East, H-West, K-East, K-West, P-South, P-North, R-South, R-Central, R-North	Bandra, Andheri, Goregaon, Borivali, Malad
Eastern Suburbs	L, M-East, M-West, N, S, T	Kurla, Chembur, Ghatkopar, Bhandup, Mulund

The TDR market in Mumbai faces significant operational and structural challenges that hinder its effectiveness, even though it has potential as a planning instrument. Project planning and budgeting turn uncertain because of market fluctuations, resulting from unstable and changing prices. Legal and administrative delays in transferring and approving TDR certificates further disrupt construction schedules and discourage developers. Market efficiency is constrained while information asymmetry is promoted due to a persistent absence of transparency, as evidenced by the unavailability of public data regarding transaction volumes, pricing, and developer engagement. Mumbai's TDR system showcases significant spatial versatility, allowing rights created in any land-use zone to be applied throughout both the Island City and suburban regions. The valuation formula for cross-location transfers : **(X = (Rg/Rr) × Y)**

Where, X = Permissible TDR (sq.m.) on the receiving plot; Rg = Land rate per sq.m. (₹) as per Annual Statement of Rates (ASR) of the generating plot in the generating year.; Rr = Land rate per sq.m. (₹) as per ASR of the receiving plot in the generating year; Y = TDR debited from DRC (sq.m.).

Sr No	**Areas**	**Zone**	**Road Width**	**Zonal (Basic) FSI**	**Additional FSI on Payment of Premium**	**Admissible TDR**	**Permissible FSI (4+5+6)**
II	Suburbs and Extended Suburbs	Residential / Commercial	Less than 9m	1.0	-	-	1.0
			9m and above but <12.00m	1.0	0.5	0.5	2.0
			12.00m and above but <18.00m	1.0	0.5	0.7	2.2
			18.00m and above but <27m	1.0	0.5	0.9	2.4

			27m and above	1.0	0.5	1.0	2.5

Table 4: Development Control and Promotion regulations 2034

Previous studies have explored the relationship between urban land markets and the TDR system, framing TDRs as a market-driven tool shaped by regulatory structures and spatial planning objectives (Linkous, 2017). This research carried out semi-structured interviews with developers and stakeholders active in various areas of the city. Internationally, Hou, Chan, and Li (2018) examine the role of TDR as an organizational innovation intended to address disputes between private ownership rights and public planning objectives, employing findings from case studies and semi-structured interviews. In Ahmedabad, Routh and Bhavsar (2024) also used interview responses form a critical foundation for the demand-side modelling offering contextual depth and reinforcing the need for policy measures that align incentives. The qualitative results established a basis for identifying concealed constructs and noticed variables influencing developer demand for TDRs. Three main factors were identified as key determinants: project feasibility criteria, regulatory and procedural threats, and market pricing circumstances.

The practicality of TDR application in a particular project heavily depends on specific site characteristics like the width of access roads and allowable building height. According to Mumbai's Development Control and Promotion Regulations (DCPR 2034), height and FSI norm relaxations are permitted for properties next to roads that are wider than 24 to 30 meters. This clause allows developers to make use of extra TDRs in areas where vertical growth is possible, frequently found in mid- to high-density suburban regions like Andheri, Goregaon, and Borivali. Additionally, developers noted that the size of the plot and the mix of units greatly influence the potential for TDR consumption. Bigger plots and tall luxury or commercial buildings are more inclined to maximize TDR utilization because of their higher profit margins and economies of scale.

Additionally, procedural uncertainty and the timing of TDR release became significant obstacles. Developers, particularly those working on slum rehabilitation within the SRA framework, emphasized the phased release system of TDR—generally provided in stages according to construction milestones (plinth, structure, completion). This time-based fragmentation creates unpredictability in project scheduling and funding, frequently resulting in renegotiations during secondary TDR deals.

Third, the pricing of TDR markets and the costs of premiums greatly affect buying choices. Although the Municipal Corporation of Greater Mumbai (MCGM) establishes benchmark values based on Ready Reckoner rates, real market prices frequently exceed these levels due to speculation and intermediation. Developers observed that for TDR to be financially feasible, the anticipated project returns should greatly surpass both fundamental construction expenses and the actual premium above the official rate.

Developers significantly preferred locations close to upcoming infrastructure (e.g., Metro corridors, business hubs). This suggests an indirect valuation pathway, where the "Perceived Future Value" of a location influences the link between TDR expense and expected returns.

Recommendations

To improve the efficiency, clarity, and fairness of Mumbai's TDR market, several specific policy actions are suggested. Utilizing the advantages of the newly launched centralized digital TDR Exchange platform (Mumbai) to enhance the expansion and development of the TDR market. This platform would enable clear price determination, lessen reliance on middlemen, and decrease transaction durations, thus promoting enhanced market efficiency. Secondly, consistent release of TDR transaction information, price indices, and spatial usage trends by the MCGM and the Urban Development Department would greatly enhance the accessibility of public data. This would allow for policy changes based on evidence and knowledgeable involvement from stakeholders. Third, it is essential to synchronize infrastructure investments with trends in TDR absorption. Regions with significant TDR-driven vertical development should be given priority for enhancements in utilities, transport, and community infrastructure to address the adverse effects of increased density.

Moreover, a recalibration of premium FSI pricing and TDR valuation is required to prevent distortion in developers' preferences. Low premiums for TDRs discourage market engagement and diminish the effectiveness of this urban planning tool. Implementing fair and uniform pricing, accounting for regional advantages, can maintain the integrity of TDRs. Zoning laws should be adjusted to distribute development evenly across the city, rather than concentrating it in crowded areas.

To improve the TDR framework, capacity should be enhanced, approval processes simplified, and oversight made more proactive. Establishing a regulatory entity within the Municipal Corporation can manage TDR allocations, resolve disputes, and ensure adherence to urban planning goals. TDRs have become crucial for Mumbai's urban planning, using private funding to achieve public objectives like slum rehabilitation and road expansion. By monetizing excess floor space, the financial burden shifts from government to the market, leading to spatial impacts and increased density on the outskirts of the city.

The market demand for TDRs is becoming skewed towards upscale residential projects at the expense of affordable homes, raising concerns about fairness and accessibility. Policymakers can address emerging disparities by adjusting FSI, preventing market distortion, and coordinating infrastructure development. Digital transformation can streamline TDR processes by providing real-time data, minimizing informational gaps, and enhancing trust among

stakeholders. Automated approvals, combined with spatial data systems and transaction monitoring, can greatly enhance the TDR market and ensure compatibility with urban infrastructure capabilities.

Analysis of TDR demand should consider both economic and digital perspectives, accounting for changing digital environments that influence urban decision-making and planning resilience.

REFERENCES:

1. Business Standard. (2012). *Mumbai developers to get extra FSI for affordable housing*. Retrieved from https://www.business-standard.com
2. Chapin, T. (2012). Transfer of development rights in theory and practice: The restructuring of TDR to enhance implementation. *Journal of the American Planning Association*, 78(1), 5–12. https://doi.org/10.1080/01944363.2011.645274
3. Costonis, J. J. (1973). *Development rights transfer: An exploratory essay*. The Yale Law Journal, 83, 75–135.
4. Hou, J., Chan, E. H. W., & Li, L. H. (2018). Transfer of development rights as an institutional innovation to address issues of property rights. *Journal of Housing and the Built Environment*, *33*(3), 449–466
5. HUD (U.S. Department of Housing and Urban Development). (2009). *Report on Transfer of Development Rights and Affordable Housing*. Washington, DC.
6. Kaplowitz, M. D., Machemer, P., & Pomazal, R. (2008). Determining the success of transfer of development rights programs. *Landscape and Urban Planning*, 86(3–4), 292–303. https://doi.org/10.1016/j.landurbplan.2008.04.003
7. Kopits, E. (2008). *Transfer of development rights programs: An economic framework for success*. Washington, DC: Resources for the Future.
8. Lane, B. (1998). Transfer of development rights: A new tool for planners. *Journal of Planning Literature*, 13(3), 345–356. https://doi.org/10.1177/088541229801300306
9. Landis, J., McGrath, D., & Smith, R. (2008). *Evaluating the effectiveness of TDR programs for environmental preservation*. Institute of Urban and Regional Development, UC Berkeley.
10. Linkous, E. R. (2017). Transfer of development rights in theory and practice: The restructuring of TDR to incentivize development. *Land Use Policy*, *68*, 282–291. https://doi.org/10.1016/j.landusepol.2017.07.055
11. Levinson, D. M. (1997). Density and dispersion: The co-development of land use and rail in London. *Journal of Economic Geography*, 3(4), 369–391.
12. McConnell, V., & Walls, M. (2009). *Markets for preserving farmland in Maryland: Making TDR programs work better*. Washington, DC: Resources for the Future.
13. Mills, E. S. (1980). Transferable development rights markets. *In: The Economics of Zoning Laws* (pp. 53–78). Washington, DC: Brookings Institution.
14. Pijor, C. (1986). The transfer of development rights: A new tool for planning. *Urban Law Annual*, 30, 179–198.
15. Pizor, P. (1986). Transfer of development rights: A new tool for planning. *Journal of Urban Law*, 30, 197–215.
16. Pruetz, R., & Standridge, N. (2008). What makes transfer of development rights work? Success factors from research and practice. *Journal of the American Planning Association*, 75(1), 78–87. https://doi.org/10.1080/01944360802565627
17. Rose, L. A. (1975). The economics of urban land use regulation. *New York: Praeger Publishers*.
18. Routh, R., & Bhavsar, D. (2024). Assessing the acceptance of cultural policies among heritage homeowners: A study of Ahmedabad's heritage TDR implementation, capacity building, and satisfaction. *Built Heritage*, *8*(1), 1–21. https://doi.org/10.1186/s43238-024-00137-0
19. Sandroni, P. (2011). *CEPACs in São Paulo: A new financial instrument for urban development*. Lincoln Institute of Land Policy Working Paper.
20. Sclar, E. (2021). Transferable development rights and the political economy of land: Detaching zoning from land use. *Urban Studies*, *58*(8), 1524–1540. https://doi.org/10.1177/0042098020967307
21. Shih, J., et al. (2018). Financing public infrastructure through land value capture: International practices. *World Bank Policy Research Working Paper Series*.
22. Smolka, M. O. (2013). Implementing value capture in Latin America: Policies and tools for urban development. *Policy Focus Report*, Lincoln Institute of Land Policy.
23. Stinson, J. (1996). Legal aspects of transfer of development rights. *Urban Lawyer*, 28(1), 49–