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Self-financing land and urban development via land readjustment and value capture

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ABSTRACT

This paper is about a unique case of a 47 mile long ring road in Ahmadabad, India, planned and implemented using self-financing land readjustment (LR) technique. Uniquely, no landowners were displaced, while the road's 200' wide right-of-way (ROW) was reserved while land abutting the road's ROW was also developed in a self-financing manner. Forty six different – neighborhood scale LR plans were formulated, systematically planned, and spatially arranged to carve the road's ROW and service abutting land with infrastructure. This paper showcases how a regional level infrastructure asset can be created using the LR technique, and how rapidly growing fringe area can benefit using the LR technique. This case is becoming a new model for capital intensive road projects now in India, inspiring other financially constrained similar size cities to follow Ahmadabad's LR based ring road development model. The case study is useful for land management and planning professionals, especially those who are engaged with fiscally constrained and rapidly urbanizing cities of the developing world.

Introduction

The developing world cities in general and large metropolitan areas in India in particular face enormous urban development challenges due to rapid urbanization. As per the Census of India (2011), in the last decade, urban India witnessed a 31.8% growth as compared to a meager 12.2% in rural areas. Since India's population base is large – 1.2 billion in 2011 – rapid urbanization trends pose serious challenges to the cities in terms of lack of infrastructure, basic amenities, roads and serviced land for housing (Ramachandra, Aithal, & Sanna, 2012), and most importantly, inadequate municipal funds (ET Bureau, 2012). The McKinsey Global Institute (2010) report estimated that by 2030, over 590 million people in India will live in cities, 68 of which will be in the million-plus cities alone. Further, over 70% of the net new jobs will be in cities and a whopping $1.2 trillion will be required to finance the urban infrastructure investment, which is over eight times of the investments made in Indian cities today. Furthermore, over 30 billion ft^2 of paved roads are required (McKinsey Global Institute, 2010). Owing to this rapid urbanization pressure, urban growth precedes any planned interventions, resulting into highly chaotic and congested cities, severely lacking in efficient infrastructure and other basic amenities. On one hand, cities are exploding with rapid urbanization and economic growth; while on the other hand, cities are fiscally so much challenged with limited budgets that they are failing to meet the increasing infrastructure demand and growing gaps exacerbating situation. There is a need for alternative mechanism to make provision for infrastructure in more innovative way.

This paper focuses on a case study in India of innovative use of land readjustment technique in creating regional level infrastructure asset and draws lessons that other cities can learn from. A regional ring road was planned in India's 6th largest city of Ahmadabad, which has a population base of 6.3 million and is an important center of economic production. The city is rapidly urbanizing with 22% decadal growth rate (Census, 2011), and its professional planning community is repeatedly challenged to keep pace with the growing demand for urban infrastructure to accommodate new growth. This lack of quality infrastructure, roads and planned urban land has created ad-hoc, fragmented, and leapfrogged growth, which is even more visible in the fringe areas of the city.

To address this, and to develop a more coherent plan, in 1999, the city and its fringe area planning authority, the Ahmedabad Urban Development Authority (AUDA), put together a future Development Plan (DP) to strengthen city's road network systems and proposed several new roads and made recommendations to service raw underdeveloped urban land. In this DP, along with strengthening of the existing arterial roads, a 47 mile regional ring

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road was also conceptualized. The purpose of this ring road was to by-pass regional heavy traffic in order to relieve traffic congestion from the internal city roads and was aimed to connect several peripheral villages fast developing. This paper discusses this same ring road project, which became a landmark success story and is now inspiring other large cities such as city of Surat that has recently proposed to follow the Ahmadabad's LR based road development model. The paper first presents a brief history of LR, provides planning context in the case study city, and then presents the case study including details of the land readjustment mechanism as employed in case of the ring road. The paper then concludes with lessons that case study provides, which several developing countries can make use of.

Land readjustment as a land management tool

Land readjustment (LR) is a self-financing land management tool. It is principled on the fact that the recipients of the benefits, after development, bear its costs (Sazanami, 1985). LR involves a blend of urban planning and real estate principles such as local planning laws, urban design principles, real estate appraisal techniques, participatory and communicative planning approach, and land surveying (Day, 2007: 42) and is used in several countries to service urban land.

Land readjustment for land development – a brief history

Land readjustment (LR) as a land development tool has a fairly long history; a review of literature dates its usage back to as far as 1791 in the United States in the planning for federal city of Washington DC (Ewing, 2008: 58; Kite & Jusserand, 1929: 21; Merriam, 2009; Reps, 1967). Later, it was used in Germany during the Lex Addickes in Frankfurt-am-Main in 1899 (United Nations, 1995) and in the Netherlands for rural lands (Krabbena & Jacobs, 2013), and in 1923, in Japan and other countries.

LR is quite popular worldwide today; Countries such as Australia, Germany, France, Netherlands, Sweden, Israel and several others in Asia practice LR in its varied forms (Lozano-Gracia, Young, Lall & Vishwanath, 2013; Turk, 2008). In Asia, Japan (Sorensen, 2007, 2000a), Indonesia (Agarwal, 2000), South Korea (Karki, 2004), Thailand (Archer, 1992), Taiwan (Lin, 2005), Nepal (Karki, 2004), Turkey (Turk, 2005) and Sri Lanka use LR. More discussion on the historic evolution of LR and how LR is used in different countries is available in Turk (2008), Merriam (2009), Hong (2007), Karki (2004), Larsson (1997), and Schnidman (1988) and is beyond the scope of this paper. The success of LR in the above countries is also attributed to the fact that cities in these countries were largely fiscally constrained, and were experiencing rapid population growth. The real estate values were high and land markets were significantly active causing demand for urban infrastructures and serviced urban land to accommodate new growth. In many cases, LR was chosen as land development tool, because of its self-financing nature and its greater social and political acceptability.

Process of land readjustment

The process of LR in a nutshell involves pooling and reconfiguring (re-parceling) of underperforming contiguous land parcels, and then, installing urban infrastructure there. As an end result, the process facilitates coordinated and planned development where all landlocked parcels get access to planned roads and infrastructure. LR can also be characterized as a process by which private lot areas are reduced in size to create public land. The carved public land is then used for widening or, straightening-out streets, developing public amenities and finally, creating developable lots and blocks (Carola, 2010). More specific details of land readjustment as used in the case of ring road are presented below:

A simplified visual of LR technique is presented in Fig. 1, which shows how initially, irregular shaped, inaccessible, low value agriculture farmlands with no initial public infrastructure (see on the left hand side of the Fig. 1, where, say, 100 unit area of original land parcels) are first pooled for the planning purposes, and then, rearranged into buildable parcels (see the right hand lower side of the Fig. 1). The entire LR area is then equipped with urban infrastructure services such as roads, water and drainage and other public amenities. This process converts the low value farmlands into more marketable urban lots and area into more planned neighborhood. These serviced parcels are then returned back as (final parcels) to the landowners. As shown in Fig. 1 on right hand upper side, a fixed percentage of each landowner's original land parcel is appropriate as a contribution to make provision for the ROW of new roads and public amenities such as parks, social housing. Additionally, to create a land bank, a fixed percentage of land is also appropriated, which is reserved to be sold later in future. This reserved land is used to cover the part costs of new infrastructure developments (Ballaney & Patel, 2008; Mathur, 2013a; Sorensen, 2000a, 2000b).

The process has certain prerequisites as discussed in the next section of this paper, which include a needed legal framework, favorable real estate market conditions, and a strong political will. The LR requires multiple-step process as defined is in the GTPUD Act, 1976 of the state. More detailed discussions on these steps are available in Mathur (2013a) and Ballaney (2008). However, in this paper, the LR process as followed for the 46 LR plans is summarized in 6 steps as follows:

1. *Intent Declaraion Stage – This stage includes declaring intention for LR before the land owners and demarcation of LR area boundaries along the proposed ring road's alignment. After the declaration of chosen area for land readjustment, the designated area and all land parcels within this area are considered frozen for any future development purposes for a fixed amount of time.*
2. *Collection and Collation of Land Records*[1] *– This stage includes collection of cadaster maps, title records on ownership, size, use and values for lands within the demarcated LR areas. In this stage, physical land surveys are conducted and landowners are notified for LR process.*
3. *Preparation of a Preliminary Layout Plan – This stage involves pooling of all land*[2] *and preparation of a layout plan. A fixed percentage of participating lands are appropriated and allocated for ring roads' right-of-way (ROW), for smaller access roads, and for parks, schools and housing for poor. Usually, depending on the local legal statute, this way the implementing agency appropriates 30–50% of the original parcel area and then returns back rest of the 70-50% to the landowners.*[3] *In this stage, original parcels are reconstituted as new parcels and get road frontages. This reconstitution is done keeping the original shape, size and location of parcels into consideration. Access to roads, amaneities and parcel's new geometry, create greater property values for landowners.*
4. *Estimation of Costs and Finances – This stage involves calculations of betterment charges based on infrastructure costs and value enhancement to the parcels.*

[1] This stage, indirectly, also scrutinizes the 'cloudy' land titles.

[2] After accounting for their original lots attributes – such as records of ownership, location, size, current use, and land value.

[3] The revised GTPUD Act of 1976 allows up to 50% of land that can be appropriated from the original land owners.