

Performance Check of Urban Land Management Policies With Sustainability Indicators

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Abstract: Land policies are of fundamental importance to sustainable growth, good governance, and the well-being of, and the economic opportunities open to, both rural and urban dwellers - particularly the poor. It is the second-most-populous country in the world. This will mean that the existing cities will continue to grow larger and many new cities and towns will be added. To manage the transformation of India's cities and towns and effectively manage new growth requires effective urban planning protocols, processes, and institutions underpinned by effective legislation. Taking a viewpoint that distinctive responses are required to transform the cities and towns from their present stressed conditions and managing new growth in a manner that does not result in repeating the present problems in the cities and towns, this paper focuses on introduction of basic approaches of land management techniques in India as well as analytical method to evaluate the same to develop new sustainable land management techniques for Indian cities.

Keywords: present land management approaches, parameters of check, AHP

I. INTRODUCTION

Economic reform has given considerable impetus to the process of urbanization. India's population of 1.21 billion and, of

this, 320 million (27.8 percent) live in its 5,161 cities and towns, and it is expected that by 2050 half of its population will be living in its cities and towns. With this the country faces a truly formidable challenge in managing the rapid process of urbanization and the growth of its cities. In India so many models and techniques were developed to anticipate urban land supply issues. Implementation of the Master/Development Plan proposals requires procurement of land either by way of private negotiation or through the Land Acquisition Acts. Land procurement through such means requires huge capital investment which is generally beyond the fiscal capabilities of many of the local authorities. As a result, several plan proposals never see the light of the day. There is growing consciousness that urban development should be self-financing with minimum burden on local authorities and the Central and State Governments. Under intense pressure it is surprising that this land demand has conventional methods of supply. Hardly few cities can meet demand on a sustainable basis, even if Public sector, land Nationalization and development controls have tried to stimulate the supply of land. During 19th century policies, strategies and techniques evolved in western countries are ineffective and counterproductive, because conditions applied are simply inapplicable that are presently undergoing the process of economic development and urbanization.

So it is fact that analytical method to evaluate land management techniques has a vital scope of research in context with the Indian realty sector. Indian metros and

capital cities are day by day overcrowded and hence a huge serviced land parcel is required to compensate housing shortage.

II. URBAN LAND MANAGEMENT MODELS

I. UP Model (Land Acquisition Approach)

In this method, the public planning authorities acquire large areas of land from agricultural landholders (farmers) under the Land Acquisition Act of 1894. Compensation paid to farmers is based on prevailing agricultural land prices. The Ownership title is changed. To minimize opposition to acquisition, farmers are paid prices marginally higher than agricultural land prices. Then a master plan of the area is prepared, laying out the roads, plots for social amenities, and plots for sale. Roads and infrastructure are then built, using government funds or loans. Serviced plots are then sold for urban uses at market rates, which are most often much higher than the rate at which land is acquired.

The merits of UP model are that adequate amounts of land for urban uses can be rapidly generated, provided that there is little opposition to bulk acquisition from farmers. There are very few constraints in preparing the master plan as huge chunk of land is available. The demerit of this is that the farmer/the land owners are at a financial loss as the land value after the development rises tremendously & the authority & the developer enjoys the financial benefit instead of land owners.

II. HARYANA MODEL (GUIDED LAND ACQUISITION APPROACH)

Another alternative to compulsory land acquisition has negotiated the land purchase as pursued by private colonizers. This was made possible for the first time in India under the Haryana Municipal and Regulation of Urban Area Act, 1975. The Act permits developers to negotiate direct purchase from farmers for large scale land assembly for urban development. This land is generally located on the fringes of existing towns and the negotiated prices are three to six times higher than the government rates. The owners are, therefore, happier selling the land to private colonizers rather than having to deal with public agency under the Land Acquisition Act. Land assembly is also completed relatively easily.

III. MAHARASHTRA MODEL (TRANSFERABLE DEVELOPMENT RIGHTS APPROACH)

Concept of Transferable development rights (TDRs) is a recent innovative land assembly technique introduced by Maharashtra state for cities having 2 lakh & above population. In TDR concept, the potential of a plot of land identified as intensity of built-space guided by FSI, & separated from the land itself & made available to the land owners in the form of "Transferable development rights (TDRs)" to be utilized by land owner from an inner-zone (original area) to an Outer zone (receiving area) specified by regulations.

According to the Development Control Rules any land reserved for public amenities, utilities & services can compulsory be acquired by compensating in the form of TDR. TDR's will be available only for prospective development of reservations. The concept was introduced as it was found that cooperators did not have funds to compensate land/property owners. The development rights certificate can be transferred and sold only once. The Transfer of Development Rights (TDR) is an important and integral concept of the real estate sector and has become marketable instrument. TDR's will be available only for prospective development of reservations. This gave rise to an increase in growth and opportunities in the real estate market, as well as it have positively affected the implementation of development plan process.

IV. GUJARAT MODEL (LAND POOLING & READJUSTMENT APPROACH)

It follows Land Pooling & Readjustment approach and it is found to be best as it involves Public Participation. In this method, the public planning agency or development authority temporarily brings together a group of landowners for the purpose of planning, under the aegis of the state-level town or urban planning act. There is no acquisition or transfer of ownership involved, there is no case for paying compensation.

A master plan of the area is prepared, laying out the roads and plots for social amenities. The remaining land is reconstituted /readjusted in regular shapes into final plots for the original owners. The size of the final plot is proportionately reduced to the size of the original plot, and its location is as close as possible to the original plot. A betterment charge based on the cost of the infrastructure proposed to be laid is levied on the landowners. Infrastructure is then provided utilizing these funds. There are merits as well as demerits to this method. The planning process involves the preparation of master plan & then micro level planning of the same area which is known as Town planning scheme at local level. Master plan includes new growth areas, zoning regulations, city level infrastructure & development control TP scheme indicates plans at neighborhood level with infrastructure, land readjustment; reserved plots for social amenities & uses. These TP Schemes are process that involves active public participation at grass root level of urban planning & hence this method is fairly successful.

III. AHP FUNDAMENTALS

Analytic Hierarchy Process (AHP) is an MCDM method based on priority theory. It deals with complex problems which involve the consideration of multiple criteria/alternatives simultaneously.

Its ability to incorporate data and judgment of experts into the model in a logical way, to provide a scale for measuring intangibles and method of establishing priorities to deal with the interdependence of elements in a system to allow revision of judgments in a short time to monitor the

consistency in the decision-maker's judgments to accommodate group judgments if the groups cannot reach a natural consensus, makes this method a valuable contribution to the field of MCDM.

The AHP template works under Windows OS and Excel version MS Excel 2010 (xlsx extension). The workbook consists of 20 input worksheets for pair wise comparisons, a sheet for the consolidation of all judgments, a summary sheet to display the result, a sheet with reference tables (random, index, limits for geometric consistency index GCI, judgment scales) and a sheet for solving the Eigen value problem when using the eigenvector method (EVM).

IV. EVALUATION PARAMETERS

To evaluate urban land management policies in India, questionnaire was formed and filled up by some experts of urban planning. The relative weights are found out and compared and pair wise matrix was formed.

Following basic three methods of urban land management of India is selected for performance evaluation:

- Land acquisition
- Land pooling and readjustment
- Guided Land development

From the list of general indicators and land attributes indicators following indicators are selected to perform the study:

Effectiveness, Accountability, Efficiency, Transparency, Competitiveness, Profitability, Land legislation, Land tenure, Land information, Land speculation and Land Registration.

To evaluate the performance of the existing land policies and indicators BPMSG AHP software by KLAUS D. GOEPEL was used to solve pair wise matrix.

CALCULATIONS AND RESULTS

The calculations made are on basis of two indicators:

- General indicators
- Land attributes indicators

A. General Indicators:

Weights are finding by solving the pairwise comparison matrix. Final results are shown below in tabular form.

Table 1: Weights of general indicators

General Indicators	Weights
Effectiveness	0.103
Accountability	0.192
Efficiency	0.126
Transparency	0.340
Competitiveness	0.087
Profitability	0.152

Eigen vector for all general performance indicators was finding out by using same software final matrix is shown below in tabular form.

Table 2: Eigenvector for land policies

ULMP	Effectiveness	Accountability	Efficiency	Transparency	Competiveness	Profitability
LA	0.670	0.250	0.240	0.160	0.320	0.620
LP/R	0.215	0.628	0.602	0.750	0.325	0.197
GLD	0.115	0.122	0.158	0.090	0.355	0.183

$$\begin{array}{ccccccccc}
 & & & & & & & & 0.103 \\
 0.670 & 0.250 & 0.240 & 0.160 & 0.320 & 0.620 & & 0.192 & = & \mathbf{0.297} \\
 0.215 & 0.628 & 0.602 & 0.750 & 0.325 & 0.197 & \mathbf{X} & 0.126 & = & \mathbf{0.531} \\
 0.115 & 0.122 & 0.158 & 0.090 & 0.355 & 0.183 & & 0.340 & = & \mathbf{0.172} \\
 & & & & & & & & & 0.087 \\
 & & & & & & & & & 0.152
 \end{array}$$

Final scores are reflected in above mathematical calculations. Land acquisition gets 0.297, land pooling 0.531 and guided land development 0.172. **Land pooling technique is derived as best performing policy in India.**

A.Land Attributes Indicators: Same as above matrix are prepared for pairwise comparison shown below in tabular form:

Table 3: Final Pair wise Comparison of land attributes

LAND ATTRIBUTES	Weights
Land Legislation	0.245
Land Tenure	0.487
Land Information	0.055
Land Speculation	0.143
Land Registration	0.070

Table 4: Eigenvector for land policies

ULMP	LEGISLATION	TENURE	INFORMATION	SPECULATION	REGISTRATION
LA	0.653	0.640	0.096	0.507	0.525
LP/R	0.132	0.090	0.526	0.201	0.264
GLD	0.215	0.271	0.378	0.292	0.211

Table 5: Matrix calculation for land policies

$$\begin{array}{ccccccccc}
 & & & & & & & & 0.245 \\
 0.653 & 0.640 & 0.096 & 0.507 & 0.525 & & & 0.487 & = & 0.586 \\
 0.132 & 0.090 & 0.526 & 0.201 & 0.264 & & \mathbf{X} & 0.055 & = & 0.152 \\
 0.215 & 0.271 & 0.378 & 0.292 & 0.211 & & & 0.143 & = & 0.262 \\
 & & & & & & & & & 0.070
 \end{array}$$

As per final calculation of pairwise matrix and Eigen vector **Land acquisition** derived as best technique which satisfied almost all issues regarding land.

V. INTERPRETATION OF RESULTS:

[1] In a case of general indicators Land pooling is performing best out of existing major three policies of urban land management in India.

[2] Whereas when we talk about land and its attributes Land acquisition is still the best method of urban land management.

[3] Transparency is evaluated as most important indicators on the performance side, whereas on land attributes side land tenure is an important indicator.

[4] Accountability and profitability is also required to take into account in designing urban land policies.

[5] Land legislation and land speculation are 2nd row performing indicators in urban land management policies.

VI. FUTURE SCOPE OF WORK

- Making common ground for sustainable urban policy for Indian cities.
- Combination of Tools may result in a sustainable urban land policy.

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