Urban Management Programme

The Land Market Assessment

A New Tool for Urban Management

David E. Dowall

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The Urban Management Programme (UMP) represents a major approach by the United Nations family of organizations, together with external support agencies (ESAs), to strengthen the contribution that cities and towns in developing countries make toward economic growth, social development, and the alleviation of poverty. The program seeks to develop and promote appropriate policies and tools for municipal finance and administration, land management, infrastructure management, environmental management, and poverty alleviation. Through a capacity building component, the UMP plans to establish an effective partnership with national, regional, and global networks and ESAs in applied research, dissemination of information, and experiences of best practices and promising options.

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FOREWORD

This paper has been prepared for the Land Management component of the joint UNDP/ UNCHS/World Bank, Urban Management Program (UMP). The UMP represents a major approach by the UN family of organizations, together with external support agencies (ESAs), to strengthen the contribution that cities and towns in developing countries make toward economic growth, social development, and the alleviation of poverty. The program seeks to develop and promote appropriate policies and tools for municipal finance and administration, land management, infrastructure management, and environmental management. Through a capacity building component, the UMP plans to establish an effective partnership with national, regional, and global networks and ESAs in applied research, dissemination of information, and experiences of best practices and promising options.

This report was the first of a series of management tools produced by the UMP land management component. The series covers a wide range of topics, including land information management, land registration, land development policies, standards for land regulation, and urban spatial planning. The information in these reports contributes to the preparation of detailed operational guidelines to help policy makers and technical staff in developing countries carry out appropriate land development policies and techniques, especially at the city and municipal level of government.

Phase 2 of the UMP (1992-96) is concerned with capacity building at both the country and regional levels and with facilitating national and municipal dialogue on policy and program options. It emphasizes a participatory structure that draws on the strengths of developing country experts and expedites the dissemination of that expertise at the local, national, regional, and global levels.

The main goal of the UMP in Phase 2 is to build the capacity for infrastructure management, municipal finance and administration, land management, urban environmental management, and poverty alleviation by means of three interactive processes:

- **City and country consultations.** The UMP brings together national and local authorities, private-sector networks, community representatives, and other actors to discuss specific problems within the UMP's subject areas and to propose reasoned solutions.

- **Regional panels and technical cooperation.** To ensure sustained and effective support for the activities to follow country consultations, the UMP is establishing regional offices, each headed by a regional coordinator, in Kuala Lumpur for the Asia and Pacific region, in Accra for Africa, in Quito for Latin America and the Caribbean, and in Cairo for the Arab States. From 1993 to 1996 the UMP will gradually build up regional panels of urban management expertise for each of the program's five areas of concern, which will provide the structure needed to institutionalize the UMP's capacity-building objective over the long term. Developing countries will be able to draw on this pool of expertise for technical advice on a sustained basis.

ABSTRACT

Over the next 15 to 20 years, the urban areas of developing countries are expected to double in size. The rate at which urbanization is proceeding and pushing up the demand for residential, industrial, commercial, and community land has no precedent even in the history of developed countries. Indeed, land is the essential ingredient in this process, as in all urban growth. The problem for most developing countries is not a shortage of developable land, but the ineffective and often outdated mechanisms they use to ensure an adequate supply of suitable land for urban growth.

But it is no easy matter to develop land policies that would address this problem, particularly because of the complex role that land plays in society—not only as an avenue of development, but also as a commercial good and a natural birthright. Consequently, every land decision is surrounded by an array of institutional, administrative, technical, financial, cultural, environmental, and political issues.

Despite the complexities of land development, its potential benefits are enormous. These may be measured by the lower cost of industrial and commercial development, higher standards of living for residents, and the more efficient provision of urban services, not to mention the more intangible benefits, such as individual peace of mind, cultural satisfaction, and social stability. Therefore, it is important for developing countries to understand their land issues and learn how to deal with them so that these complexities can be overcome.

This report is part of a planned series on land issues being undertaken jointly by UNCHS (Habitat) and the World Bank. The series will cover a wide range of topics, including land information management, land registration, land development policies, standards for land regulation, and urban spatial planning. The information in these reports will be used to prepare detailed operational guidelines to help policymakers and technical staff in developing countries carry out appropriate land development policies and techniques, especially at the city and municipal level of government.

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EXECUTIVE SUMMARY

i. Under the mounting pressures of urban development, cities of the developing world are in vital need of accurate and systematic information about their land markets. Such information is essential to a host of rational economic decisions in both public and private programs. Without it, cities are unable to plan and develop housing and residential plots or the urban infrastructure needed to cope with their fast-growing populations. A tool that has been developed to provide such information is the land market assessment (LMA).

LMA Objectives and Procedures

ii. The land market assessment provides accurate and up-to-date data on land prices, the supply of serviced land, and present and projected land projects. In other words, it provides a concrete foundation for defining appropriate strategies for improving land market performance. LMAs can be used to support four broad activities: 1) governmental planning and decisionmaking, 2) the evaluation of government policies and actions, 3) private sector investment and development decisions, and 4) the structuring of land-based taxation systems.

iii. Land management assessments are carried out by a team of professionals that usually includes a land economist familiar with market survey techniques; a land planner experienced in interpreting aerial photographic and satellite images; a statistician with experience in computing and data base management; data analysts for coding, data entry, and fieldwork; a draftsperson; and a group of surveyors. A computer system is used to develop the data base and conduct statistical analyses.

iv. The time required to prepare a land market assessment depends on the size of the city, the level of detail of analysis, and the number of professional staff assigned to the project. If the city is starting from scratch, it will take approximately one to two years to complete a land market assessment, although most of the basic data would have been collected somewhat earlier.

v. The first step in a land and housing market assessment is to review available reports and data sources that have been compiled by public and private agencies on land and housing conditions in the metropolitan area. In addition, meetings will be held with government officials and private real estate developers, brokers, and bankers. These preliminary efforts will yield the information needed to define the size and shape of the study area, the types of data to be collected and analyzed, and the specific policy questions to be addressed.

vi. Next, changes in housing stock or land use are tabulated from aerial photographs and satellite images. Housing types, including both informal and formal housing, are then tabulated in detail, differentiating slums and squatter settlements, land subdivisions, formal private housing developments, and public housing projects. Nonresidential uses, including industrial areas, commercial districts, and institutional uses are also recorded.

vii. Detailed information about the price and characteristics of new housing units offered in the market is then obtained to establish the current supply of housing on the market, the affordability of the current supply of housing relative to current household incomes in the metropolitan area,

and the types and locations of units selling most quickly. Households can be surveyed to obtain even more refined details.

viii. The next step is to disseminate the information obtained from the assessment. This can be accomplished through seminars, reports, and briefings to public and private sector professionals. The information will be of particular concern to officials in local, regional, and national governments who are responsible for urban land development and planning, programming and development of housing and residential plots, and the development and financing of urban infrastructure. It will also be of interest to housing and commercial developers, bankers lending on urban development projects, professional planners and advisers working for international donor agencies, and researchers working on land and shelter issues in developing countries.

Application of LMAs

ix. The land price data base developed by the LMA can be used to gauge the impact of government policies, investments, and actions. Such assessments fall into two types: ex post measurements of the effects of local public actions, and predictions of land market impacts resulting from future government actions. The ex post method in turn can be divided into measurements that employ econometric models and those that use case study comparisons to assess the effects of public investments. The econometric approach relies on regression models to isolate the net impact of a project on land values. Methods for estimating the effects are based on either time-series or cross-sectional data. The time-series method begins by defining the area from which historical land value data is collected. Usually, the analyst identifies some area in which land parcels are assumed to have benefited or been affected by a project. In the case study comparison, two areas are selected for analysis. One is located adjacent to the project and the other is a "control" case distant from the project, but similar in most other respects.

x. It is considerably more difficult to predict the likely impacts of public actions on land values. Two approaches are suggested, both of which require substantial information about land markets. The first method applies the estimates of past impact assessments to future projects or regulations. Although crude, this approach provides planners and finance specialists with some estimates. The second approach, which applies only to land use and development regulations, estimates the potential impact of a change in zoning or building controls on land values.

xi. LMA information is also used in taxation and fiscal planning. Many central governments, hard-pressed to fund the construction of infrastructure to support land development, are beginning to levy taxes, fees, and user charges on property owners. But to efficiently impose these charges it is necessary to measure the costs and benefits of infrastructure projects—particularly changes in land values.

xii. LMA information also has many applications in private sector development. In the case of residential development, most developers attempt to estimate the demand for housing units and compare it with supply. The land market assessment of the location and characteristics of projects can be used by developers to gauge the current level of the supply of projects by geographic area.

Private developers as well as public developers can then compare then current level of supply with demand to determine whether additional projects are warranted.

xiii. In sum, the land an dhousing market assessment is an essential first step toward making local land and housing markets more efficient. The information base generated by the assessment can be used to gauge market performance, identify future needs for infrastructure, assess housing affordability and assess the impacts of public policies and actions.

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BOXES

MAPS

FIGURE

I. THE URBAN LAND CRISIS

1.1 Cities throughout the developing world are facing serious challenges as they attempt to cope with unprecedented population growth. In the struggle to respond to development pressures, their local institutions, both public and private, are being overwhelmed by a multitude of concerns: Will there be enough land to support urban development? Do all income groups have access to land for housing, commercial, and industrial activities? Is infrastructure expanding fast enough to support urban development, and are services being deployed in areas where needs are the greatest? How can the government finance the construction of critical infrastructure? Is the land market operating efficiently? How can the efficiency of the land market be increased? Will the prevailing patterns of population and housing density continue into the future, or are there alternatives to urban development that require less land? How can agricultural lands surrounding cities be preserved without driving the price of land beyond the reach of low- and middle-income households? Should the government attempt to aggressively control land development?

1.2 Population and economic growth does not take place in thin air. It requires land, and lots of it. The rate of land conversion to urban use for Asian cities, for example, is enormous (see Table 1.1). In Bangkok between 1974 and 1984, the rate was 32 square kilometers of agricultural land per year (Dowall, 1989a); in Karachi, 24 square kilometers per year (Dowall, 1989b); and in Bangalore, a much smaller city, about 13 square kilometers per year (Srinivas, 1989). Even in remote Kathmandu, the pace of land conversion was so rapid that the residential land area of the city doubled between 1971 and 1981 (Doebele, 1987).

1.3 Against the backdrop of these growth trends, policymakers are beginning to recognize that land-use policy—including infrastructure development, shelter provision, and land-use and environmental planning—is an important facet of national economic development planning (Menezes, 1988). Urban land-use policy is no longer a luxury best left to wealthy nations. Developing countries are experiencing urban growth on a massive scale that calls for bold action from both the public and private sector. Policymakers and private developers need to work together to solve land development problems.

Table 1–1. Annual urban land conversion, selected cities

City	Hectares	Date
Ahmadabad	565	1980
Bangalore	1,311	1983–2001
Bangkok	3,200	1974–1984
Jakarta	2,300	1979
Karachi	2,400	1971–1985
Bogota	2,325	1981
Mexico City	4,826	1970

Sources: Doebele (1987), Dowall (1989a, b), and Srinivas (1989)

1.4 Urban land problems are too complex and wide ranging to classify neatly, but they may be divided into five broad categories: 1) lack of enough land at the right price and in the right location; 2) high cost and low affordability of land and housing; 3) ineffective government programs and actions in the area of urban development 4) private sector resistance to government land regulations; and 5) environmental resource constraints to land development.

Not Enough Land in the Right Location at the Right Price

1.5 The urban land market operates to allocate land to buyers. It does so through adjustments to prices, the quantities supplied, and the quantities demanded. In many countries, policymakers are concerned that the urban land markets are not operating efficiently and that land is in short supply, land prices are high, or combinations of both.

1.6 One obstacle to the development of sound urban land policies is the fact that land markets are poorly understood, which is due in part to their complexity and in part to the lack of sufficient performance data. This lack of information often stands in the way of rational economic behavior and leads to inappropriate government policies and investment programs (see for example, Mayo, Malpezzi, and Gross, 1986).

1.7 Unlike other markets, where supply and demand determine the dynamics of market operation, land markets are not driven by perfectly competitive forces. Land is not homogeneous; each parcel is unique, having a particular set of locational, physical, and neighborhood characteristics. Actors in the land market are diverse and have divergent objectives, expectations, and strategies. In some cases, only a few buyers and sellers may participate in particular land markets, and an individual land seller or buyer can greatly influence market outcomes. When there are barriers to entry—as, for example, when all land is owned by the state or by a tribe—less than normal profits and rents can be earned. In addition, land market attributes, such as ease of entry and exit, are closely controlled by local and national government policies and by public decisions about infrastructure investment, which is not the case in other markets.

1.8 A fundamental difference between land and other commodities is that land is used exclusively for producing some other product. The demand for land is therefore derived from the demand for the product or service produced on the land. The demand for residential land is derived from the demand for housing; the demand for housing, in turn, is determined by demographic and economic factors such as the rate and level of household formation, household income, savings, and interest rates. The demand for land is also affected by the number of people wanting to hold land as an investment. These factors, also apply to the demand for commercial and industrial land.

1.9 On the supply side, the quantity and price of land depends on the spatial pattern of infrastructure, the physical developability of land, the willingness of current landowners to sell, and government-imposed limitations on how land may be used. The level of infrastructure—such as roads, municipal water, and sewage treatment trunk lines—by and large determines whether land can be developed (although this is not the case in informal settlements), to what extent, and in what physical direction. In rapidly growing cities, the infrastructure capacity is frequently inadequate and therefore impedes land development and helps inflate land prices.

Box 1. The Kathmandu Valley

The Kathmandu Valley provides a good example of how both natural topography and land development controls limit the available supply of land for future urban expansion. The Kathmandu Valley, nestled in the Himalayas, is one of the most agriculturally productive areas in Nepal. In 1981 it produced about 97 percent of the country's food grain. Valuable agricultural land in the valley is being converted to urban uses as the city of Kathmandu expands. At current urbanization rates, all Class I and II farmlands will be converted to urban use by 2020, and Nepal will become dependent on foreign imports of food. In response to these ominous trends, the government of Nepal recently embarked on a strict program to limit urban development in agricultural areas (PADCO, 1986).

1.10 A frequently mentioned but rarely proven allegation about the cause of land scarcity is speculation and land hoarding. Many public officials claim that land is purchased by speculators and held off the market in anticipation of substantial price appreciation. In many countries with high inflation, land is routinely viewed as being an excellent store of value (Walters, 1983), especially if there are no alternative financial assets. The Bangkok land market is a case in point: in 1990 the price of suburban land there increased by more than 90 percent, making it an excellent investment.

1.11 Topography can also limit land supply. Many of the major cities of the developing world are located in areas surrounded by steep slopes, marshes, or water. In other cases, the systems of rural land tenure severely limit urban development in fringe areas. The Kathmandu Valley stands as a vivid example of how topography and government regulations limit land supply (see Box 1).

1.12 Zoning and other government land-use controls such as greenbelt policies can also affect land markets. Zoning, by limiting building density or the uses allowed in certain areas, limits the effective supply of buildable land. And although establishing a greenbelt may offer certain public amenities, policymakers must recognize that this can create an adverse impact on urban land supply and prices (Dowall, 1984).

1.13 In the absence of local controls over the use of land, the market operates to allocate land to users on the basis of price. Those potential users capable of paying the highest price for a site will occupy it.

1.14 Competition among land users sets prices and determines the pattern of land-use activities in an urban area. As the pressure for urban development increases, rural and agricultural land on the edges of cities is developed. The process of converting farmland to urban uses is triggered when the demand for peripheral land pushes the price bids beyond the value of agricultural land. As Brown and Roberts (1978) have pointed out, the process of agricultural land conversion is complex and, contrary to popular belief, involves many separate land markets stretching out from the current limit of development to areas that will not be converted to urban uses for at least twenty years.

1.15 Another, much different process of land conversion occurs in built-up areas. Competition in urban land markets often causes land patterns to shift from one use to another. If a particular activity is expanding and needs more space, land already in another use may be converted to the new activity. As long as there is no restriction on such conversions, land uses in urban areas can flexibly

Box 2. Redevelopment Problems in China

Redevelopment projects in Guangzhou and Tianjin illustrate the financial difficulties of carrying out housing redevelopment projects and the resulting bias of real estate development corporations against built-up urban areas.

Two structural problems conspire against redevelopment projects in China: ironclad property rights of the existing residents and limitations on development density. In most cases (Beijing is the exception, as explained below), the rights of existing residents are protected to the extent that they must be provided with replacement units of at least the same size and be allowed to pay the same rents after redevelopment as before. It is not surprising that in Guangzhou and Tianjin more than 95 percent of the prior residents elect to return to the site.

In virtually all cases, the rents are so low that they do not even cover maintenance costs, let alone capital cost recovery. In such cases, the replacement units generate no cash flow. Thus any redevelopment project stands or falls on its ability to provide additional marketable housing units that can be sold at high enough prices to carry the entire cost of the redevelopment project. It might be possible to build profitable redevelopment projects if the new project could be extremely dense, but unfortunately planning standards and the general notion that "densities are too high" in the central cities usually makes it impossible for FARs to be increased to Hong Kong or Seoul levels. The net effect of these density constraints is that most redevelopment projects can build four units for every three replaced. This means that the one marketable unit must finance the cost of the three replacement units. This is extremely difficult, if not impossible.

In Guangzhou, land acquisition costs in old developed areas are approximately 33 percent higher than in "greenfield" areas. In Tianjin, the differences are greater since the prior residents usually receive even more usable space than they previously occupied.

In contrast, the Beijing Municipality recognizes the high costs of redevelopment, especially if all prior residents are provided with replacement units on site. Accordingly, it has developed a promising lower-cost approach to redevelopment. The municipality's new procedure is based on a series of incentives to encourage prior redevelopment area residents to move to new suburban housing estates. So far, the approach is working—between 70 and 80 percent of the prior residents elect to return to the site. This reduction in required replacement housing improves the financial feasibility of redevelopment projects by increasing the portion of marketable units.

respond to shifting demands. Virtually all growing cities with market economies are going through this transformation. Redeveloping older areas is more difficult for cities in centrally planned economies, such as China, mainly because of the nature of property rights, the structure of the institutions that oversee real estate development, and the way projects are financed (see Box 2).

1.16 Since it takes time for any land market to adjust, most of the short-term shifts in demand or supply result in price changes. Depending on the price elasticity of demand for land, increases in the price of land will reduce the demand for it. In the United States, for example, the price elasticity of demand for residential lots is inelastic, meaning that increases in demand will push up land prices if supply is fixed (Witte, 1979; Sirmans and Redman, 1979). This suggests that the inflationary effects of poor land titling and registration, lagging infrastructure deployment, government regulations, and physical constraints that limit the supply of land can be considerable. In areas with high demand and a limited choice of housing, price-inelastic demand can inflate land prices to a greater degree than in softer markets or those offering a wider set of alternative housing locations.

1.17 The efficiency and equity of urban land conversion depend on a variety of factors, such as land tenure, land records, government regulations, the availability of infrastructure, financing

sources, land prices, and the level of sophistication of private and public land development institutions. Take the case of Karachi and Bangkok. Karachi is experiencing an acute shortage of land because the Karachi Development Authority (KDA) grossly underprices residential plots and thus limits its financial capacity to fund infrastructure development.

1.18 The low pricing also increases the speculative demand for plots, thwarting the access of low-income households to plots. In the case of Bangkok, the land market is working extremely well, quickly responding to demand pressures. The success of the Bangkok land market is due largely to the absence of strict planning and development controls and an aggressive private sector.

High Cost and Low Affordability of Land and Housing

1.19 The causes of rapidly escalating land and housing prices are manifold, but they essentially stem from an excess demand for land and housing relative to supply. In Karachi, for example, where the land development, pricing, and allocation policies of the government have severely constrained the supply of land for housing, the prices of housing increased by an average of 30 percent per year between 1985 and 1987. The prices of large residential plots increased by 22 percent per year over the same period (Dowall, 1989b). In real terms, after adjusting for price inflation, land prices have increased by more than 11 percent per year.

1.20 In most cities of developing countries, policymakers are greatly concerned with rising land and housing prices. In Seoul, disenfranchised low-and moderate-income groups have been demonstrating for political action to ease housing pressures. In Thailand, Indonesia, India, and Malaysia, land and housing price inflation and housing affordability have become a critical policy issue.

Seoul

1.21 The precipitous increase in land and housing prices in Seoul is challenging the stability of the Roh government. Land prices in metropolitan Seoul are increasing at an annual rate of more than 25 percent. According to a recent study by the Korean Research Institute for Human Settlements, the annual increase in land values in 1988 (88 trillion won) exceeded the annual wage income for all of the country's workers (Clifford, 1989).

1.22 The rapid increase in land costs is due to the combined impact of continued massive migration to the capital and a series of governmental policies regarding property taxation, housing development, and planning. In the 1980s, in a move to decentralize economic activities out of Seoul, the government curtailed the suburban development of new towns, thereby limiting the opportunities for large-scale residential development. Much of the blame for rapid land inflation has been put on speculators. Current capital gains and property taxation rules limit capital gains taxes until the time of sale, and annual property taxes are based on assessed values, which represent about 10 percent of market values. Both tax practices encourage the withholding of land from the market. A final culprit is the government's well-intentioned program of limiting the prices of new apartments to a low US$597 per square meter. These price controls, together with tax polices, make it inexpensive to hold land and therefore have encouraged developers to "warehouse" their land rather than build new apartments (Clifford, 1989).