

A Critical Review on Land Readjustment Technique

Prakash Mahto*

* Department of Urban Planning, Lovely Professional University, Punjab

Abstract

Land readjustment (LR) is in many countries a favored legal instrument for assembling land for development, particularly when there may be a lack of public funds for compulsory purchase and provision of infrastructure. Land restoration can be an effective tool for new ground development or urban reconstruction. The developers jointly leave the land for streets and other public places, create the required infrastructure in whole or in part and conform to the new plan with current boundaries. The new building sites will be divided by land position or input value. The paper describes approaches and applications in different countries and addresses benefits, challenges and prospects for future developments in practice.

Keywords: Value Capture, Land Readjustment, Public Infrastructure, Town Planning Scheme, Public Fund, Land Development Tools

1. Introduction

One of the urbanization challenges in developing countries is the lack of sufficient land for new construction areas. The introduction of land development plans is therefore important in order to satisfy urban land needs and promote comprehensive urban development. There are different methods for understanding these processes and the most widely used form of land expropriation is worldwide. Compensation-based processes are mostly used to unlock land for proposals for urban land growth but this is both expensive and oppressive. There has to be a more effective way to provide land for new settlements and houses. Land Readjustment (LR) is one of the 'value-capture process' land development methods used in developing countries to promote urbanization requirements. It has the potential to address land-use issues in urban areas where new urban developments need to be built and developed.

1.1 Value Capture Method

“Value capture” is a funding mechanism that recovers some or all of the value that public infrastructure generates to share the profit with local administrations and private landowners. This aims “to more clearly connect the infrastructure costs with those benefiting from government investment or policy decisions. It can improve the financing mix's equity and fairness by capturing some of the windfall gains received by those who benefit in helping to pay for infrastructure.” Value capture refers to the public recovery of the changes in land value (unearned income) created by securities other than direct contributions by the landowner.

The aim is to draw on collectively created allocations of land value to allow local governments to enhance land use management efficiency and finance urban development and service delivery. [12]

These principles of value capture are:

- I. Distribute the cost of investment equally and equitably.
- II. Implement frameworks for fast and cost-efficient financing.
- III. Ensure the financing strategy takes into consideration the overall tax burden on individuals.
- IV. Foster optimum and efficient use of resources.

- V. Optimize the efficiency and effectiveness of infrastructure and services (including its maintenance).
- VI. Changing actions, and controlling demand.
- VII. Align infrastructure costs with the consumers and those who profit from it privately.

1.2 Land Readjustment

"Land readjustment is an instrument for land organisation, which means both the provision of land needed for public purposes and the suitable formation of private land according to the rules of town planning." [11]

Concept:

- Promoting efficient, sustainable & equitable land development

Achieving planned & sustainable growth through public participation in cooperation

Consolidation for:

- Greenfield and brownfield growth
- Redevelopment / Revitalization of downtown areas
- Community site acquisition (addition and improvement)

Land readjustment (LR) is an important strategy to "implement development plans in a variety of countries by transforming rural land into urban land and providing urban infrastructure". Briefly, "the LR initiatives begin with a formal agreement that can either be a private initiative as is the case in Japan, France, Sweden, and South Korea, or a public initiative as applied in Germany, China, Turkey, Finland, Australia, South Korea, and Indonesia." [5] Land readjustment is intended to maintain existing land structures where comprehensive urban land development is necessary. The main objectives of a land restoration project might be as follows:

- Growth of new construction areas
- Restructuring of an already urbanized city
- Expansion and renovation of public facilities
- Rehabilitation of disasters

2. Case Study: Four Corners, Boston, U.S.

Readjustment of land is obviously less intrusive and provides the property owner with better protection. This gives homeowners both the right to return, and the opportunity to participate in the income generated by the program. Neither eminent domain nor free trade will make such a point. "Positioning land readjustment as a reinforcement of private property rights" in the American context would probably be a compelling argument.

2.1 Rationale

It should be made clear that the designation of the Four Corners as the area of study in this region is not meant as a plan for land re-adjustment use. The report is not about lobbying nor questioning. That being said, the site poses several beneficial factors which led the researcher to select it for land re-adjustment use:



Figure 1: Map of the neighborhood of Four Corners Main Streets displaying residential and public plots (Source: Boston Redevelopment Authority)

- A portion of the street on Washington Street has been identified by the City of Boston as the Main Streets area. Its fact shows local plans for the redevelopment into a thriving commercial district of what is essentially a dilapidated industrial environment.
- The expansion of the Commuter Rail Line at Fairmount Corridor requires “the introduction of a new Four Corners Station in 2013 (Massachusetts Bay Transit Authority, 2012). This will bring the site within 5-10 minutes of rail transit walking distance and generate increased demand for living and working here”. [1]
- The overwhelming majority of existing properties are either empty or in abandoned structures making them largely void. It promotes “regeneration by reducing the costs of demolition and limiting the mobility of existing residents and businesses”[3].

2.2 Applicability

The scale of Intervention: Project-based

2.3 Beneficiaries

Readjustment of “land is a joint venture between local authorities and the owner of the estate, who voluntarily agree to pool their properties, redistribute the property among them and share the development expense”. [7]

Peoples who get benefit from this project:

- I. Clear advantages for its customers, infrastructure owners, companies and workers
- II. Indirect gains for sections of the community, such as homeowners, residents, companies, developers and states, in particular by - land values, revenues, and taxes
- III. It further aims to improve the tax money generated to address potential investment and utility needs, with greater benefits for the community, including economic increases and increased liveability. That also has tax advantages and incentives for the city at large.

2.4 Process of the Tool

Procedures in land readjustment

This land readjustment scheme requires a number of measures to be completed. Differences in national land policy from one country to another indicate that minor changes are necessary to implement the procedures for land readjustment.

Steps used in land readjustment process



Figure 2: The process of land readjustment

2.5 Framework of Capturing Value

These specific standards are applied consistently across both models and include:

- Income-related factors for each product type: rentals, vacancy rates, operating expenses, and capital expenses.
- Cost-related variables: the construction costs are hard and soft.
- Capital investment factors: Danger-free rate and discount rate for each product category and time of expenditure representing the specific risk of each project.

The factor that plays a role in deciding levy:

1. Distance from the project area
2. Landuse
3. Size of plot
4. Access to infrastructure services
5. Existing infrastructure
6. Support of legal framework

2.6 Supportive Legislative Framework

The 'LR' mechanism is a “powerful and well-coordinated statutory tool to simultaneously prepare a detailed land appropriation, land readjustment and infrastructure-building plan, financing, and implementation mechanism, and mechanism to involve landowners in the process”.

2.6.1 Decision of the authorities

To conduct a land construction project in a given area, there must be a strong need for public and private conditions on the property. To that end, the urban planning department is preparing and recommending a land adjustment proposal to local authorities. The city council would then discuss possible solutions and make a recommendation on the project. When the Council approves “the project, it must notify all landowners in the proposal area, including corporate, community, and association ownerships. Landowners in the project area are expected to devote an equal portion of their land to the development of public infrastructure. The remaining phases of the scheme are then carried out by the municipality”.

2.6.2 Periodic Revision

One-time upfront before project initiation

2.6.3 Proceeds of The Tools

Because many of the current properties (both private and public) are vacant, this case may not entail restoring large numbers of landowners to the city. As such, establishing a landholding company and entering into a ground lease with a construction agency may be suitable for them to build the project. Can landowner will earn shares equal to their contribution, and increase the incremental value. For example, Parcel 11's owner did donate about \$150,000 worth of land. She collects shares worth \$263,000 in an undifferentiated sale, a rise of 77 percent in her "investment."

The additional value in the base case represents an increase of 77 percent over the gross residual value of the enterprise. When valuation increases are segregated between commercial and residential property, the value of commercial land increases by 55 percent and residential land increases by 115 percent (due to the highly elevated residential density allowed). In fact, the majority of the revenue is directly received by private

landowners. Whose value has increased by 95% compared to an increase of 60% for publicly owned properties (due to a large number of private residential plots)?

Alternatively, money could be allocated to all shareholders in an undifferentiated way so that they would all obtain an increase in value of 77 per cent, regardless of having committed to commercial or residential real estate. The level of service will certainly be a crucial issue for the project collaborators to consider. [1]

Table 1: Comparative Features of Boston Land Readjustment

Features	Boston	
Initiation of Land Readjustment Project	Public Sector	
Minimum Required Landowner Consensus	0 %	
Project Managed by	Municipally-appointed independent board of experts, usually consisting of: an attorney, a land appraiser, a surveyor and 2 local parliament members	
Land Valuation Determined by	Municipally-appointed independent board of experts, usually consisting of: an attorney, a land appraiser, a surveyor and 2 local parliament members	
Standard of Distribution	Relative Value (Primary)	Relative Size (Limited Use)
Land Retained for Public Use	Varies	10% or 30%
Additional Land Retained for Cost Recovery	Technically not permitted, but land is retained through Shared Value Scheme	Technically not permitted, but surplus land not needed for infrastructure can pay project costs
Adjustments Made through Monetary Compensation?	Yes	

2.7 Process of Value Capture

In complex cases where a lot of individuals belong to parcels in a project field, it is difficult to coordinate their preferences to achieve a win-win in the outcome. It often involves the creation, in the form of trust with a mandate to carry out the development, of public, semi-public or even private third-party agency.

One such instrument is a land readjustment to facilitate the growth of large areas. As its name implies, its value capture logic is based on in-kind (usually land) donations from all homeowners in the region to an agency that, in turn, uses (sells) those contributions to self-financing improvements in municipal infrastructure and services, which then increases the value of all properties in the area. Though each original landowner's plots are re-adjusted to a different size and shape, each plot's overall value should be higher due to the investments. That is, the participants assume that the appreciation arising from urbanization will more than compensate for each re-adjusted plot's smaller size, and they bear that chance.

2.8 Who is it that accounts for infrastructure?

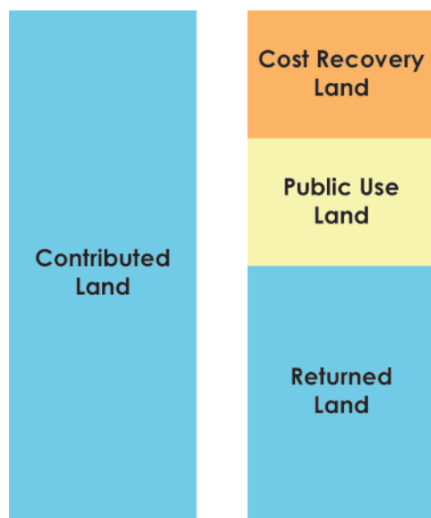


Figure 3: Land distribution scheme before and after land regeneration.

Eventually, to pay for public services, payments must come from the government, either through -taxes or spending cuts, or from consumers and other recipients. Historically, “politicians have spent as a 'public good' in services or something that can be used to help society as a whole. Financing for this initiative ultimately came from the state's general government income by reducing cash surpluses, raising taxes, decreasing costs or the or introducing traffic charges (such as some highways supported in whole or in part through toll revenues)”. Any financing has also come from donations by developers, real estate development or asset sales. But as capital demands increasing, so too are the strains on government budgets rising.

Land restoration policy in which “50 percent of the donation land is returned to the original homeowners and 50 percent is kept for public use or rented as a cost recovery site. If the land readjustment cycle ends in a tripling of land prices, farmers would get a plot worth 150% (3x

50%) of what they pay. When prices rise by 400 percent, they will return their investment interest twice (4 x 50 percent)”.

Good charges could fund 87 percent -98 percent of the cost of the project if all expenses and sales are realized in the first year itself. The balance could be funded by selling the property.

2.9 Advantage

- **Mobilizes** landowners in a provisional partnership to collectively manage their fractional parcels of land as a single planning unit;
- **combines** the construction of private systems with public infrastructure;
- **integrates** urban policy with private development through a comprehensive administrative process;
- **Enhances** towns by providing services and facilities in appropriate places under the district design plan by reserving private land at no cost to the Government;
- **appreciates** land values through municipal upgrades and improved use of the site;
- **funds** construction through the selling of valued reserved land to new investors.

2.10 Disadvantage

- **Getting into business money.** “Many owners would have flat land that is easy to grow and already has a high agricultural value. Others would have hilly, rocky, or marshy land built more expensively. Equity appears to suggest in the calculations that the former owners will get greater treatment than the latter”.
- **Equity at the project level.** “In a big project, it can take years to actually build roads and other public services. Some parcels of land will be affected immediately, especially those falling in the proposed street beds, while another land will be far less affected”.
- **Post project equity.** “The proposed area plan may identify certain areas for commercial use, some areas for manufacturing or other useful uses, some areas for high density residential development, some low-density residential uses, and so on”.

3. Application of Land Readjustment in Various Countries

Table 2 Various International Cases of Application of Land Readjustment

Case Study	Assemble Land for Redevelopment	Recover Project Cost	Implement Proper Land-use	Capture Land Value Increments to Finance Public Infrastructure	Encourage Public Participation
Thimphu, Bhutan	Yes				Yes
Yumin and Lie De Villages, China	Yes		Yes	Yes	
Khed and Magarpatte, India	Yes				
Turkey	Yes		Yes	Yes	
Sangki, Bangkok	Yes	Yes			Yes
Bogota, Columbia	Yes	Yes	Yes	Yes	Yes
Lidata, Ethiopia	Yes	Yes	Yes	Yes	Yes
Nagpur, India	Yes			Yes	Yes
Huangpo, Angola	Yes	Yes			Yes
Bhuj, India	Yes				
Las Heras and Constitucion, Chile	Yes				Yes

Source: [2]

4. Application of Tool in India

In Gujarat, Town Planning Schemes (TPS) has a long history as a tool for urban development. As early as 1917 the first TPS for Ahmedabad City's Jamalpur district was taken up. Perhaps Jamalpur area Town Planning Scheme was the first TPS for the world too. The 1915 Bombay Town Planning Act called for the growth and development of various parts of the city and promoted the implementation of Town Planning Schemes.

4.1 Case Study: Ahmedabad

Under the GTPUD Act, 1976, ULBs handle the supply of serviced land through a 2-tier mechanism. First is the planning of a decadal macro-level "Development Plan" for the whole region. Second a large number of "City Planning Schemes" micro-levels addressing approx. 100 hectares of land are allocated annually –for new growth areas. 1126 TPS is ongoing and nearly 600 more TPS are to be taken up in the next 5 years. 20% Deduction was introduced earlier, but now it has grown to 40%. Till the date of 100125 Ha of land is scheduled via Town Planning Scheme. [3]

Land pooling regime:

- 1915: extended to Salsette Island – Bombay
- 1925: Jamalpur First Town Pooling Scheme in Gujarat
- 1954: Revised Bombay Town Planning Law
- 1976: Revised Act in Gujarat (GTPUD)Act, with further clauses
- 1995, 1999 & 2001: Revised GTPUD Act

Gujarat experience:

- pooling the system for nearly 100 years
- proved to be a constitutional device, backed by special laws & Cooperative participation rules.

5. Conclusion

Land regeneration is a very sophisticated and affordable method for executing urban development policies. The manner in which the communities swap property implies little financial risk as they do not have to buy and maintain the initial plots. Since land readjustment is simply a form of plot swap, there is, therefore, no problem with the sale of the new property despite all these risks. The increase in land value from agriculture to construction land can be divided between landowners and municipality. Costs of urban development may be financed (at least in part). And if this instrument of sustainable urban development is well applied, a relationship between landowners and municipality can be achieved and a great benefit for both landowners and municipality is assured.

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