

Urban Infrastructure in Metropolitan Cities: A Case Study of Transfer of Development Rights in Mumbai

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Abstract : *Crumbling infrastructure and an acute paucity of civic amenities is the hallmark of most urban settlements in developing countries. Mumbai, the financial and commercial headquarters of the country is no exception. Severe financial constraints have hampered the acquisition of privately owned land for implementation of the "Development" or "Master" plan of the metropolis. Therefore, on 25 March 1991, the state government allowed the Municipal Corporation of Greater Mumbai to use Transfer of Development Rights (TDR) in the city. This has enabled the civic authority to develop land for public purposes at little or no cost to the public exchequer. The objective of this paper is to examine the impact of this measure on the development of infrastructure in the city and to highlight the adverse consequences of public facility overload, which can result from the additional density bonus in receiving areas if adequate care is not taken while implementing TDR.*

Introduction

Mumbai, the financial and commercial headquarters of the country faces an acute shortage of civic services and infrastructure. This reflects a failure to implement the "Development" or "Master" plan, the planning instrument being used to provide the spatial layout of the planned or expected activities in the city. As the municipal corporation and the state government own a very small proportion

of land in the metropolis, acquisition of privately owned land is essential for implementation of the plans. Till 1991, the only measure for acquiring land reserved for public amenities and services was through compulsory land acquisition. This policy was not successful, which is reflected in the fact that not even 10% of the total land area reserved in the Development Plan (1964-81) for providing various amenities was acquired during the entire tenure of the plan (Kothari, 2002).

Several factors account for failure of the Municipal Corporation to obtain private land. The 'fair price' of the land to be acquired is determined by past records of sales transactions. These are rarely recorded correctly since transaction taxes are high and the role of 'black money' in the economy is large. The landowners therefore oppose reservation of their land, as the compensation received would be a fraction of the traded price. Local bodies or the state governments, on the other hand, do not have adequate funds to acquire the property even at the recorded low rates. When the local authority fails to buy the notified area (due to tight budgetary resources) within the specified period, the reservation on the land is automatically deemed to be deleted. This results in an inadequate provision of amenities and services in the city. Other hurdles in the implementation of the plan include cumbersome, slow and costly legal procedures for acquiring land, which result in inordinate delays. In addition, the land is often encroached. While some encroachments may have continued from earlier uses, some plot owners encourage encroachments to create hurdles in the acquisition process.

In order to tackle the problem of acquisition of land and to facilitate the implementation of the Development Plan the state government on 25 March 1991, allowed the Municipal Corporation of Greater Mumbai to use Transfer of Development Rights (TDR). It was the first time that TDRs were used in any city in India. The present paper attempts to examine the

impact of TDR on the development of infrastructure in the city.

Definition and Concept of TDR

The Urban Plans Formulation and Implementation (UDPFI) Department, Government of India (GOI, 1996), has defined TDR as the "Development Right to transfer the potential of a plot designated for a public purpose in a plan, expressed in terms of total permissible built space calculated on the basis of Floor Space Index (FSI) or Floor Area Ratio allowable for that plot, for utilization by the owner himself or by way of transfer by him to someone else from the present location to a specified area in the plan, as additional built up space over the permissible limit in lieu of compensation for the surrender of the concerned plot free from all encumbrances to the Planning and Development Authority." The municipal corporation gains as monetary compensation to the property owner is avoided and the land is available free of title disputes, encroachment and encumbrances so it can be put to immediate use and the implementation of the master plan can be speeded up. The plot owner gains because he can earn many times the government compensation in traditional acquisition by selling his "development rights". In addition, since much less time is taken for the procedure, the plot owner gets the development rights faster. It should be noted that TDRs have not replaced compulsory land acquisition but are only an alternative to it.

The transfer of development rights is not a new concept. TDRs have been used in other countries for the preservation or protection of open space, natural resources, farmland, fragile lands and urban areas of historical importance. They have also been used to secure land for solid waste facilities and for the protection of golf courses. In the United States of America more than 20 states have enacted or amended statutes accommodating the TDR

concept. In India it is being used in urban areas to augment the crumbling infrastructure and the poor level of amenities and services which characterize urban settlements by overcoming the constraint of limited financial resources - a perennial problem in developing countries. It aims at enabling the use of land for public purpose at little or no cost to the public exchequer.

The concept of TDRs provides for financial compensation to property owners while society imposes land-use regulations to control growth and development. This approach involves severing the right to develop an area that the public wishes to preserve in low density or open space and transferring those rights to another site where higher than normal density would be tolerated and desirable. The development right is independent of land ownership and becomes a separate article of private property that can be shifted from one area to another and can have economic value. Planning for public services is thereby improved without alienating the owner completely of the intangible value of his property.

TDR as a mechanism utilizes the real estate market, rather than the market for land, to compensate the landowner, whose development rights have been curtailed. It allows for the transaction of development rights as buildable area. Since 1964, due to the imposition of Floor Space Index based control on development of property in Mumbai, there exists in the city a profitable market in buildable area or the right to develop, as distinct from the market in urban land itself. TDR has created a sub-market where the buildable area can be bought and sold. It has been estimated that the possible compensation to the owner from TDR is 3 to 5 times that which would be obtained from the government.

Components of a TDR Program

There are four main elements of a TDR program:

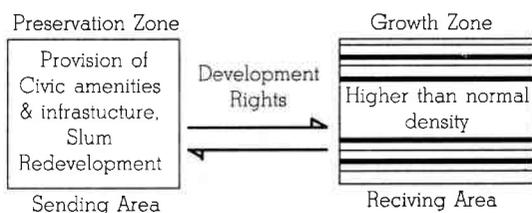


Fig. 1 : Transfer of development rights

- 1) A designated preservation zone (the sending area).
- 2) A designated growth area (the receiving area).
- 3) A pool of development rights that are legally severable from the land and transferable by the owner.
- 4) A procedure by which development rights are transferred from one property to another.

D) The sending area:

In the context of Mumbai the sending area comprises of any plot of land within the municipal limits of the city which has been reserved against the following categories:

- i) General TDR - areas demarcated for public amenities such as schools, hospitals, playgrounds etc.
- ii) Road TDR - areas earmarked for road construction and widening.
- iii) Slum TDR - introduced in 1997 for plots to be used for rehabilitation of slums.
- iv) Heritage TDR - sanctioned in 1995 to give benefit to owners who cannot utilize the unconsumed FSI to develop their properties falling in protected heritage precincts.

2) The receiving area:

The receiving area has been identified on the basis of the category of TDR utilized. The first three categories of TDR can only be availed to the north of Mahim on Salsette

Island on a plot located north of the reserved plot. In the case of Heritage TDR the receivable plot can be in the same ward as the originating plot.

3) A pool of development rights that are legally severable from the land and transferable by the owner.

The development right is independent of land ownership. The development right becomes a separate article of private property and can be shifted from one area to another and can have economic value.

4) Procedure by which development rights are transferred from one property to another:

The owner is granted TDR on the basis of FSI prevailing in the sending area, which in the City Island is 1.33 and in Salsette Island is 1.00. In the receiving area the permissible FSI is doubled. It is however mandatory for the receivable plot owner to obtain 40% of the TDR from the general category, 40% from the road category and 20% from the slum category.

Implementation of the TDR Program in Mumbai

From June 1993 to July 2001 2,134,095.9 sq metres of TDR has been generated in Greater Mumbai. Maximum TDR utilized belongs to the first three categories i.e. general, road and slum TDR. Although 7 years have passed since the state government framed heritage regulations for Mumbai, the civic administration has so far issued just 3 heritage TDR certificates amounting to 1,002 square meters.

An examination of the sending areas (Fig. 2) reveals that only 8.3% of the TDR has been generated from the Island City. 86% of this TDR has been generated from F and G wards, 46.8% of which belongs to the general category, followed by 40.7% in the slum category and 12.7% in the road category. The exceptionally high proportion of slum TDR generated from GN ward is

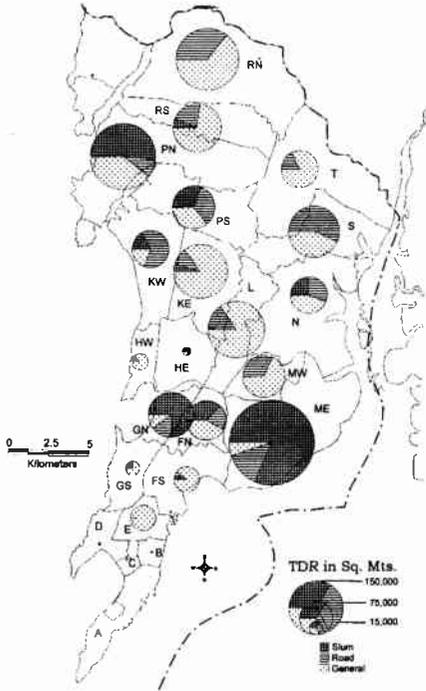


Fig. 2 : TDR generated in wards of Mumbai city

because Dharavi, Asia's largest slum, is located here.

With the exception of HW and HE wards, all the other wards on Salsette Island have contributed significant amounts of TDR. These two wards were developed in the sixties/seventies and were densely built up, with much of the infrastructure and civic amenities in place, before the Development Plan 1964-81 came into operation. Maximum TDR has been generated from ME ward. As much as 80% of this comprises slum TDR. It is also pertinent to note that 9.25% of the total slum TDR generated in the Mumbai city is from ME ward alone. Large stretches of low lying, marshy tracts found in the area have contributed to the development of squatter settlements. In addition, encroachment was possible as this unoccupied area was owned by the government. On the other hand, with the exception of PN ward, much of the TDR

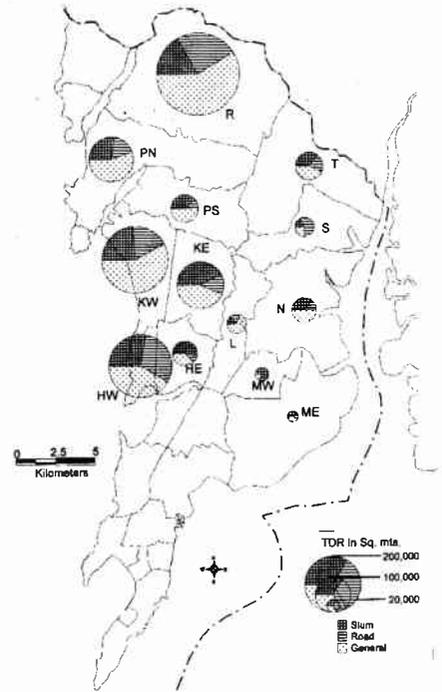


Fig. 3 : TDR utilised in wards of Mumbai city

from the northern suburbs has been from the road or general category.

76.54% of the TDR generated had been utilised till July 2001. 47.5% of the TDR used has been in the southern wards of Salsette Island and a staggering 35.1% in just two of them namely, HW and KW wards (Fig. 3). These are the most sought after areas on Salsette Island. Due to the ameliorating effect of the westerly sea breeze the coastal tracts along the Arabian Sea have developed as upper class residential areas. They are also prized due to their relative proximity to the City Island. In addition, because of the peculiar geography of the city these upmarket areas lie north of slum dominated areas like Dharavi and Mankhurd. As much as 33.8% of the TDR used in Bandra has been generated from these two areas alone, of which 23.26% is slum TDR. This allows builders to buy slum TDR in Mankhurd, where the rate is as low as

Rs 1,000/sq. ft and use it in an upmarket place like Bandra west, where the rates vary between Rs 8,000 - 10,000/sq ft. Similarly 44% of the TDR utilised in KW ward, where Juhu-Vile Parle scheme is located, is generated in Kurla, Ghatkopar and Mankhurd, 16% of which is slum TDR from Mankhurd alone.

Maximum TDR i.e. 51.6% has been used in P and R wards. This is partly due to the stipulation that the TDR has to be used to the north of the area where it is generated but the emergence of Andheri as an important hub for tertiary and quaternary services in recent years has contributed in no small measure to this development. TDR has been used to construct commercial complexes as well as housing for the employees of these enterprises. They belong to the upper middle class and have created a demand for residences which provides up-market amenities such as a swimming pool, gymnasium, parks, schools etc. In addition, due to the high cost of real estate in the city, many of the white collar workers employed in South Mumbai live in the suburbs. Large tracts of open land, which are still available in these northern suburbs has facilitated this trend. Builders of these complexes utilize TDR to double the FSI available to them. Thus, Tata Housing's Infotech Park at Andheri has utilised 30,000 sq. ft. of TDR, Dorab Dubash's Ahura Commercial Centre also in Andheri has 80,000 sq. ft. while Ajmera developers have used nearly 100,000 sq. ft. in their Versova project. Mayfair Housing, one of the biggest players in the TDR market has developed and marketed over 100 lakh sq. ft. of TDR in collaboration with Housing Development Finance Corporation.

The most expensive TDR comes from heritage properties located in south Mumbai. Hardly any one has taken advantage of this TDR not only because of its high cost (about Rs. 5000/- a sq. ft), but also due to the fact that most properties in South Mumbai fall under the Coastal Regulation

Zone which prevents construction 500 m. from the coastline.

Problems Related to the Use of TDR

There are several problems related to the use of TDRs. In the case of HW ward, an upper class residential area, which is already densely built up, it has led to an acute pressure on existing amenities and infrastructure. Being one of the earliest suburbs to develop, many of the buildings here are already 30-40 years old, often in need of drastic repairs. The flat owners are unwilling or unable to raise money. They therefore easily succumb to builders who offer to provide not only a major facelift to the building but also to disburse a significant amount of money to them in return for constructing additional floors on top of the existing structure. The once tranquil residential enclave of bungalows and two storeyed structures in Juhu-Vile Parle Development (JVPD) in KW ward is another example of an area in the process of being converted into a vertical slum. Huge columns and beams are constructed around the buildings in these areas to support the additional floors being constructed. As a result side open spaces between buildings have often been reduced to just 3 metres, regardless of their height. This affects light and ventilation at lower floor levels. In addition, the structural stability of these buildings has not been taken into consideration when building plans were sanctioned for additional constructions. Often the ground floor is demolished to make way for stilt car parking which could lead to unstable structures. These areas are also characterized by narrow lanes, which do not have the capacity to withstand the influx of residents and vehicular traffic. Open spaces and parking space have drastically been affected by the increase in population. Only 11% of the area in HW ward is under Open Spaces. If the large tracts of recently reclaimed land are excluded, this figure would be much

lower. The availability of Open Spaces/1000 population in the ward was only 3609 sq m/1000 population in 2001. Though this value is higher than the average for the city, it is much less than the national standard adopted by the United States of America which is to the tune of 40,468.6 sq. m. of open space per 1,000 residents or the current standard of provision of 16,000 square metres of open space per 1,000 people housed in the City of Leicester, which was designated Britain's first Environment City. Significantly, the Open Spaces in H & K wards were 4.5 times less than that available in 1961. It is also important to note that density of population in Salsette Island has been increasing rapidly in recent years. In 2001 the density of population in HW ward was 14,611 people per sq. km. Additional increases in population due to indiscriminate use of TDR in the ward would not only result in a public facility overload but would also destroy the physical form and social character of the area.

In Chembur the use of TDR has safety implications. This is an area where a conglomeration of sensitive installations like oil refineries, BARC, a fertilizer plant and a naval ammunition depot had prompted the government to once limit FSI to just 0.5. This was increased to 0.75 and later to 1.00 by the Shiv Sena-BJP government in 1998. Combined with the 100% use of slum TDR, the FSI has thus increased to 2, which has led to a sudden spurt of high-rises in this eastern suburb.

Indiscriminate use of TDR began in 1997 when the government introduced 'slum TDR'. In the 1991 development control rules, TDR was not permitted to be used in certain congested suburban areas. In the western suburbs, these included the space between railway lines and S.V. Road and between the railway line and Western Express Highway. This has been changed in the case of slum rehabilitation schemes, where TDR is allowed to be used anywhere, irrespective of the additional burden on the infrastructural

facilities. The civic administration has also recently considered a proposal to give TDR as payment to contractors for carrying out road concreting. This will further aggravate the situation.

Finally, though the TDR scheme has helped the BMC to acquire private plots collectively measuring more than 2,134,095.9 sq metres to develop public amenities, most of the plots are still lying vacant because the civic administration lacks the funds to develop them.

Recommendations

TDRs are regulatory tools designed to facilitate land use planning. Unlike most community comprehensive plans, in the case of transfer of development rights there is much more certainty of where development will happen and where it will not. While it is logical that developers have an incentive to purchase development rights (i.e. a density bonus) the TDR program should be part of a growth management program whose ultimate purpose is to create more efficient growth patterns. Within the receiving areas therefore the municipality must assure communities that a public facility overload will not result from the TDR density bonus.

~ It is therefore recommended that

- TDR should be consumed only in selective places in the suburbs where it would not impose pressure on the existing infrastructure, particularly in terms of water, drainage, parking, road space and open spaces.
- A "carrying capacity" study must be carried out to determine how much additional space each part of the city can sustain. The study must indicate how much more additional recreational or other public space must be made available in an area before further floor space additions are permitted. TDR should be limited depending on the carrying capacity of a particular

locality so that its basic physical form and social character are not destroyed.

- Before receiving districts are designated a Generic Environmental Impact Statement must be prepared for them.

Conclusion

The state government introduced TDR in 1991 with the objective of decongesting the island city. Between 1967 and 1991, the BMC acquired just 15% of the total reserved land for public amenities. After the TDR policy was introduced in 1991 the BMC has managed to acquire 15% of the reserved land. However, is the success of a TDR program measured by the total area generated or by the number of transactions that have taken place? It has been suggested that a TDR program can be considered a success even if no transactions take place. This is because in the context of a larger land use plan, the TDR program can make a preservation program more palatable by providing the landowner with additional options. It has also proved to be a novel instrument devised to curb endless litigation. Typically a landowner, who would fight the municipal corporation in court for seeking to acquire the land for a school or hospital, has the option of developing the public amenity and surrendering it free of cost to the civic authority. In return he would get the development rights or FSI, both for his plot as well as for the constructed area of the utility as TDRs. Godrej, for instance with vast property in Vikhroli, has obtained and marketed 20 acres of TDR after developing and returning the land marked for various government reservations. This way, the company could get back part of the value of the land while the amenity originally indicated in the master plans was made available to the public. It is

thus a vital tool in the hands of a cash-strapped government, which enables it to provide civic amenities and infrastructure in a rapidly growing metropolis. Another advantage is that TDR is available at lower values than regular real estate. This factor combined with the additional FSI generated has made it possible to construct tenements at cheaper rates. This is important in a city where property prices are amongst the highest in the world. In addition, in an urban area where at least 55% of the population lives in slums it has helped to kick-start the slum redevelopment schemes. TDR is thus a dynamic development measure and it is the best solution available to develop infrastructure in the city, but adequate measures must be taken to ensure that a public facility overload does not result from the additional density bonus.

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