

Analysing the Adoption of Transferable Development Rights in the Indian Context

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ABSTRACT: The world is urbanizing at a rapid rate and more than half of the world population is residing in cities which apparently increase the need for urban infrastructure. The case is no different in India where 31% of the total population is living in cities and it is expected to cross 50% by 2050. The requirement for better infrastructure in cities clubbed with the need to curb the urban sprawl engulfing the peri urban agricultural/ environmentally sensitive lands warrants the necessity of a suitable financial and planning tool to address the issue. Transferable Development Rights (TDR) can be considered as a viable solution in this context. In this paper, it is attempted to understand the basics of Transferable Development Rights through literature review. Further, the adoption of Transferable Development Rights program is examined through various international and national case studies which were compared and analysed to understand the critical parameters to be considered for the design of a feasible Transferable Development Rights program.

KEYWORDS: Transferable Development Rights (TDR), Land value capture, Innovative financing mechanism for land acquisition.

I. INTRODUCTION

Cities around the world are experiencing rapid urbanization and it is estimated that by 2050 half of the world population will reside in cities. Cities in our country are no exemption. India has an urban population of 377.16 million from more than 7000 cities/ towns of different population sizes which accounts to 31% of the total population of our country. By 2030, along with the economic growth due the rapid urbanization, there will be a shift in the demographics wherein a large share of the working population will be employed in the services sector[1]

The demographic shift in occupation as well as the increased urbanization warrants the need for improved infrastructure in urban areas. Urban Local Bodies (ULB) are responsible for providing the required infrastructure for the safe and sustainable living of the city dwellers. The most important and basic requirement for any infrastructure development is land. However, the majority of urban local governments only have a small quantity of property at their disposal, making it challenging and time-consuming to acquire it for the general public in accordance with the Land Acquisition Act.

Generally, a significant portion of the overall cost of any infrastructure development is involved in acquiring land which is limited in supply. For this, Urban Local Bodies make use of Value Capture Finance methods. In 2017, The Ministry of Housing and Urban Affairs (MoHUA) introduced 'Value Capture Finance Policy Framework' that includes ten methods which can be adopted by the Centre/ States/ ULBs in their suitable schemes. **Transferable Development Rights (TDR)** is one of the methods. TDR approach helps to reduce the expenses associated with creating infrastructure especially towards the acquisition of land. The National TOD policy also points out TDR as one of the mechanisms to finance the required upgradation of infrastructure and amenities within the influence zone [2]

II. AIM AND OBJECTIVES

A) AIM

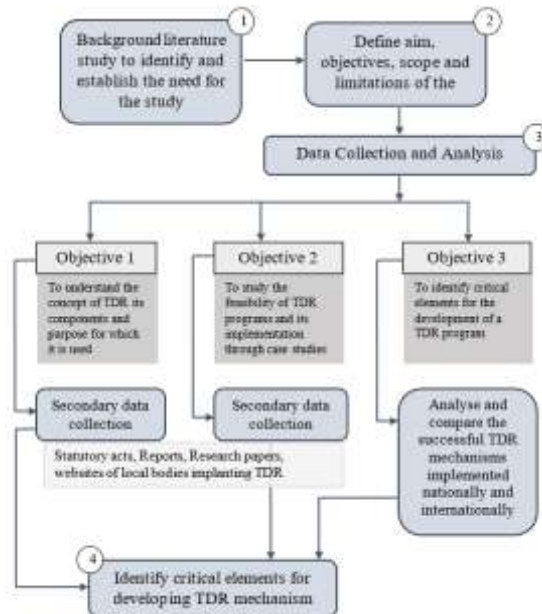
To analyse how a Transferable Development Rights program can be adopted in the Indian context

B) OBJECTIVES

1. To understand the concept of Transferable Development Rights its components and purpose for which it is used

2. To study the feasibility of TDR programs and its implementation through National and International case studies
3. To identify elements critical for the development of a TDR program for a particular purpose.

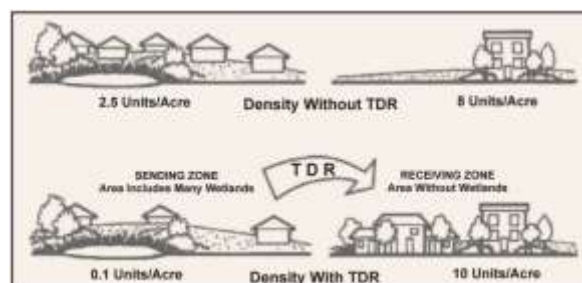
III. METHODOLOGY



IV. LITERATURE REVIEW

According to URDPFI, Transferable Development Rights (TDR) are “a technique of land development, which separates the development potential of a particular parcel of land from it and allows its use elsewhere within the defined zones of the city. It allows the owner to sell the development rights of a particular parcel of land to another. This entitlement is over and above the usual FSI available for receiving plot in accordance with the prevailing laws and regulations, entitles a land owner to construct additional built-up area on his existing building or vacant land.” [3]

Transfer of development rights (TDR) programs are planning tools can help manage growth through the exchange of development rights from sending areas targeted for protection (such as farmland, community open space or other natural/cultural resources) to receiving areas targeted for development. By transferring density spatially away from sending areas targeted for protection to receiving areas targeted for more intense development, TDR can support the creation of compact communities and the preservation of rural resource lands [4].



Concept of Transferable Development Rights [5]

Transferable Development Rights are generally used as a tool for various purposes such as for developing green open spaces in the form of parks/ open spaces/ play areas/ water bodies etc.

according to the provision of Town Planning Schemes; Preservation of fragile lands, historic buildings, landmarks, open spaces etc.; spatial planning; to encourage EWS and affordable

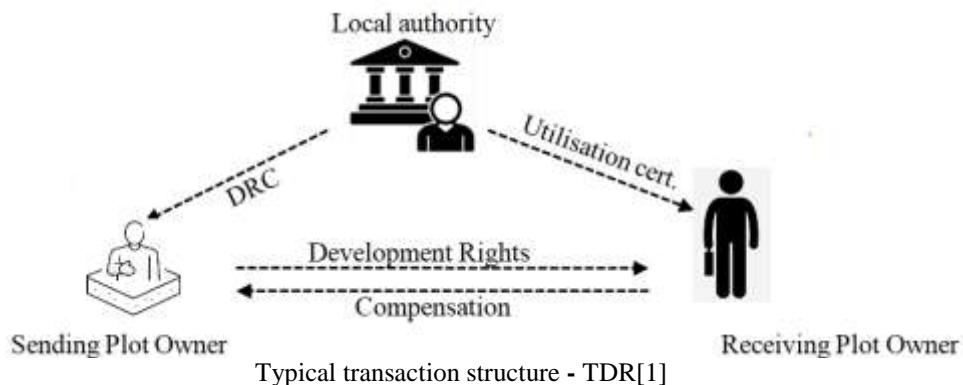
housing; to regulate the community growth and; to provide for the acquisition of land under reservation for urban services [5]

The main components of TDR includes Sending areas characterised by low density development, Receiving areas which are earmarked for future high density development, a transfer system that facilitates valuation and transfer and an authority for monitoring and implementation of TDR program [6]

A Development Rights Certificate (DRC) which is a document indicating the amount of development rights being transferred in terms of floor area credit [7], TDR banks which is a repository of DRCs providing administrative assistance in TDR trading process [8] also inevitable components in a TDR program design.

The TDR program creates a win-win situation for both the property owners as well as the local government in the course of development. The property owner benefits out of the higher compensation received for land and faster completion of procedure. Government is able to conserve/ protect the designated land/ acquire it without much financial burden [1]

The typical transaction structure of Transferable Development Rights program includes the stakeholders comprising of the sending area plot owner, Government and receiving area plot owner. The sending area plot owner voluntarily takes part in the TDR program and transfers the development right to the receiving area plot owner in lieu of compensation and the whole process is monitored by an apex authority constituted for the purpose by the Government [1].



Typical transaction structure - TDR[1]

The economics of TDR shall be considered for better implementation. It encompasses factors such as [9]

- a. Diminishing returns: The effect of density on the variation of land value shall be studied. When density increases land value also increases. But after a particular point it starts decreasing which need to be identified in order to fix an optimal density to yield positive results
- b. Pricing TDRs: Efficient pricing of TDR is essential to encourage the sending area plot owners and receiving area plot owners to participate in the TDR program. The TDRs shall not be priced too high or too low

- c. Enhanced Transfer Ratio: Transfer of every 1 unit of development right from the sending area fetches higher development rights in the receiving area which could increase the participation of people in the TDR program.

In the Indian scenario of TDR, it is noted that the TDR programs have been implemented in certain states while some other states have included enabling provision of TDR in applicable statutes, the pioneering state being Maharashtra, wherein TDR was implemented in 1991 in Mumbai. Road TDR, Reservation TDR, Slum TDR, Greenery TDR, Amenity TDR, Heritage TDR are the generally adopted ones.



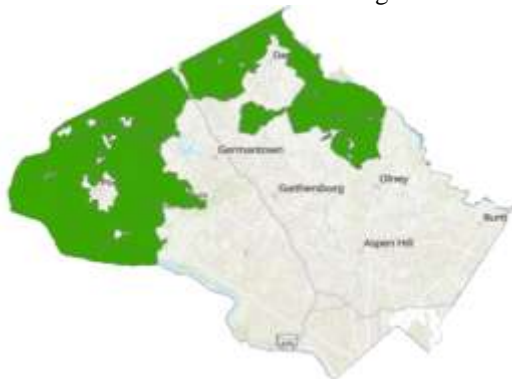
States having provisions for TDR [10]

V. CASE STUDIES – BEST PRACTICE
MONTGOMERY COUNTY, MARYLAND, US

Montgomery County, situated in Maryland state, USA has a population of 1.5 million (2021), and lies north of Washington, DC. Despite intense growth pressure, Montgomery County has managed to preserve 132,603 acres in farmland and parks, with TDR being responsible for almost 40 percent of that total.

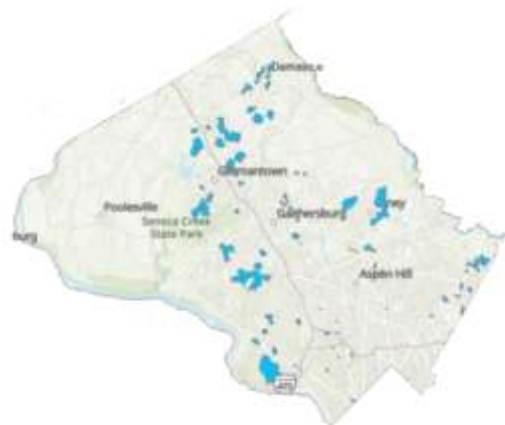
The county introduced TDR program to protect the Agricultural Reserve. The Rural Density Transfer Zone is the zoning method used to carry out a TDR program (RDT). In the sense that development is moved from the Agricultural Reserve to another location in order to preserve farmland.

Sending areas: the Agricultural Reserve Zone (also known as the Rural Density Transfer (RDT) Zone) consisting of the farmland area is the sending area of TDR



TDR sending areas in Montgomery County [11]

Receiving areas: The growth centres in Montgomery County are designated as receiving areas which have good potential for future development.



TDR receiving areas in Montgomery County [11]

Features of the TDR program include:

Sending site of the program shall be the areas included in the designated Agricultural Reserve (Rural Density Transfer (RDT) Zone). Receiving areas are areas outside the RDT zone, which is capable of residential development at higher densities which were later identified through various master plans. Density of development in the Agricultural Reserve area /RDT zone was fixed at 1 dwelling unit per 25 acres which is required to sustain the farmland. Sender receives development rights at the rate of 1 dwelling unit per 5 acres which can be transferred/sold. Owners can retain 1 TDR/ permanent dwelling on sending site

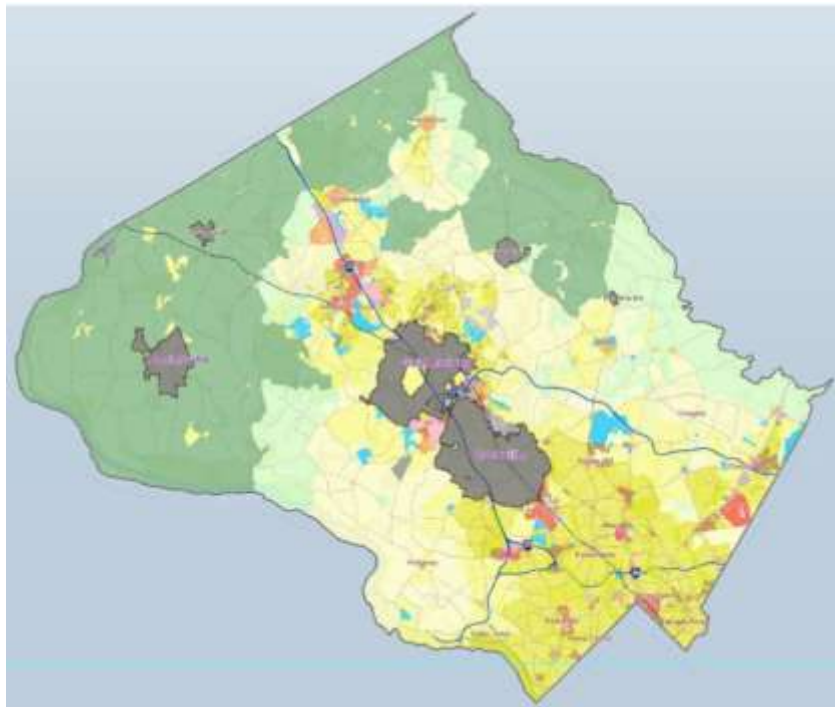
20% of development rights can be converted to building lots in the site itself. Even if the development rights are sold to a developer, the owner retains the title/ownership of the land and

the right to farm. Participation in TDR program is voluntary.

In the receiving areas, the baseline density can be achieved without TDRs, maximum density to be fixed depending on the land's holding capacity, which can be achieved only with density bonus through TDR (at least two-third of the density bonus shall be achieved through TDR)

Development Rights Bank created to buy TDRs generated

As of 2022, the plan helped to permanently preserve 71,594 acres for agricultural use of which 47,903 acres are protected by Transferable Development Rights (TDR) easements. The local Transferable Development Rights (TDR) program in Montgomery County has generated \$117 million in private funding through TDR acquisitions.



Land use map – Montgomery county 2023

Other international case studies of TDR implementation includes New York – Special District Transfers (Hudson Yards), Palm Beach County, Florida San Francisco, California. National

case studies includes TDR programs implemented in Mumbai, Hyderabad, Bangalore, Chennai and Haryana.

VI. CASE STUDY ANALYSIS

COMPARITIVE ANALYSIS OF INTERNATIONAL CASE STUDIES

Sl No.	Comparison Criteria	International Case studies			
		New York – Special District Transfers (Hudson Yards)	Montgomery County	Palm Beach County	San Francisco, California
1	Applicable Statute	TDR ordinance 1961	Functional Master Plan for the Preservation of Agriculture and rural open space 1980	Comprehensive Plan 1989 revised on 25.8.2022	Downtown Plan 1985
2	Purpose of TDR	Creation of park and open spaces Affordable housing	Preservation of Farmland	Environmental Conservation	Preservation and Restoration of historic properties
3	Designated TDR zones	Designated sending areas and receiving areas	Designated sending areas and receiving areas	Designated sending areas and receiving areas	Designated properties as Landmarks
4	Permissible FAR / FSI	FSI associated plot wise	Sending area : 1 du/ 25 acres Receiving area: Differs with potential of growth centers	1 unit/ 20 acres	FSI associated plot wise
5	TDR compensation norm	Air rights above the yard; As allowable developable area	1 du/ Acres + 20% of the dev. Rights can be converted to building lots in the site itself	Varied TDR depending on category 1 TDR/ acre to 1 TDR/10 acres	Difference between floor area allowed by zoning & actual floor area
6	TDR utilization criteria	Layered system of addl. FAR (Baseline FAR, Intermediate FAR through DIB, Maximum FAR via TDR)	Apart from baseline density, max density fixed for each receiving area based on its holding capacity which can be achieved only through TDR. (at least 2/3 rd bonus to be achieved via TDR)	Varied density bonus in receiving sites 2 extra du/ acres to 4 extra du/ acres + 1 addl. du/acre in receiving sites near parks, mass transit, regional, commercial facilities	An enhanced density achievable via TDRs which varies with development lots
7	Relaxation in building rule norms for TDR utilisation	No	No	No	No

Sl No.	Comparison Criteria	International Case studies			
		New York – Special District Transfers (Hudson Yards)	Montgomery County	Palm Beach County	San Francisco, California
8	Ownership of sending plot	Sending plot owner retains the ownership. Only the development rights are transferred	Sending plot owner retains the ownership. Only the development rights are transferred	Sending plot owner retains the ownership. Only the development rights are transferred	Sending plot owner retains the ownership. Only the development rights are transferred
9	Min. area of sending site	No minimum size	Min 5acre to generate 1 TDR	Min sending area parcel size varies with category	Landmark/ historic buildings are being protected
10	Price of TDR	Phase I: Price determined by MTA Phase II: Market based	Market based	Price fixed by County Board which is less than market price	Market based
12	TDR Banks	No	Yes; Development Rights Bank	Yes	No
13	Fund created by authority	District Improvement Fund	No	Natural Areas Fund (used to acquire & maintain environ. sensitive lands)	No
14	Online monitoring mechanism	No	No	Yes	No
15	Implementing mechanism	Through Special District Transfer mechanism in the TDR ordinance	Through Master Plan	Through Comprehensive Plan	Through planning code

COMPARITIVE ANALYSIS OF NATIONAL CASE STUDIES

Sl No.	Comparison Criteria	National Case studies				
		Mumbai	Hyderabad	Bangalore	Chennai	Haryana
1	Applicable Statute	Development Control Regulations 1991 ; TDR Policy 2016	Andhra Pradesh Building Byelaws 2512 amended via GO(Ms) 350 dt. 28.12.1997	Karnataka Town and Country Planning (Benefit of Development Right) Rules 2018	Master Plan for Chennai Metropolitan Area 2026	Haryana Development & Regulation of Urban Areas Act 1975; TDR Policy 2021
2	Purpose of TDR	Road widening, Urban rehabilitation, Reservation for civic amenities, Heritage preservation	Road widening, Greenery, Reservation, Heritage preservation	Road widening, Provision for parks and open spaces	Road widening, Urban infrastructure incl. transport, Slum Rehabilitation	Creation of City level, arterial, sub-arterial infrastructure
3	Designated TDR zones	Zone concept consisting of Island city and suburbs as different zones	No designated TDR zones	3 concentric TDR zones	No designated TDR zones	No designated TDR zones
4	Permissible FAR / FSI	Island city: 3.33 Suburb: 1	Buildable area as component of height and setbacks	Ranging from 1.5 to 4	Max 1.5 for residential Max 1.5 for commercial	Ranging from 1 to 2.2
5	TDR compensation norm	General: Zonal FSI X Surrendered area Heritage : Zonal Base FSI - FSI consumed by Heritage Building	Road TDR : 400% of area surrendered Greenery TDR: 200% of area surrendered Heritage TDR: 100% of area surrendered	1.5 times surrendered area		Notional Land of TDR certificate + Land surrendered x Landline index x Land rate index
6	TDR utilization criteria		TDR can be utilized for constructing one additional floor above the normal permissible floors with no relaxation in building rule norms		Permissible additional FSI via TDR shall be 0.5 times the normal permissible FSI of the receiving sites. For receiving sites with permissible FSI 2 or more, the additional FSI via TDR shall be 0.25 times	Notional land of receiving site + Notional land of TDR certificate Land rate index
7	Relaxation in building rule norms for TDR utilization	No relaxation	No relaxation	Up to 50% relaxation in setbacks and coverage. No relaxation in parking	No relaxation	No relaxation
8	Ownership of sending plot	Sending plot transferred to MMRDA / MCGM as gift deed	Sending plot transferred to GHMC / HMDA as gift deed	Sending plot transferred to BBMP/ BDA	Sending plot transferred to CMDA	Sending plot transferred to Planning authority/ local body
9	Min. area of sending site	Not mentioned	No minimum size	No minimum size	No minimum size	Open space zone - 2 acres EDC work sites/ Public and semi public zone - 2.5 acres Market based
10	Price of TDR	Market based	Market based	Market based	Market based	Market based
11	TDR Banks	No	Yes	No	No	No
12	Fund created by authority	No	No	TDR fund maintained by authority for public purpose	No	No
13	Online monitoring mechanism	No	Yes	No	No	Yes
14	Implementing mechanism	Through Development Plan	Not through Development Plans	Through Local Area Plans	Through Master Plan	Through Development Plan
15	Status of implementation	525 acres of land acquired leading to savings of Rs.1841 crores to the local body	812 acres of land acquired leading to savings of Rs.4832 crores to the local body	560 acres of land acquired	Not available	Not available

From the comparative analysis it was understood that the TDR program adopted in national and international level had certain peculiarities. Hence a comparison of the international and national case studies was done as given in the table below:

Sl No.	Criteria	International	National
1	Price of TDR	Fixed by authorities in many cases to avoid speculation in the market.	Market price of land is demanded for TDR by the sending plot owners
2	Ownership of sending plot after generating TDR	Ownership rights vests with the sending plot owner itself. Only the development right is transferred to the buyers	TDR used as a land acquisition tool for developing urban infrastructure. As the land is acquired by the local body/ planning authority, the ownership rights of the sending plot is transferred to the government whereas the development right is transferred to the buyer of TDR
3	Land price as a parameter in TDR program	As development rights alone are transferred as TDR, the compensation as well as utilization of TDR does not include any component of land price	Land price is considered as a parameter for calculating the compensation to sending plot owner or the allowable developable area at the receiving site depending upon the TDR program

Comparison of National and International TDR programs

VII. CRITICAL PARAMETERS FOR THE DESIGN OF A TDR PROGRAM

From the above case study analysis the critical parameters for the design of a TDR program in the Indian context were identified.

a) Floor Area Ratio

FAR decides the total mass of the construction. It can be used as a tool to control the density of development. i.e. FAR can be kept low for land that need to be preserved in order to curb more developments at that area whereas an up zoning at a receiving site can help to increase the density of development.

b) Landuse

The case studies indicate that the TDR program shall consider the landuse while designing. Generally residential and commercial uses are seen to acquire higher densities at the receiving areas

c) Landprice

The feasibility of TDR is highly dependent on the land price. Most of the national case studies adopt TDR as a land acquisition tool and hence the component of land price is critical both at the sending and receiving side

VIII. CONCLUSION

Transferable Development Rights (TDR) is a feasible and effective tool to address the various land related issues caused due to urbanisation such as increasing demand for better infrastructure, environmental protection, heritage conservation etc. Every TDR program shall be carefully designed after thorough understanding of the local context where it has to be implemented in order to ensure its success.

From the study carried out in this paper, it is understood that the design of TDR program is different in the national and international platform owing to the statutory norms in place. In India, Transferable Development Rights are generally used as a Land acquisition tool to ease the financial burden of local governments in acquiring land to provide the required urban infrastructure and other land related developments. Also, from the study it was identified that Floor area ratio, Landuse and Landprice are the critical factors that need to be considered to design a successful TDR program.

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