

## **TOD Planning in Dhaka: Challenges of Land Ownership for Redevelopment around MRT Stations**

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### **Abstract**

Transit Oriented Development (TOD) is a globally accepted trend to integrate transport and landuse in a best suitable way. However, although the application principles are similar, there are difference challenges from context to context. Especially in case of brownfield areas where development already has taken place, TOD implementation is quite a challenge than the greenfield one. There are different cases like Hong Kong, Japan, USA, Singapore, and many more that have successfully implemented TOD and set the examples. One of the reasons behind their success was their land market and planning system. However, different research identified Dhaka's weak planning and private land ownership system as the constraint for TOD implementation. This study has tried to look at land redevelopment especially land readjustment challenge in the current land market and planning system of Dhaka. The finding suggests how the role of private land developers may bring solution to the current challenges.

### **Introduction**

TOD is an amazing rapidly growing trend for making communities livable and sustainable; similarly responsible for creating walkable, pedestrian-friendly cities around public transit (Teh et al., 2019). TOD has been recognized as an effective initiative towards sustainable urban development. It is characterized from two significant angles: (1) By ensuring adequate facilities and close proximity with transit stations, TOD maintains a functional relationship with public transit, (2) It develops a compact neighborhood with higher density and promotes mixed use buildings which enthruse people to get used with walking, cycling as well as public transport use Unfortunately developing countries are still struggling to adopt this method and to bring out its best outcome (Suzuki et al., 2015).

According to Kidokoro (2019), TOD needs to consider several aspects like transit-oriented growth management plan, different zoning regulations near station areas, joint development approach among local government, transit agencies, private developers and, institutional mechanism for public- private partnership approach for surrounding area development of TOD stations.

A successful TOD comprises several macro level strategic elements and micro level design elements as high-density developments, dynamic climate and master plan which will led and supported by contextualized implementation plans. With the planning of urban development laws, Landowners, developers and even tenants can create development opportunities near TOD stations (Suzuki et al., 2015). MRT development in

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Dhaka is an initiative of promoting TOD that holds the ideology for integrating transport and land use (RAJUK, 2016). The MRT line 6 is under construction which after completion will connect the northern periphery and CBD. Total 20.1 km corridor is being developed with 16 stations (RSTP, 2015). Most of the areas around the stations are already developed except the three stations at Uttara North. Though the MRT line is being constructed but the successful implementation of TOD with optimum benefit is difficult because of redevelopment challenges in the context of Dhaka (Haque et al., 2018). In this critical context, Land readjustment can be the ray of hope as it doesn't require acquisition and can assemble land with minimum displacement (Olajide, 2015; Louwsma et al., 2017). This study illustrates how land readjustment (LR) could be a suitable solution or brownfield TOD implementation in the context of Dhaka, along with the existing planning and land market related challenges for successful TOD. It also explores how the concept can be adopted considering the land market challenges. The findings stress the importance of the role of developers and offer practical guidance through global cases.

### **Land Readjustment and TOD Planning**

TOD approach is a combination of transport and urban planning by ensuring obtainable mass transportation. Along with that, certain design principals are required to be maintained for achieving the outcomes of sustainable TOD planning. Features like open space, retail shop, residential and employment opportunities within walking distance like 10 minute of transit stations are compulsory to maintain the attractiveness. The development of a pedestrian friendly road network, housing type mixture with high density and low cost are essential to encourage development and redevelopment surrounding transit corridors (Berawi et al., 2020).

For promoting effective TOD projects, incentives need to be considered for two levels: (1) community level and (2) developers. Community services are needed to be packaged carefully as it's mandatory for effective functioning. These community packages might include attractive community facilities, walkable pedestrians and streets etc. and thus the greater benefit of TOD implementation can come along through land assembly for LR (Bajracharya, 2009).

Globally, Land readjustment is considered as a legal tool of land assembly and development in case of complexity, when public funds are needed for financing infrastructure as it's lacking in many countries (Home, 2007). Land readjustment comes as an utmost solution when extensive infrastructure is introduced in an area where subdivision already exists (Larsson, 1997). Schrock (2012) explained that, several countries have already developed significant policies for integrated TOD projects. These policies have been incorporated the concepts of public transport infrastructure investments along with improved locational accessibilities, which has also led to higher land and real estate value uplift. Fortunately, these policies can correlate with land readjustment, as it creates opportunities for urbanization through the process of land pooling, road installation, required infrastructures and redistribution of lands to the genuine owners. A certain amount of land is also preserved for public spaces and community facility as well.

The most precious benefit of land readjustment for a development entity is the gain of land without significant capital. The unique advantage of this approach prohibits displacement; thus, land acquisition and servicing cost get balanced, and recovery is gathered from interest charge and income from land disposal (Schrock, 2012). Through the implementation of land readjustment process, following benefits can be gained by three major stakeholders:

**Table 1:** Land readjustment benefit for stakeholders

Benefits for landowners	Benefits for municipal government	Benefits for society
Land value uplift in spite of decrease in size	Required land for infrastructure is captured	Efficient development is promoted
Right to return of ownership	Public facilities can be built with minimum or no expense	Social Capital is created
Conversion of irregular plots into standard shape	Property value uplift increase the tax base	Positive economic externalities
Betterment of infrastructures without any additional charge	Municipality control is reinforced over density, zoning and land use	Public- Private Partnership and trust increase

Source: Schrock, 2012

In the context of infill or brownfield development (from the case study of Brisbane inner suburbs), assembling required amount of land parcel has always been figured as a significant challenge. Fragmented land ownership pattern is the evident of it which makes the challenge more complicated as for its large number. (Bajracharya, 2009). Another critical factor happens if maximum occupants of any communities are renters who might fail to initiate community preservation. Despite this, the approach can be flexible even after that and can extend to include the tenant's interests (Schrock, 2012). Still, transit supportive development (property based) surrounding transit-oriented stations can be supported efficiently through land readjustment process as land assembly is conducted by ensuring landholders commitment with the assurance of rights of way (Suzuki et al., 2015).

**Table 2:** successful cases of land readjustment for TOD

Cases of LR method application near TOD	Salient Features
Shingawa, Japan	<ul style="list-style-type: none"> <li>✓ Around 13.7 acres of land were gathered through the joint initiatives of local government, property owners and private developers</li> <li>✓ Substantial FAR bonuses were given</li> <li>✓ Public open spaces and greeneries had been developed with FAR bonus</li> <li>✓ 73.6% land value had increased</li> </ul>
Canary Wharf, London	<ul style="list-style-type: none"> <li>✓ A business district was established under public-private partnership.</li> </ul>

Cases of LR method application near TOD	Salient Features
	<ul style="list-style-type: none"> <li>✓ Connectivity of TOD station, separate bus and cycle track, river ferry services served the neighborhood in a great manner along with economic stimulation.</li> <li>✓ Sustainable urban space was created with traditional high-rise structures which were coupled with technology-based facility management.</li> <li>✓ The revenue and cost of the project came from office space rent.</li> </ul>
King's Cross, London	<ul style="list-style-type: none"> <li>✓ The financial agreement in between developers and landowners were based on the exchange of development permission in exchange of affordable housing and better community facilities.</li> <li>✓ Mixed used development was conducted with the coordination of three local authorities.</li> <li>✓ The redevelopment scheme was based on "floor space maxima" for ensuring diverse use of site.</li> <li>✓ 40% increase in affordable housing along with employment creation and entire site development.</li> </ul>
Kowloon, Hong Kong	<ul style="list-style-type: none"> <li>✓ Implementation of R+P model with the coordination of government and private developers.</li> <li>✓ 13 developer groups were involved in phase-by-phase development</li> <li>✓ Intermodal vehicle facilities, pedestrian circulation systems were integrated with open space, cultural and entertainment facilities.</li> </ul>

Source: Suzuki et al., 2015 and NIUA 2020

### Existing Land Ownership Pattern in Dhaka

Land is considered as a prime asset from institutional to individual level across the world. Ownership of land in any megacity is treated as wealth. In any developing country where efficient institutional land management policy is missing, the purchasing task gets more difficult for any development (Alam, 2018). In global south, land management and administration are quite unclear due to plural ownership and conflicting for lack of urban policies. Usually, landowners don't take any redevelopment initiatives for constraints like status quo. Thus, requirement for passive to active ownership arises for land assembly (krabben et al., 2020).

Land market dynamics consists of several actors like different groups, individuals or non-state actors who shape the land ownership and administration (koonings and Kruijtit, 2009). Unfortunately, the situation is similar in the context of Dhaka (Alam, 2011). Public sector organizations at Dhaka are struggling and being unable to meet up with the demand for housing and relevant commercial as well as community facilities, whereas urban policies like Building Construction Act 2008 promoted high density and mixed-use urban areas. 4 percent of people have the ownership of approximate 28 percent of land in

Dhaka city whereas 57 percent people don't hold the possession of any piece of land. This alarming situation has been tackled by real estate sector that motivated people for living in neighborhood communities with high FAR and mixed used structures (Roy et al., 2019)

Research reveals a large amount of potential (re)developable lands around the proposed MRT stations that could be possible to redevelop immediately (Haque et al., 2018). For any infrastructural development, acquisition of land by any public or private entity has always been considered as a vital issue in Bangladesh. In most of the situations, landowners remain against acquisition procedure. Several development projects had completed in Bangladesh without appropriate land acquisition and resettlement plans (Al Atahar, 2013). According to the Article 42 of BD constitution, people are given the right to hold, acquire, transfer and dispose property and under the "Land Acquisition Law 1984 and 2017", government can acquire land (Al Atahar, 2013). Right now, land registration and development approval procedure are time consuming and bureaucratically complex. On the other hand, urban management authority is promoting vertical growth instead of horizontal growth in peripheral lands. Existing land development trend is mostly controlled by the motive of developers rather than systematic housing need analysis (Alam, 2018).

Often landowners cannot get prepared mentally and remain demotivated for readjustment. With the support and consultation with developers this phenomenon can be resolved. The same threat remains for joint development as well, as owners expect to completion of the project without land sell (Larsson, 1997). As effective enforcement of laws for land ceiling is still missing in Bangladesh, higher income group mostly possess lands for their affordability (Islam and Zahur, 2016). Developers compete with each other for purchasing lands both in inner and outer Dhaka as the stock is limited. As developers are trying to give better price and in intense competition for purchasing, private landowners are getting convinced which is a contributing factor that complements the land price hike (Alam, 2018). On the other hand, high rate of house rent inflation, growing and easily available financing motivates middle class people to own flats rather than plots (Barua et al., 2010).

By maintaining a stable inflation rate as approximate 9 % since 1972 to 2010, land prices in Dhaka have seen enormous growth of 91% each year. This is the result of land market control by individuals and developers (RAJUK, 2016). Earlier developers used to pick broad roadside plots for apartment and housing development, private owner who used own private vehicles were attracted in that kind of projects. After a time being, scarcity of plots has diverted to the available options (such as single plots) which made apartments affordable for middle income people. Now-a-days private landowners seek more for lands rather than original price which is beneficial for them. On the others hand, for high plot price and construction cost, another group of people are attracted for purchasing flats from the developers that make maximum profit for the developers (Begum, 2010).

### **Why Land Readjustment can be an Effective Solution in Dhaka near TOD Stations**

In previous studies, land readjustment has been suggested by researchers only for fringe area development and management in the context of Dhaka city (Mahmud et al., 2014). RAJUK brought this method into limelight formally in Dhaka Structure Plan for

development control and management. According to Dhaka Structure Plan (2016-2035), the city would contain around 26 million people by 2035. In terms of existing average density in Dhaka Metropolitan Region Area (245 pph), additional 35,512 hectares land would be required for accommodating next generation and that might be gained only after conversion of existing agricultural lands. By considering these facts, RAJUK has recommended participatory land development techniques as Land Readjustment (LR), Guided Land Development Techniques (GLD) and others. Dhaka Structure Plan (2016-2035) provides guidance for mass transit relevant policies to encourage people for using public transport as metro system. Enhancing mixed use activities near TOD stations might create compact communities.

Land readjustment is beneficial from the policy context as well since it promotes intensification of land use by value uplift for landowners and increased rate of holding tax for municipalities. As the process can help to recover a certain portion of project cost, the redevelopment costs and benefits can be equally distributed among community, developers which also benefit the municipalities and lower income group (Louwsma et al., 2017).

TOD projects can be coupled with land readjustment initiative for creating new connections in between local and regional economic sector and thus land value increases. These types of projects can be developed feasibly if land readjustment can be applied strategically in complex redevelopment condition when both land and construction expenses are high (Schrock, 1995). By developing relevant redevelopment laws, landowners and developers can create convenient opportunities in buildup areas, nearby an already existing transit stations or being opened newly (Suzuki et al., 2015). As it is a participatory process, landowners get chance of decision making for planning and servicing for redevelopment (Louwsma et al., 2017). The unique characteristics of Dhaka's land market could be accommodated by introducing joint development in land readjustment process. Public authorities can play the role of policy planning and regulatory part, private developers may get involved to develop TOD plan as a financing partner, negotiator with the private landowner to pull the land, and/or just develop the real estate as per the preset guideline of the planning and regulatory public authorities. This will reduce the burden of land acquisition for the public authorities.

### **Policy Scope for Implementing LR**

In Japan, Korea, land readjustment has been applied by incorporating specific policies and acts to execute land readjustment projects. Usually, government agencies assemble lands and swapping is possible among landowners for except any transactions for infrastructure development that motivates people to agree (krabben et al., 2020).

With the agreement of landholders, land readjustment process can assemble the property rights for guided land redevelopment projects surrounding TOD stations. Significant urban redevelopment schemes need to launch for land parcel consolidations around existing underused TOD stations. Specific transit agencies are needed to be established for negotiation and communication build-up for stakeholders. From the example of Tokyo TOD development, it is evident that, both active participation and commitment of landholders (even real estate developers) are essential for maximizing land value added by TOD (Suzuki et al., 2015).

For addressing the relevant challenge of inadequate housing for all income group people of Dhaka, RAJUK should practice regulatory measures for ensuring equality. Even government can persuade specific real estate companies for investing in sensitive or comparatively developed areas (BIGD, 2017). For implementing TOD with greater benefit, Draft Detailed Area Plan (2016-2035) by RAJUK guides for approaches like land acquisition, land readjustment, land redevelopment. These approaches can be carried through government or private or even by a PPP initiative. Few schemes for encouraging readjustment projects near TOD stations as follows:

- For executing land readjustment, “betterment fee” has been suggested to introduce in DAP. Landowners, who are getting benefit from the value uplift would be responsible for paying this fee and that would be used for further development projects like land redevelopment, readjustment etc.
- In Draft DAP (2016-2035), block-based development has been encouraged for meeting the high demand of affordable housing with lower supply of land. Dhaka Structure Plan (2016-2035) recommends the prohibition of housing development projects and encourages block-based development. Till now no standard and mechanism have been fixed for this kind of development, no detail direction about the size of block, density, building height and community has been figured yet.

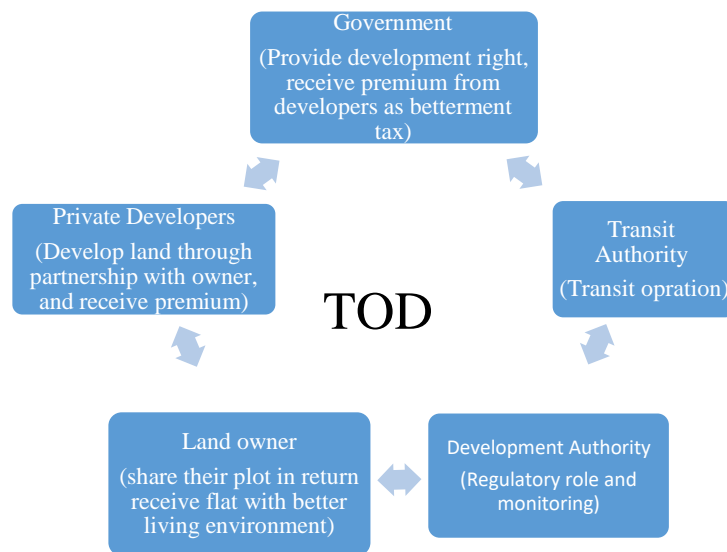
As the investment takes longer time for profit, private developers don’t find interest in projects like TOD. Few solutions for encouraging private developers as subsidies can be provided as following:

- FAR incentive,
- Smooth building permit or construction approval procedure,
- Loan with lower interest rate,
- Promoting community-based parking instead of individual parking,
- Specific regulations by DTCA, RAJUK could be developed for TOD implementation

As like Tokyo experience, PPP can also be applied in the context of Dhaka. For reducing social tension, land readjustment can be applied in a freehold system, where municipalities and transit developing agencies won’t possess any land. Land value can be uplifted through this process as it overcomes land purchase cost with several economic opportunities via densification and transit supportive investments (Suzuki et al., 2015). The creation of a public-private mechanism is essential to balance for both public and private sector benefit. Different examples like Tokyo and Toyama from Japan, Denver and Portland from the United States, Kualalampur from Malaysia set public-private collaboration-based policies and mechanism for strengthening public transportation, concentrating community facilities near station, ground lease to private developers (kidokoro, 2019). In the sixth five-year plan of Bangladesh (2011-2015), government already recommended for depending on PPP initiative for housing as well as improving land registration system. Thus, PPP can also contribute to ensuring efficient land transfer and management (BIGD, 2017).

### How can Developers Play the Role to Mitigate Challenges for Land Readjustment?

RAJUK, the major development authority for Dhaka has developed several housing projects earlier with the provision of infrastructure and community facilities (Islam and Zahur, 2016). Unfortunately, those projects had lots of issues for plot distribution among each income group people, as only government officials got privilege and private professionals didn't get the equal opportunity (Haque, 2012). Furthermore, government land acquisition process couldn't gain the trust of people in the socio-political context of Dhaka. People of lower income often compensate through lower than the market price. On the other hand, developers are more popular for joint development. While the landowner provides their plot in return of varying share of developed flats (ranges from 30 to 60 percent) according to the location of the plot.



**Figure 1:** Thematic diagram of land redevelopment model for TOD

Source: Developed by the Authors, 2021

Barua et al., 2010 has brought limelight on some facts that describe the reasons behind growth of developers in Dhaka:

- Increase in house rent and decrease in affordable housing, smooth financial scope, shortage of land etc. are increasing with days which are making path for developers to come forward. The increasing trend of real estate development projects and aggregated demand is a proof of further scopes for developers.
- Building construction cost and maintenance have become a matter of huge expense and time and thus people get demotivated for individual construction. Individuals are being motivated to purchase apartments for better housing design as well.
- As the financial system is still not so supportive due to the complexity in mortgage system and loan mechanism, owning personal property or carrying construction procedure adds difficulties in overall maintenance.



- Identity verification of individuals is difficult and lengthy procedure in terms of approval. For avoiding this complicated procedure, real estate developers could be easier to deal as consumers get attracted for apartment purchasing. Assessment of institutional transparency is convenient rather than individuals.

Affordable housing price, better communication facility in between residence and workplace, willingness to live closely with relatives, staying in the nearest areas of primary roads are noticeable factors that guides the locational choice of apartments (Labib et al., 2013). This is the core reason people prefer the apartment over house. One of the TOD principles is affordable housing within TOD precinct. From this point of view role of developer could be a plus. Every year 10,000-12,000 apartments used to be delivered by developers (The Daily Star, 2020) which increased up to 17000-25000 in 2015. Right now, the housing market of Dhaka is completely dominated by private developers. According to REHAB, the total registered number of developers is 1191 till 2017, while more 309 are doing projects (BIGD, 2017). All of this development happens through partnership among landowners and developers.

Private developers used to focus on higher income group for residential facilities, but the trend has changed in recent years. Middle income group has become the point of attraction since 2010s. However significant portion of land is still unused or underutilized and thus urban regeneration projects can be adopted for ensuring the maximum use of lands (Islam and Zahur, 2016). From the TOD experience of Tokyo, it has been revealed that developer can foster land readjustment projects. Developers can maximize the land value near a new station by investing on local infrastructure. The real estate policies and techniques can contribute to their planning and their resources can complement in this regard (Suzuki et al., 2015).

### Conclusion

Dhaka's urbanization always featured spontaneous and unplanned growth. None of the regulatory measures were effective because of different factors like organizational capacity to enforce, lack of coordination among authorities, lack of vision, time responsive planning practice without considering the future consequences, etc. The proposed metro lines will certainly bring in higher density around the station areas. Moreover, Dhaka city is not a virgin land where fresh development can be proposed without massive amputation. The existing context needs to be carefully studied to integrate transit and land use. Current policies addressed TOD as a solution but still fail to answer questions like how the transit will align with the surrounding land development within the TOD sphere, and what type of development or redevelopment will be needed for successful implementation of TOD. Transit network has a stimulating power to drive the new development or redevelopment of any city.

The whole area will be turned into haphazard and chaotic if the issues are not addressed in the right time with adequate forecasting tool, location analysis, and integrated land use transport modeling. Different research addresses private land ownership and land acquisition by government as the challenge for TOD development in Dhaka. However, literature shows strong role of developers behind the successful TOD implementation in developing world. In Dhaka, there is also huge scope of developers as well because of

their domination share in housing market. Coordinating with government through PPP, developers can lead to successful TOD implementation considering the land ownership and acquisition dispute in the context of Dhaka.

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