

AGENCY FOR INTERNATIONAL DEVELOPMENT
PPC/CDIE/DI REPORT PROCESSING FORM

PN-ARI-648/1000
72613

ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number

2. Contract/Grant Number

3. Publication Date

Jan. 1991

4. Document Title/Translated Title

Constraints Affecting The Efficiency of Urban Land
Markets in India

5. Author(s)

1.
2.
3.

6. Contributing Organization(s)

Padco, inc.

7. Pagination

50 pp.

8. Report Number

9. Sponsoring A.I.D. Office

USAID New Delhi, India + RTUD0/ASIA

10. Abstract (optional - 250 word limit)

See attached

11. Subject Keywords (optional)

1. Land Markets	4.
2. India	5.
3.	6.

12. Supplementary Notes

13. Submitting Official

Larry Birch APR/4

14. Telephone Number

(66) - 2556

15. Today's Date

5/1/91

16. DOCID

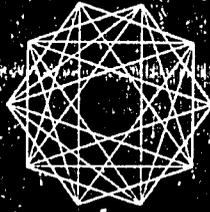
17. Document Disposition

DOCRD [] INV [] DUPLICATE []

ABSTRACT

In India, land development takes place in a policy context of government control and regulation. The National Commission on Urbanization (NCU) of 1988 strongly criticized government policies for having failed to ensure an adequate supply of urban land. Although the NCU report states in several places that the land market should be made more free, the recommendations for accomplishing this are limited to the reduction of burdensome regulations. The NCU stops short of explicitly advocating a liberalization of policy to allow greater use of price signals or a larger role for private sector developers.

This report reviews several major constraints on the efficient operation of urban land markets and urban land delivery. Primary emphasis is given to three constraints: the Urban Land Ceiling and Regulation Act, land development regulations and land information systems.



P A D C O

PLANNING AND DEVELOPMENT COLLABORATIVE INTERNATIONAL, INC.

PN-INDI-6117

**CONSTRAINTS AFFECTING THE
EFFICIENCY OF URBAN LAND MARKETS
IN INDIA**

January 1991

PROVIDES GOVERNMENTS AND PRIVATE CLIENTS IN DEVELOPING COUNTRIES WITH SERVICES IN PLANNING, MANAGEMENT, FINANCE, ECONOMICS AND TRAINING FOR URBAN, RURAL AND REGIONAL DEVELOPMENT

1

6536

**CONSTRAINTS AFFECTING THE
EFFICIENCY OF URBAN LAND MARKETS
IN INDIA**

FINAL REPORT

Prepared for
**USAID MISSION
NEW DELHI, INDIA**
and
**USAID RHUDO/ASIA
BANGKOK, THAILAND**

Prepared by
**PADCO, Inc.
1012 N Street, NW
Washington, DC 20001**

January 1991

2

TABLE OF CONTENTS

	Page
LIST OF ACRONYMS	
EXECUTIVE SUMMARY	
1.0 INTRODUCTION	1
2.0 POLICY CONTEXT	3
3.0 URBAN LAND CEILING AND REGULATION ACT	7
3.1 Impact of ULCRA on Land Delivery	7
3.2 Amendments to ULCRA	10
3.3 Comparison with Cities Not Under ULCRA	11
4.0 LAND REGULATIONS AND STANDARDS	13
4.1 Introduction	13
4.2 Administrative Procedures	13
4.3 Planning Controls	15
4.4 Land Use Standards	16
5.0 LAND INFORMATION SYSTEMS	19
5.1 Types of Land Information Required	19
5.2 Prime Users of Land Information	20
5.3 Existing Sources of Land Information	22
5.3.1 How Improved Land Information Management (LIM) Would Facilitate Efficient Functioning of Urban Land Markets	25
5.4 Deficiencies of Available Land Information	26
5.4.1 Common Spatial Referencing	26
5.4.2 Land Title Records	27
5.4.3 Land Valuation	28
5.4.4 Actual and Permitted Land Uses	28
5.5 Current Activity in Land Information Management Relevant to Urban Land Markets	28
5.6 Prior Conditions and Constraints for a Local Land Information System	30
5.7 Outline Strategy for Local LIS	30
6.0 OTHER CONSTRAINTS AND ISSUES	33
6.1 Availability of Infrastructure	33
6.2 Skills and Manpower	33
6.3 Negative Experiences with Sites and Services	33
6.4 Management of Government-Owned Land	34
6.5 Environmental Regulations	34
6.6 Land Transfer Taxes and Fees	35
7.0 OVERVIEW AND RANKING OF CONSTRAINTS	37

TABLES AND FIGURES

Table 1

Progress of Implementation of the Urban Land (Ceiling and Regulation) Act 1976 in the States and Union Territories, Up to May 30, 1986	8
---	---

Table 2

Users of Land Information	21
---------------------------------	----

Figure 1

Map	24
-----------	----

ANNEX 1

Cities Subject to Urban Land Ceiling and Regulation Act	41
---	----

ANNEX 2

Persons Interviewed for this Report	43
---	----

REFERENCES	47
------------------	----

u

LIST OF ACRONYMS

FAR	Floor Area Ratio
GOI	Government of India
HSMI	Human Settlements Management Institute
HUDCO	Housing and Urban Development Corporation
LIM	Land Information Management
LIS	Land Information Systems
NCU	National Commission on Urbanization
NHB	National Housing Bank
NIC	National Informatics Centre
NIUA	National Institute of Urban Affairs
NRSA	National Remote Sensing Agency
TCPO	Town and Country Planning Organization
ULCRA	Urban Land Ceiling and Regulation Act

EXECUTIVE SUMMARY

This report reviews several major constraints on the efficient operation of urban land markets and urban land delivery. The Scope of Work gives primary emphasis to three constraints: the Urban Land Ceiling and Regulation Act, land development regulations and land information systems. Following a discussion and analysis, the consultants rank the constraints in the order of importance.

POLICY CONTEXT (Section 2.0)

In India, land development takes place in a policy context of government control and regulation. The National Commission on Urbanization (NCU) of 1988 strongly criticized government policies for having failed to ensure an adequate supply of urban land. Although the NCU report states in several places that the land market should be made more free, the recommendations for accomplishing this are limited to the reduction of burdensome regulations. The NCU stops short of explicitly advocating a liberalization of policy to allow greater use of price signals or a larger role for private sector developers.

The NCU report repeatedly states that government intervention in land markets is essential because the low elasticity of the supply of urban land gives rise to hoarding and speculation, which place land out of the reach of lower-income groups. The general perception is that government must intervene to help supply land to the poor.

Suggestions for reforms tend to revolve around changing the intervention and regulation mechanisms, not reducing them. In fact, the current debate on urban land includes the advocacy by some senior people of land rationing, in which households would be allocated land administratively according to need.

There was general agreement that the demand for urban land as an investment is virtually unlimited, making it essential for government to control the supply of land to curb speculation and redistribute land to lower-income groups. The notion that land price inflation may be caused in large part by government policies that restrict the supply of land does not seem to be on the current agenda of government's policy dialogue.

The draft National Housing Policy (May 1990) emphasizes that government should focus its efforts on facilitating the provision of inputs for shelter that households and private entities cannot easily supply. The draft Policy states that government should assume direct responsibility for improving housing conditions for lower-income people and other disadvantaged groups, but makes no explicit references to promoting market mechanisms, nor enhancing the role of the private sector.

2, Executive Summary

URBAN LAND CEILING AND REGULATION ACT (Section 3.0)

The Urban Land Ceiling and Regulation Act (ULCRA) of 1976 has been applied in 70 cities with 1971 populations of 200,000 or more. ULCRA is widely acknowledged to have failed in accomplishing its main objectives which are to: redistribute land, prevent speculation in land, and facilitate the use of urban land for low-income housing. As of 1990, 212,549 ha. had been classified as excess but only 9,946 ha. had been taken over and less than 1,000 ha. used for housing.

The main reasons for this poor record are:

- The low level of compensation set in the Act, which caused much litigation and evasion of the ceilings.
- The relatively liberal granting of exemptions in some States, as well as manipulation of the exemption process and the filing of suits for exemptions based on hardship or public interest.
- Administrative ineffectiveness and inefficiency.
- The fact that much of the "excess" land to be taken over was in small, fragmented pieces, which make it difficult for public agencies to use it for housing.

The above discussion indicates that the ULCRA has not redistributed land nor produced lower-income housing. Many observers believe that ULCRA has helped to foster higher rather than lower land prices in urban areas.

The effect of ULCRA on the supply of urban land for shelter seems to have been mixed:

- ULCRA has made it more difficult to acquire and develop parcels of land larger than the ceiling sizes, but large developers have been able to circumvent ULCRA by manipulation of the administrative process.
- To a certain extent, ULCRA has probably reduced the access of smaller real estate developers and builders to urban land, by increasing land and administrative costs.
- There are indications that a large number of vacant plots in urban areas are unavailable for development because they are under litigation related to ULCRA.
- By restricting the supply of developable land, ULCRA is said to have caused development to "leap-frog" beyond the area of the Act's coverage to locations farther away, resulting in a more inefficient development pattern.
- Implementation of the Act has varied from State to State. Some States granted exemptions liberally, so that much of the land initially reported as "surplus" reverted to the original owners.
- The ULCRA has reduced the supply of land, but its major effect has probably been more to increase the "friction" of bringing land onto the market than to keep land off the market entirely.

Officials interviewed do not interpret ULCRA's failure as an indication that government regulation and intervention in land markets do not work. Rather, reform proposals focus on improving the implementation of ULCRA, not on reducing its scope.

Government officials as well as local experts agree that ULCRA should not and will not be repealed. The draft Housing Policy calls for amending ULCRA "to remove the inhibiting effects of urban land ceiling legislation without diluting its social purpose."

The Ministry of Urban Development is currently considering amendments to ULCRA that would make the Act, as one official put it, more "constructive". The main changes being considered are:

- Deleting most provisions for exemptions, and making any remaining exemptions automatic rather than discretionary.
- Increasing the compensation.
- Allowing landowners to develop their surplus land for lower-income housing directly, with minimum government control (rather than taking over the land and handing it over to public agencies, as is currently required) for a period of five years, after which undeveloped surplus land would be expropriated.
- Imposing a strong vacant land tax, the proceeds of which would be put in a special fund for provision of lower-income housing.

LAND REGULATIONS AND STANDARDS (Section 4.0)

All activities relating to land development take place in an environment of government control and regulation. While the shortcomings of present laws and regulations are recognized, proposals to improve the situation tend to be for modifications to regulations, rather than relaxation or reduction in the regulations themselves. Inefficient administration of development control procedures is the main source of problems:

- The process for development applications often takes 18 to 24 months, with no guaranty of approval.
- Standards are applied in an arbitrary manner in some cases thus creating uncertainty for applicants.
- Since the magnitude of money involved is high, there is the potential for illegal payments to expedite processing.
- In some jurisdictions, there are no procedures that permit a developer to obtain preliminary approval of development plans before assembly and purchase of a site.

Inefficiencies in the development review process affect not only the rate at which serviced land comes onto the market but also the amount of serviced land available. The impact is more on the quality of land being made available, rather than the quantity, since there is substantial informal development taking place outside the review process.

To convert land to urban uses under formal procedures, land use designation must be changed from agriculture to urban. Since this change can have a dramatic impact on land value, it is an activity subject to manipulation and political influence.

Within the boundaries of urban areas, this change of use is accomplished through the master planning process. In areas beyond urban limits, changes are approved on a case-by-case basis by local government agents (Collectors) responsible for land registration.

4, Executive Summary

Inefficient administration in both of these situations results in constraints on the availability of land for urban development.

The private sector is under the same constraints as the public sector in declared urban areas since they must compete for land that has been officially designated for urban use. In areas outside urban boundaries, there are negative impacts on private development caused by lengthy approval procedures and increased risk. The response of private developers, particularly smaller- and medium-sized ones, to these constraints has been to avoid formal reviews and to illegally develop new lands. This is particularly true in outlying districts.

Land use standards also have an impact on the availability of land, particularly for lower-income groups. There is considerable variation in standards since they are adopted at the local level. Compliance with present standards results in shelter solutions that are not affordable to lower-income households.

There is a dual system of standards at present. National financing organizations have established standards for projects targeted to the Economically Weaker Sections that are often in conflict with those of local agencies. While more efficient standards are included in the National Building Code, private developers are usually not permitted to use these standards for their projects.

LAND INFORMATION SYSTEMS (Section 5.0)

The prime users of land information are local officials, planners and decision makers in village, district, and state authorities. Private developers and housing loan agencies require access to much of the same information, while individual landowners need access to specific information about their real estate. Finally, central government has a need for periodic reports to define land policies, improve administrative procedures and draft new legislation.

There are many other organizations that could make use of much of the same information including fire, police, ambulance services, environmental protection, flood prevention, etc. These interests should not be overlooked in maximizing the benefits of investment in land information.

The lack of urban land information is a major cause of ineffective urban administration and of distortions in land prices. Some of the deficiencies of the present situation include:

- **Cadastral surveys are based on local plane rectangular grids for each village or sub-district that do not interconnect properly and introduce unacceptable errors in scale and orientation for larger cities.**
- **Land titles lack current and complete records.**
- **Valuation of agricultural land for tax assessment is required to be undertaken only at thirty-year intervals. The resources necessary to value properties in urban areas at appropriate intervals have not yet been provided.**

- **Master Plans often have not been updated by local development authorities to reflect the dynamic evolution of cities.**

Until recently, awareness of the potential benefits of systematic land information management (LIM) has been almost entirely limited to research and teaching institutes and technical departments of central government. This interest is now being translated into plans for operational trials. Interested parties are to be found in almost every central government ministry, but no government department has been given the responsibility and authority to coordinate LIM activity.

There appears to be a real danger that central government projects will become technology-based and data-driven instead of local, user-driven and functionally-based. As the need for land information is primarily at local and state levels, it will be essential to determine real user needs at these levels and provide training and resources for decentralized implementation of LIM.

The implementation of a locally-based land information system should seek to strengthen the institutional framework of local authorities responsible for land administration by carrying out indepth studies of user needs, by identifying and defining the administrative functions that have to be performed, and by using the introduction of modest computer technology as a facilitator of greater administrative efficiency.

OTHER CONSTRAINTS AND ISSUES (Source 6.0)

In carrying out this assistance, the team identified other constraints and issues that can be summarized as follows:

- ***Availability of Infrastructure.*** The lack of main infrastructure is a very important constraint on urban land delivery. Only the large development authorities and a handful of large real estate companies have the ability to mobilize resources for main infrastructure works.
- ***Skills and Manpower.*** There is a general deficiency of skills and trained manpower at the state and local level in various areas related to land management and regulation. This problem hampers all government planning, control, and development efforts.
- ***Negative Experiences with Sites and Services.*** After a few negative experiences in some states, the sites and services approach has fallen into disfavor and has been largely abandoned as a viable lower-cost shelter solution by public sector agencies.
- ***Management of Government-Owned Land.*** There is no mechanism available to bring prime, under-utilized tracts of public land in central city areas into more productive use.
- ***Environmental Regulations.*** There are no environmental standards nor controls applied to urban development at the national level and in the states visited by the study team.

6, Executive Summary

OVERVIEW AND RANKING OF CONSTRAINTS (Section 7.0)

The constraints on efficient functioning of urban land markets may be ranked as follows:

Very Important

1. *Cumbersome land regulation procedures and rigid standards.* The relationship between government and private developers is largely adversarial. Planning controls retard the delivery of land for urban use through delays in the master planning process and lengthy reviews for conversion of land to urban use.
2. *Non-facilitation of private land developers.* Individual owner-builders and petty entrepreneurs dominate the urban land development market at present, especially for residential development. A policy environment favorable to the operation of private sector land development companies does not exist.
3. *Lack of financial resources for main infrastructure to service land.* A new program within HUDCO makes financing available to local bodies for urban infrastructure. This financing window has made a contribution to improving the supply of urban infrastructure for new developments. In addition to this, efforts are needed to improve municipal revenue mobilization for infrastructure.

Medium to High Importance

4. *Urban Land Ceiling and Regulation Act.* ULCRA is not at the top of the list because landowners and developers have found many ways to circumvent its provisions.

Medium Importance

5. *Land Acquisition Act and Procedures.* Making public land acquisition more efficient, especially by providing adequate and timely compensation, would help reduce distortions in the land market caused by owners trying to evade expropriation and would increase the rate at which land is supplied for low-income housing.
6. *Inefficient management of government-owned land.* Where significant quantities of government land are tied up in obsolete and inefficient uses, the utilization of these for lower-income housing might reduce demand pressure on the overall land supply.

Low to Medium Importance

7. *Inadequate land information and registration systems.* The findings of this study indicate that the basic information needed by land sellers and buyers, real estate developers, and government land development agencies (i.e., prices, ownership and regulations) is available, *albeit* not easily.

1.0 INTRODUCTION

This report was prepared for the USAID Mission in India and the USAID Regional Housing and Urban Development Office in Bangkok. The field work and report preparation were carried out by a consultant team consisting of Alan Carroll, Team Leader and Urban Land Specialist, Robert Olsen, Urban Planning Specialist, and John Leatherdale, Land Information Specialist. Field work was carried out from late August to mid-September 1990. The team was based in Delhi. Carroll spent three weeks in India including two days each in Ahmedabad and Lucknow. Olsen and Leatherdale both spent two weeks in India and visited Ahmedabad and Lucknow for one day each. Leatherdale also made a two-day trip to Dhera Dun to visit the Survey of India and the Indian Institute of Remote Sensing.

As per the Scope of Work (SOW), this report reviews several major constraints on the efficient operation of the urban land market and urban land delivery. An efficient land market is one in which land not needed for direct public uses (e.g., roads, parks, public schools) is allocated and developed largely by the private sector in response to market forces and price signals. While government intervention in urban land markets is needed to fulfill certain objectives, government control over the allocation, privacy, and utilization of land also creates serious inefficiencies, e.g., restricted supply of residential land, higher land prices, higher locational costs (such as travel distance), and higher costs of servicing.

The Scope of Work gives primary emphasis to three constraints: the Urban Land Ceiling and Regulation Act, land information systems, and land development regulations. The consultants were also asked to identify other constraints and to rank the constraints in order of importance. The SOW explicitly excludes financial constraints. In this report, financial constraints are placed in context but are not analyzed in detail.

The SOW requested that quantitative evidence of the impacts of constraints be presented as far as possible. The consultant team found that this type of quantitative information is not readily obtainable. Compiling it would require time and effort far beyond that available for this report.

The team reviewed a number of previous studies of the impacts of the various land market constraints. The approach taken in this report is to note very briefly the key points of previous studies and to concentrate on assessing the most recent trends based on interviews and newly-gathered documents.

This report is one of several commissioned by USAID on land development in India. One already prepared deals with formal serviced land delivery in Delhi. Two others being prepared simultaneously to this one cover serviced land delivery processes in several other cities and public-private partnerships.

The team thanks all the persons interviewed (see Annex 2) for providing valuable information. Special thanks are due to Charles J. Billand and Nabaroon Bhattacharjee, of USAID/India; Dinesh Mehta, of the School of Planning in Ahmedabad; and S.K. Garg, of ELDECO Housing & Finance Ltd., Lucknow, for helping to clarify complex issues and arranging many useful interviews.

2.0 POLICY CONTEXT

The National Commission on Urbanization of 1988 strongly criticized government policies for having failed to ensure an adequate supply of urban land. It is worth quoting the NCU report at length to show how severe the NCU judged the urban land problem to be. Here are some excerpts from Vol.I, Chapter 1, "Issues and Strategies" (p.8):

Possibly the most disastrous feature of the past four decades of urbanization in India has been our tragic failure to anticipate the rising demand for urban land, and thus be able to ensure an adequate supply at affordable prices. In this the worst sufferers have, of course, been the urban poor.

The growth rate of India's urban population has never been matched by appropriate interventions to ensure the production of urban land at the right time, place, and price.

The results have been catastrophic. Land has become an extremely scarce and expensive commodity, with a fatal mismatch between people's incomes and land prices. Households' savings have had to be diverted from other critical uses to meet the most modest shelter needs. Within the urban sector itself, household funds which could have flowed into paying for a range of urban services, such as water, sewerage, and transportation, have been pre-empted by grossly overpriced land. As a result, the provision of these services has itself greatly suffered.

The crippling shortage of land forced many of our citizens, both sellers and buyers, into a disrespect for the law. Black money has proliferated, corruption has become rife, and moral values have been severely eroded.

Inevitably, the poor have been affected most of all. With legal, institutionalized, and simplified access to urban land at affordable prices effectively denied to them, they have had to take recourse to the only option available—illegal occupation of land.

Chapter 6 of the NCU report ("Land as a Resource", Vol.II, 6.4.2) goes on to say:

As an offshoot of the development of a land market which is highly distorted, there is the ever-increasing encroachment on public land and the mushrooming of unserviced, unplanned, unauthorized colonies. This picture is universal to all urban centres of any reasonable size in India. Even where a master plan exists and there is a policy to allot land to the poor, so little effort has actually been made in this behalf (sic) that the poor continue to encroach and the middle class to build unauthorizedly. So long as government fails to ensure easy and affordable access to land and so long as the policy is to regularize that which is illegal, every city planning effort will fail. The message to the citizen is loud and clear: criminality pays because the legal option does not exist. It is in the large-scale criminalization of the average town dweller in the matter of land that we have a major urban crisis and a situation which bids fair to neutralize all attempts at rational city planning and management.

The NCU report made numerous recommendations for improving the management and delivery of urban land. Although only some of these have been acted upon—i.e., legalization of squatter areas in some cities, revision of building and land development standards in some states, and creation of a loan fund for urban infrastructure (within HUDCO)—it is worth reviewing them briefly to indicate the breadth and depth of issues and suggestions covered.

- **Demand estimation:** The annual demand in each city for land for various uses should be estimated.

- **Provision of services and job opportunities:** Government must intervene to extend municipal infrastructure for the provision of serviced land and to provide access to jobs in newly urbanized areas.
- **Vacant land tax:** Vacant and under-utilized urban land should be taxed heavily to curb speculation and force its productive use.
- **Mandatory development of vacant land:** Legislative mechanisms should be used to compel the development of land for special purposes such as low and middle income housing, with application not only to private owners but also to government owned land.
- **Redevelopment of land with obsolete uses:** Large tracts of land in prime urban locations are locked up in obsolete and uneconomic uses, which often include government-owned facilities. These lands should be released for redevelopment.
- **Illegal occupation:** Unauthorized and illegal occupation of land should be approached with "humanity and understanding". Slum upgrading programs should be expanded and accelerated.
- **Regulatory system:** "The Commission feels that urban India is over-regulated, with laws and rules which inhibit enterprise rather than encourage it." "The laws and regulations pertaining to property development, sale, and mortgage need to be modified to remove cumbersome and dilatory procedures, simplify transactions, and encourage an active land market."
- **Data base:** Land records systems should be modernized, including maps and records of ownership rights.
- **Design standards:** Building and land development regulations need to be revised to make legally-provided shelter affordable in the present economic context.
- **Sites and services:** Sites and services should be viewed "not as a way of helping the poor alone but as a way of increasing the supply of serviced land to the entire cross-section of society". Sites and services programs should be extended and encouraged in the joint (public-private) and private sectors.

In the section on "Financing Urbanization" of Chapter 1, the NCU made the following recommendations related to land development: property taxation should be improved to generate more resources for urban infrastructure; betterment taxes should be used; charges for services should be based on full cost recovery; and new institutions should be created to finance urban development, namely a National Metropolitan Development Bank and a National Urban Infrastructure Development Bank.

The NCU report criticizes the practice of large-scale government land acquisition as in Delhi because (1) the distribution of land is not equitable, (2) it is conducive to wasteful use of land in favor of "influential sections of society", (3) monopolistic control of land tends to promote land price inflation rather than reduce it, and (4) management and administrative limitations cause land to be released too slowly in relation to demand. (Vol.II, 11.6.8)

Although the NCU report states in several places that the land market should be made more free, the recommendations for accomplishing this are limited to the reduction of burdensome regulations.

The NCU stops short of explicitly advocating a liberalization of policy to allow greater use of price signals or a larger role for private sector developers.

The NCU report repeatedly states that government intervention in the land market is essential because the low elasticity of the supply of urban land gives rise to hoarding and speculation, which place land out of reach of lower-income groups. Government must intervene to help supply land to the poor, either through fiscal measures or direct acquisition and allocation.

None of the documents reviewed or persons interviewed for this report—except private developers—advocated a significant liberalization of policy towards the use of market mechanisms for pricing or allocating land. The suggestions for reforms tend to revolve around changing the intervention and regulation mechanisms, not reducing them. In fact, the current debate on urban land includes serious advocacy by some senior people of land rationing, in which households would be allocated land administratively according to need.¹ The basic argument is as follows: Previous intervention mechanisms for delivering land to the poor² have failed for various reasons. This has resulted in pressure to rely more on the private sector and market forces.³ However, market mechanisms cannot assure a supply of land to the poor because urban land prices will always remain too high for the poor to afford, except in undesirable locations. It is unrealistic to expect that satiating the demand for urban land for high- and middle-income housing as well as speculation through market mechanisms would solve the problem, because there is not enough urban land available to satiate these demands. Therefore, a government-administered system of land rationing is needed.

Although few "opinion leaders" advocate land rationing as the best solution, most agree with the argument that the demand for urban land as an investment is virtually

¹See, for example, Mulkh Raj and Kiran Wadhva, "The Distributional Aspects of Urban Land", Paper presented at the Indo-French Seminar on Urban Planning and Housing, HUDCO, New Delhi, 18 January 1990.

²Slum clearance and improvement; slum upgradation; provision of secure tenure; sites and services; land banking and allocation; land readjustment; reservation of land in housing schemes for the poor; and ULCRA.

³Debate on the participation of private developers in land development is currently taking place at all levels of the Indian government. At least within central government circles, there now exists a widely-held view that activities of legitimate private developers should be encouraged. While abating at the center, involvement of the private developer in the provision of housing and serviced land remains a hot issue at the state and local level, where ultimate responsibility for planning and implementation decisions on land development still resides. Clearly, there is yet no unanimity of opinion at this level regarding the benefits to be gained from private sector involvement in the provision of shelter.

unlimited, making it essential for government to control the supply of land to curb speculation and redistribute land to lower-income groups. The notion that land price inflation may be caused in large part by government policies that restrict the supply of land and channel private capital into land does not seem to be taken very seriously.

The draft National Housing Policy (May 1990) emphasizes that government should focus its efforts on facilitating the provision of inputs for shelter that households and private entities cannot easily supply, namely infrastructure, financing, and large-scale land assembly.

The draft Housing Policy states that government should assume direct responsibility for improving housing conditions for lower-income people and other disadvantaged groups.

Regarding land, the draft Housing Policy makes the following key points:

- Government should intervene to prevent the concentration of land ownership, to curb speculation and profiteering in land, and to make land available to the poor.
- The Urban Land Ceiling and Regulation Act (ULCRA) should be amended to remove its inhibiting effects without diluting its social purpose.
- A vacant land tax should be imposed at the local level, with the proceeds used for a Shelter Fund.
- Urban lands being kept by government policy in uneconomic or inefficient uses should be recycled.
- Land development standards and regulations should be revised to reduce shelter cost.
- Improved land information and registration systems should be introduced in urban areas.
- A specialized institution should be set up to finance urban infrastructure to increase the supply of serviced land.
- The Land Acquisition Act should be amended to enable public agencies to take possession speedily and to assure prompt payment of proper compensation to owners.
- National legislation permitting ownership of "condominium" apartments in multi-story buildings should be enacted. This would help increase the supply of such solutions, which would help make urban land development more efficient.

The draft Housing Policy does not make any explicit references to promoting market mechanisms or enhancing the role of the private sector in urban land delivery.

3.0 URBAN LAND CEILING AND REGULATION ACT

The Urban Land Ceiling and Regulation Act (ULCRA) of 1976 has been applied in 70 cities with 1971 populations of 200,000 or more (see Annex 1).⁴ The covered cities were divided into four categories based on population. Each category had a land ownership ceiling and a specified peripheral zone within which the Act would apply. Category A consisted of the four largest metropolises (Bombay, Madras, Calcutta, and Delhi), with a ceiling of 500 m² and a periphery (measured normally from the Corporation limit) of 8 km. Category B consisted of five cities (Ahmedabad, Bangalore, Poona, Hyderabad, and Kanpur) with a ceiling of 1,000 m² and a periphery of 5 km. Categories C (31 cities) and D (30 cities) had, respectively, ceilings of 1,500 m² and 2,000 m² and peripheries of 5 km. and 1 km.

3.1 IMPACT OF ULCRA ON LAND DELIVERY

ULCRA is widely acknowledged to have failed in accomplishing its main objectives, which are (1) to redistribute land, (2) to prevent speculation in land, and (3) to facilitate the use of urban land for low-income housing. Up-to-date statistics on the application of ULCRA are not readily obtainable. The most recent published data are up to May 30, 1986 (see Table 1). At that point, 10 years after the passage of the Act, 166,138 ha. had been classified as surplus by the States and Union Territories nationwide. Of this, 14,589 ha. (9 percent) had been "notified" as vesting with government. The vast majority of this land is concentrated in the six states of Uttar Pradesh, Maharashtra, Andhra Pradesh, Madhya Pradesh, Karnataka and Rajasthan. Of this, only 3,854 ha. (2.3 percent of the land classified as surplus) had been physically taken over. Finally, only 621 ha. had been used for the construction of housing. As of early 1990, according to the Ministry of Urban Development, the amount of land classified as surplus had risen to 212,549 ha. and the amount taken over had climbed to 9,946 ha. The area used for housing remained less than 1,000 ha.

The main reasons for this poor record are:

- The low level of compensation set in the Act (Rs. 10/m² for A and B cities, Rs. 5/m² for C and D cities, plus 8.33 times the average net annual income from the land, if any, over the previous five years), which caused much litigation and evasion of the ceilings.
- The relatively liberal granting of exemptions in some States, as well as manipulation of the exemption process and the filing of suits for exemptions based on hardship or public interest (under Section 20 of the Act).
- Administrative ineffectiveness and inefficiency.
- The fact that much of the "excess" land to be taken over was in small, fragmented pieces, which made it difficult for public agencies to use it for housing.

⁴The populations of 70 cities were not readily available for this report. Published aggregate data from the census, NCU, and other sources cut the urban population at city sizes of 1 million and 100,000. In 1981, the share of urban population in cities of 1 million or more was 27 percent, and the share in cities of 100,000 or more was 60 percent.

TABLE 1
Progress of Implementation of the Urban Land
(Ceiling and Regulation) Act 1975 in the States and Union Territories
Up to May 20, 1986

Name of State/ Union Territory	No. of Statements of excess vacant land received	No. of Statements scrutinized	No. of Statements finally disposed	Vacant land after scrutiny (ha.)	Land acquired & vested with State Govt. (ha.)	Land in respect of which physical possession has been obtained (ha.)	Land used for construction of houses (ha.)
1	2	3	4	5	6	7	8
Andhra Pradesh	25,239	17,511	7,199	4,670.50	1,522.51	452.78	101.26
Assam	2,145	1,522	356	37.42	18.99		
Bihar	1,087	245	200	198.69	20.46	15.11	
Gujarat	41,518	39,004	13,048	32,513.00	218.00	124.00	22.86
Karnataka	32,414	25,581	18,342	2,692.92	1,007.12	499.21	163.33
Madhya Pradesh	10,871	9,212	3,775	6,555.53	1,307.54	603.86	
Maharashtra	71,776	45,457	21,167	34,213.77	4,494.59	877.07	332.60
Orissa	812	812	262	28.34	58.00		
Punjab	5,996	3,451	2,700	783.10			
Rajasthan	9,676	7,710	2,528	26,906.72	830.75	21.48	
Uttar Pradesh	119,745	107,792	70,061	51,510.68	4,872.58	1,238.61	
West Bengal	30,475	10,654	1,138	5,007.00	112.24	19.63	0.80
Chandigarh	198	95	61	10.04			
Delhi	8,540	6,113	3,927	247.13	25.12	1.99	
Pondicherry	1,221	881	615	158.46	5.18	0.06	
Centonment Areas	3,565	3,484	2,998	304.85	95.46	0.03	
Total	365,278	(279,364) 279,724	148,377 279,724	(166,192.17) 166,138.18	14,598.64 166,138.16	(3,851.63) 3,853.83	620.85

Source: National Commission on Urbanization, 1988.

Note: The numbers in parentheses appear in the original source table but are slightly incorrect. The correct totals appear directly below.

The above data clearly show that ULCRA has not redistributed land or produced lower-income housing. In addition, many observers believe that ULCRA has helped to foster higher rather than lower land prices in urban areas.⁵ This is attributed to a reduced supply of urban land caused by provisions in ULCRA prohibiting "excess" land from being transferred (Sections 5 and 10) and requiring notification to the government before any other urban land transfer (Section 26). One study of ULCRA's impact in Ahmedabad⁶ argues that ULCRA "created a psychology of scarcity in the [land] market" and that it helped concentrate control of land in fewer hands because "the process of acquiring land under the Act has become so complicated and costly that it requires special skills".

Hard data on the amounts of land classified as surplus, exempted, and taken over at the city level are not readily obtainable from district or state ULCRA offices. No one knows how much land is tied up in ULCRA-related litigation. Conclusions have to be drawn from interviews and case studies.

According to discussions with knowledgeable people, the effect of ULCRA on the supply of urban land for shelter seems to have been mixed. ULCRA has certainly made it more difficult to acquire and develop parcels of land larger than the ceiling sizes, but the degree of additional difficulty is uncertain. The larger real estate developers have been able to circumvent ULCRA by manipulating the administrative process. A common method is to use the exemption for housing cooperatives (Section 19). It is a normal practice for private developers to take the lead in organizing and managing housing cooperatives in order to obtain land and financing. Often these cooperatives are false fronts. Discussions with large developers indicate that they view ULCRA as a nuisance, but not as a primary impediment to obtaining and developing land.

In more built-up areas, a common method of evasion of ULCRA has been to stretch the designation of "built-up" property, which is exempt. Land owners have also demolished buildings (especially old bungalows with low FAR) on land previously exempted as built-up. This is supposed to be controlled by government, but enforcement has been lax.

To a certain extent, ULCRA has probably reduced the access of smaller real estate developers and builders to urban land, by increasing land and administrative costs. The discretionary decision-making powers given to government under ULCRA are often blamed for creating much greater opportunities for corruption and delay in the development process (see Wadhva 1988 and 1989).

⁵This view is held by the National Commission on Urbanization (see NCU Report Vol. I, p. 21; NCU Base Paper on ULCRA, p.3; and Vol.IV, "Report of the Working Group on Self-Financing Mechanism", p.94).

⁶Kiran Wadhva, "An Evaluation of Urban Land Ceiling Act (A Case Study of Ahmedabad)", in R.C. Sharma, ed., *India's Urban Land Policy and Development Finance*, New Delhi: Seema Publications, 1988, pp.195-211.

One or two studies,⁷ as well as persons interviewed for this report, suggest that a large number of vacant plots in urban areas are unavailable for development because they are under litigation related to ULCRA.

By restricting the supply of developable land, ULCRA is said to have caused development to "leap-frog" beyond the area of the Act's coverage to locations farther away, resulting in a more inefficient development pattern. Field work for this report did not uncover any studies documenting this. Persons interviewed in Ahmedabad and Lucknow did not cite ULCRA as a major cause of peripheral urban sprawl.

Implementation of the Act has varied from State-to-State. Some States granted exemptions liberally, so that much of the land initially reported as "surplus" reverted to the original owners. Section 20 of the Act allows exemptions to be given if the government considers it "in the public interest" or if there is "undue hardship". Section 21 permitted exemptions during the first 1,139 days after the Act's passage for landowners who declared that the land would be used for housing schemes for "weaker sections". According to data in an NCU report (Base Paper on ULCRA), as of May 1986 40,419 ha. had been exempted nationally under Section 20, which is more than 10 times the amount of land physically taken over by government under the Act. Exemptions under Section 21 totalled 3,445 ha., almost equal to the amount taken over. (Note: data do not include Tamil Nadu.)

More than half the land exempted under Sections 20 and 21 was in the State of Gujarat alone. Other States with relatively high exemption levels were Karnataka, Madhya Pradesh, Maharashtra, and Uttar Pradesh.

In general, it seems that ULCRA has reduced the supply of land, but its major effect has probably been more to increase the "friction" of bringing land onto the market than to keep land off the market entirely.

3.2 AMENDMENTS TO ULCRA

Among Indian officials and researchers, criticism of ULCRA focuses on faulty implementation provisions and weak administration, but not on the Act's fundamental premises (i.e. urban land reform). These are widely viewed as valid. ULCRA's contribution to reducing the supply of developable urban land is not seen as a significant problem except by private developers.

Indian officials and policy analysts interviewed for this report do not interpret ULCRA's failure so far as an indication that government regulation and intervention in the land market does not work. Reform proposals focus on improving the implementation of ULCRA, not on reducing its scope.

⁷See, for example, Wadhva's 1989 report on Ahmedabad.

Government officials as well as local experts agree that ULCRA should not and will not be repealed. The draft Housing Policy of the Government of India (May 1990) calls for making amendments in ULCRA "to remove the inhibiting effects of urban land ceiling legislation without diluting its social purpose".

The Ministry of Urban Development is currently considering amendments to ULCRA which would make the Act, as one official put it, more "constructive".⁸ The main changes being considered are:

- Deleting most provisions for exemptions, and making any remaining exemptions automatic rather than discretionary.
- Increasing the compensation.
- Allowing land owners to develop their surplus land for lower-income housing directly, with minimum government control (rather than taking over the land and handing it over to public agencies, as is currently required) during a period of five years, after which undeveloped surplus land would be expropriated.
- Imposing a strong vacant land tax, the proceeds of which would be put in a special fund for provision of lower-income housing.

The third proposal depends on the willingness and ability of land owners to cooperate. Owners of larger parcels might undertake development, but one suspects that owners of smaller parcels would remain unwilling or unable to do so (due to lack of financing or non-usability of their "excess" land). The proposed approach would still require a large government regulatory apparatus. Even if it works, the approach is flawed in requiring that all the land be developed for low-income housing within a short five year period. This would in theory glut the market within five years and leave no land for development afterwards.

The proposed vacant land tax has been strongly advocated by the NCU and other observers. The problem is that such a tax will be very difficult to implement given the weak existing systems of property valuation and tax collection, which are administered locally.

3.3 COMPARISON WITH CITIES NOT UNDER ULCRA

The Scope of Work for this report asked that a comparison be made, focusing on land allocation and cost, between two large cities falling under ULCRA and two small cities not subject to it. This analysis has not been possible due to the lack of readily obtainable land market data. The consultant team visited Ahmedabad and Lucknow, and one member of the team visited a small city near each (Kalol, a municipality of about 85,000 30 km. from Ahmedabad and Sitapur, a municipality of about 140,000 90 km. from Lucknow). It is very difficult to draw any conclusions about the land market in these cities compared with the large ones. Apart from the lack of data, the small cities visited were growing slowly and did not have dynamic land and housing markets. In both

⁸Individual states would still have to enact the amendments, based on broad guidelines adopted at the national level.

of the small cities, the main constraints on land delivery seemed to be the lack of main infrastructure and the lack of financing for public low-income housing schemes. There were no private sector formal land developers operating in either city. In Kalol, which comes under the jurisdiction of the Ahmedabad Urban Development Authority, a development permission system exists. In Sitapur, there is no land use plan and no development control system.

4.0 LAND REGULATIONS AND STANDARDS

4.1 INTRODUCTION

Regulations affecting land markets have been studied by GOI, international organizations, and local research agencies. The India Urban Strategy Statement prepared by USAID identifies the following problems:

- Inflexible and costly site development and building standards.
- Tortuously slow and demanding government reviews of development applications.
- Cumbersome procedures and heavy duties and fees entailed in processing land title changes.

This section of the report assesses the constraints to the provision of urban land resulting from the government review process and from development standards. Each sub-section below will have the following format:

- Description of constraints
- Estimate of the impact on land availability
- Estimate of the impact on private developers
- Response of private developers to constraints

4.2 ADMINISTRATIVE PROCEDURES

All activities relating to land development take place in a well established environment of control and regulation by government. The relationship between government and private developers is mostly adversarial. If government is to take on the role of facilitator in urban development, this relationship will need to be changed to one of cooperation and support.

While recent studies and policy statements recognize the shortcomings of present laws and regulations, proposals to improve the situation tend to be for modifications to regulations rather than relaxation or reduction in regulation of land development activities. It is safe to assume that activities undertaken in the area of land development will continue to be in a highly regulated environment.

While there are national bodies that set land development standards, these are advisory to local development authorities and municipal corporations that establish their own standards and administrative procedures for development control. As a result there is considerable variation in procedures and regulations between different cities and states. Responsibility for development control also varies considerably in different locations depending on local conditions.

Inefficient administration of development control procedures is the main source of problems within the system. Constraints include:

- **Delays.** Regulations usually set a limit on the length of time (e.g., 90 days) regulatory agencies, such as urban development authorities or municipal corporations, have for review of development applications. While some are processed within this time

limit, discussions with developers and consultants indicated that the process often takes much longer, sometimes as much as 18 to 24 months. A common practice is to reject the application just before the prescribed time has elapsed, and then start protracted negotiations with the developer.

- **Inconsistent application of standards.** Standards are applied in an arbitrary manner in some cases thus creating uncertainty for applicants. It is felt that this happens because staff of reviewing agencies are inadequately trained.
- **Opportunities for corruption.** Since the magnitude of money involved in land development is high, there is always the potential for illegal payments to expedite processing and obtain special favors.
- **High risk for private developers.** In some jurisdictions, there are no procedures that would permit a developer to obtain preliminary approval of development plans before the assembly and purchase of a site. In countries with an active private sector, it is possible to obtain an option to purchase land pending approval of zoning changes or development plans. If the application is rejected, the developer loses only the costs of the option and proposal preparation but has not made a major commitment for land purchase. In some cities, informal arrangements can be made similar to an option to buy.

Inefficiencies in the development review process affect not only the rate at which serviced land comes onto the market but also the amount of serviced land available. The impact is more on the quality of land being made available than the quantity since there is substantial informal development taking place outside the development review process.

It is not possible to quantify this impact, which certainly varies in different places, but it is felt to be substantial. This is an area for further research. More information is needed on the following impacts:⁹

- **Reduced supply of formally developed land.** The uncertainties and costs involved in obtaining official approvals of subdivision plans discourage private developers from participating in the process. Public development agencies usually do follow procedures but not without delays.
- **Increased informal and non-conforming development.** Because of ineffective enforcement and weak penalties for development outside the system, there is not much incentive for developers to make application for development approval. There appears to be a high degree of social acceptance of informal land transfer and development that helps to perpetuate the present illegal practices.
- **Unserviced or poorly serviced urban land.** Much of the land that is developed informally does not have adequate services. These must be added at a later date at increased cost with reduced opportunities for cost recovery.
- **Lack of land for community facilities.** In informal developments there is usually little land reserved for basic community facilities and open space.

⁹The soon-to-be completed study on land delivery processes commissioned by USAID may contribute to knowledge on this subject.

Inefficiencies in the public sector development review process produce a significant negative impact on the private sector. As indicated above, this adversarial relationship has few incentives to encourage private sector participation. Also, different standards are applied to private development as discussed in the section on land use standards (below). The degree of impact varies depending on the size of the private development organization:

- **Large developers.** A small number of large private development organizations in metropolitan areas have the expertise and influence needed to deal with the review procedures successfully. Anticipated delays and fees (formal and informal) are calculated into the schedule and costs as part of doing business.
- **Medium and small developers.** Smaller organizations and individuals do not have the same resources as the larger groups and are, therefore, not able to deal with reviewing agencies as effectively. In fact there appear to be very few medium-size private developers active in formal land development. With more limited funds, the risks of rejection after land has been purchased and the costs associated with official review would appear to be too great for many smaller firms.

Private land developers have responded to the above constraints in a number of ways depending on their resources and types of developments. Some of these include:

- **Development outside formal controls.** As indicated above, the system of weak enforcement and social acceptance has made it possible for many smaller real estate agents and developers to work outside the formal system.
- **Informal payments.** Those who submit applications for review sometimes make illegal payments to officials to assure efficient processing of their application and even sanctioning of non-conforming conditions.
- **Joint ventures or partnerships.** Some large developers have entered into partnerships with development authorities for the rights to develop land. These associations with the reviewing agency have helped to expedite the review process.

4.3 PLANNING CONTROLS

To bring new lands into urban uses under formal procedures, the land use designation must be changed from agriculture to urban. Since this change can have a dramatic impact on the value of land, it is an activity subject to manipulation and political influence.

Within the boundaries of urban areas, this change of use is accomplished through the master planning process. In areas beyond the urban limits, changes are approved on a case-by-case basis by the local government agent (Collector) responsible for land registration. Inefficient administration in both of these situations results in constraints on the availability of land for urban development:

- **Delays in the master planning process.** It is by the master planning process that agricultural lands within the limits of metropolitan areas are designated for development for various urban uses. Master plans are intended to guide development over a 15 to 25 year period but are often not officially approved until well into the period they cover. In some cases, approval is delayed by as much as 8 to 9 years. This can

delay bringing needed land into the urban market for both public and private development.

- **Lengthy review process.** Up to 7 or 8 "No Objection Certificates" from different agencies may be needed to allow a piece of land to be developed for urban use. In rural fringe areas, the change of use must be approved by the Collector, whose office usually has no expertise in urban planning and no guidelines for making such decisions.

The impacts of planning controls are different depending on the type of area. Some of the impacts include:

- In designated urban areas, delays in approval of the master plan can hold land out of the market that would normally be urbanized by market forces. This constraint can impact both the public and private sectors and drive up the price of approved land resources.
- Even when the master plan has been approved, it can adversely affect land supply. There are indications that traditional master plans have designated more land for non-residential public use than can be developed by government, thus taking away land that could be used to meet housing needs. In practice, some of this land is put into residential use through squatting or informal development.
- In areas outside urban boundaries, the uncertainty of obtaining approval for a change of use may discourage legal development particularly by private developers who must purchase the land before making application for a use change.

The private sector is under the same constraints as the public sector in the declared urban areas since they must compete for land that has been officially designated for urban use. The utilization of land is quite closely controlled by development authorities and "sanctioned" for use by private developers after an often very lengthy review process. In areas outside the urban boundaries, there are negative impacts on private development including:

- **Lengthy approval process.** As indicated above, the approval of land use changes can be a long and arbitrary process. A developer must be willing to push an application through the system and possibly make payments to assure efficient handling by the local authority.
- **Increased risk.** A developer is at risk since he must purchase the site before making application for a use change with no assurance that the application will be approved.

The response of private developers, particularly smaller- and medium-sized ones, to these constraints has been to avoid the formal review procedures and develop new lands illegally. This is particularly true in outlying districts.

4.4 LAND USE STANDARDS

States are beginning to revise their land use standards in order to make legal shelter solutions affordable to lower-income groups. One study by the World Bank showed that a dwelling unit developed to official standards in Uttar Pradesh was

affordable only to the top five percent of households.¹⁰ There is considerable variation in standards since they are adopted at the local level but often with direction from state planning agencies. National agencies prepare advisory development standards as guidelines for local planning authorities.

There is a dual system of standards at present. National financing organizations such as HUDCO and the National Housing Bank have established standards for projects targeted to the Economically Weaker Sections. These standards have been primarily for public developments, but are now being applied to a limited number of private projects. These projects often require special exemptions since the reduced standards are in conflict with those of most local agencies.

While the more efficient standards are included in the National Building Code and have been adopted by some states and local development authorities, private developers are usually not permitted to use these standards for their projects. The minimum size plots from different standards and for both public and private developments are shown below:

STANDARD	MINIMUM PLOT SIZE (m ²)	
	PUBLIC	PRIVATE
National Building Code	30	50
Draft National Housing Policy	25	25
HUDCO	15	--
Ahmedabad Development Plan	25	40
Lucknow Master Plan	Decided by the Lucknow Development Authority	90

The application of traditional land use standards determines how urban land can be utilized. Constraints to efficient use of land include:

- **Lack of flexibility.** Under traditional standards which require larger plots, it is not possible to design residential projects that will be affordable to lower-income households.
- **Inefficient use of land.** Generous standards for circulation, open space and community facilities result in a reduced amount of usable residential land and, therefore, higher costs.

The problems resulting from the application of traditional land use standards relate primarily to the inefficient use of available land. At lower densities, more land will be required to accommodate the expanding urban population, thus creating a greater

¹⁰World Bank, "The Affordability of Land Subdivision Legislation: Uttar Pradesh Case Study", Urban and Water Supply Division, South Asia Projects Department, October 24, 1984.

demand for new land. Traditional standards have the following impact on utilization of land:

- **Inefficient use of urban land.** Standards requiring larger plots and generous public spaces use more land for urban growth.
- **Excess public land.** Standards require that more land be reserved for public uses than can be developed and maintained by public agencies. Some of this land could be better utilized for residential needs.
- **High development costs.** The lower the density, the higher the cost per plot for services. This adversely affects affordability and limits the population that can be provided with infrastructure using limited government resources.

As described above, private developers traditionally have not been permitted to use lower standards designed to serve the Economically Weaker Sections. The private sector has not in the past provided much housing for lower income families, and in most cases, are actually constrained from doing so. The costs of plots are also increased by the high percentage of land required for public facilities thus limiting the amount of marketable land and the number of plots.

Under past regulations, private sector developers had only the option of developing land exclusively for the higher-income levels of the population. The other choice is to work outside the formal structure, which many developers have chosen to do.

5.0 LAND INFORMATION SYSTEMS

5.1 TYPES OF LAND INFORMATION REQUIRED

Certain information is considered essential for the effective functioning of urban land markets. Other types of information may be desirable but not vital.

Essential Information:

- **Common Spatial Referencing.** A common system of spatial referencing must be used to ensure that different types of information relating to the same point or area on the ground are correctly superimposed within acceptable accuracy tolerances. This can be achieved numerically by relating each piece of data to a common rectangular grid coordinate, graphically by using the same base map, or by using common spatial units (such as each individual land parcel) identified by a unique parcel reference number (UPRN). Ideally, all three methods should be used together.
- **Land Tenure and Register of Land Transactions.** Land title and other rights to land (such as leases, tenancies, and mortgages) and their extent are required to permit rapid identification of owners and other interested parties for collection of land tax, payment of compensation for land acquisition, and enforcement of land use and development regulations. This information needs to be updated with each change in ownership, mortgage, lease, or boundary in order to keep the records current and provide security of tenure to the owners. This gives the owners confidence to improve their land and property and the necessary collateral to obtain mortgages.
- **Land Valuation.** Assessment of land and property value is required for taxation, land acquisition, land transfer fees, and understanding of market prices and variations.
- **Actual and Permitted Land Use.** Actual land use and land use change is required as a dynamic inventory of the current situation and recent trends. These indicators need to include quality of agricultural land, fragile or protected environments, and types of urban land use such as industrial, commercial and residential (sub-divided by income group, plot size or state of housing stock).

Permitted land use or development also needs to be recorded in order to enforce planning and building regulations.

Other useful but less essential information relevant to serviced land delivery includes:

- **Communication Networks and Public Access.** The actual and planned road network is required, and may eventually include state of repair, carriageway widths, traffic flow and capacity. Location of rivers and railways may also be relevant to planning and land values, both as barriers and corridors for movement.
- **Records of Utility Services.** The locations of utility networks (water, sewers, storm drains, electricity, telephones), planned extensions, capacity, state of repair, etc., are all necessary information for the delivery of serviced land. Only very general information is required for this purpose (which streets the trunk lines follow and what capacity they have). To operate, maintain, and extend the utility services, much more accurate location of underground pipes and cables (perhaps to 0.5 m) may be required

together with details of depth, pipe diameters, voltages, materials, etc. This is a separate and massive task.

- **Demography and Socioeconomic Data.** Very useful analysis of supply and demand for different types of housing could be obtained by superimposing spatially related information on population densities and changes, income groups, etc. This may be considered a longer-term objective.

5.2 PRIME USERS OF LAND INFORMATION

The prime users of land information are local officials, planners and decision makers in village, district, and state authorities. Private developers and housing loan agencies require access to much of the same information. Individual land owners need access to specific information about their real estate relating to security of tenure and prevailing land prices. Central Government has a need for periodic reports to define land policies, improve administrative procedures, draft new legislation and allocate responsibilities, priorities and resources.

The prime users of land information and their responsibilities and interests are summarized in Table 2.

Detailed land information is required on a daily basis by village and district officials. Periodic status reports are required at city and state headquarters for decision making, planning and supervision. Even more generalized information is required by central government ministries for policy decisions, administrative and legal reform, allocation of resources and priorities, etc.

The NCU report of 1988 recognizes that in towns and cities "there are virtually no land records" (Vol.II, 6.3.1), and recommends "that there should be a Settlements Survey of India, separate from the present Survey of India, whose job would be to make scientific surveys of land, and to classify and suggest the most appropriate uses for different types of land".

Improvements in land information systems should be viewed as part of a larger effort to make the institutional apparatus of land management—e.g., revenue collectors, land registrars, and land administrators in the state governments—more efficient. In practical terms, this means redefining responsibilities, simplifying procedures, and reducing the number of entities involved. These institutional users need to be trained to make more effective use of information.

The roles of the private developers, brokers, and individual landowners in the delivery of land for development need to be recognized, and security-oriented restrictions on the supply of land information to the private sector relaxed.

There are many other organizations not directly involved in the land market who could make use of much of the same information including fire, police and ambulance services, environmental protection, market research for commercial products and services, transport operators, flood prevention, etc. These interests fall outside the scope of this study

TABLE 2 USERS OF LAND INFORMATION	
Users	Responsibilities/Interests
Central Government (aggregated information only)	<ul style="list-style-type: none"> ■ Policy Issues ■ Legal reform ■ New technology ■ Financial planning ■ Allocation of priorities
State Government:	
Revenue Offices	<ul style="list-style-type: none"> ■ Fiscal cadastre ■ Land tax collection
Registrar	<ul style="list-style-type: none"> ■ Legal cadastre ■ Registration of deeds
Urban Development Authorities	<ul style="list-style-type: none"> ■ Planning ■ Enforcement ■ Housing schemes
Municipal/Local Authorities	<ul style="list-style-type: none"> ■ Building regulation ■ Land acquisition ■ Enforcement ■ Property tax
Highways & Utilities	<ul style="list-style-type: none"> ■ Construction ■ Operation and maintenance
District & Village Officials	<ul style="list-style-type: none"> ■ Monitoring change ■ Explaining and enforcing government policies
Private Developers	<ul style="list-style-type: none"> ■ Land title ■ Land values ■ Land acquisition ■ Available services
Land Owners	<ul style="list-style-type: none"> ■ Security of title ■ Transfer of land

but should not be overlooked in maximizing the benefits of investment in land information.

5.3 EXISTING SOURCES OF LAND INFORMATION

The following sources of land information currently exist. The extent, content, reliability and currency of these data, however, vary enormously from state-to-state:

- **Satellite Imagery.** The National Remote Sensing Agency, Indian Institute for Remote Sensing, and Survey of India have facilities for image analysis of Landsat and SPOT satellite imagery. However, even the best available imagery, SPOT, which has a ground resolution of 10 meters, is inadequate as a source of land information except for very generalized interpretation of land use categories, main road networks, areas liable to flooding, environmental protection, etc. It is not suitable for designing infrastructure, identifying individual dwellings, or defining property boundaries.
- **Aerial Photography.** Three organizations produce aerial photography for the Survey of India:
 - The Indian Air Force
 - The National Remote Sensing Agency
 - The Air Survey Company of India, Calcutta (Private)

The Survey of India obtains aerial photography of the whole of India at 1:50,000 scale which is repeated every 5-7 years. Despite security restrictions, this should be available to government authorities.

Other users such as Development Authorities either obtain photography through the Survey of India or commission it themselves.

It is standard practice to produce mapping from aerial photography by photogrammetric methods with four to six times enlargement from photoscale to map scale.

Mapping Scale	Photoscale	Flying Height
1:500	1:3,000	1,500 feet
1:1,000	1:5,000	2,500 feet
1:2,500	1:10,000	5,000 feet

Semi-controlled mosaics can be supplied as low-cost map substitutes, but these will not be true to scale and will contain quite serious distortions, omissions or duplications of detail if variations in ground heights exceed 10 percent of the flying height.

Rectified mosaics and orthophotomaps that remove some but not all of these distortions are significantly more costly and more time-consuming to produce.

- **Mapping.** The Survey of India, located in Dehra Dun, under the Ministry of Science and Technology, has been the national survey and mapping agency since 1767. It is responsible for geodetic control and national mapping at 1:25,000, 1:50,000 and

32

smaller scales, but also undertakes large-scale city mapping and project surveys on contract.

A number of towns in Punjab have been mapped at 1:2,500 scale with 0.5 m. contours. Otherwise, large-scale urban mapping has been limited to small surveys for particular projects.

Maps of 1:25,000 scale and some 1:20,000 scale city guide maps are used for urban planning in the absence of large scales.

- **Cadastral Surveys.** The Revenue Office of each State Government is responsible for surveying all property boundaries, maintaining maps with each land parcel numbered and a list of current land owners, land use, and valuations. The surveys have been carried out by chain or plane table for more than a century. The reliability, completeness and currency of these surveys varies considerably from State to State. An example is shown in Figure 1.

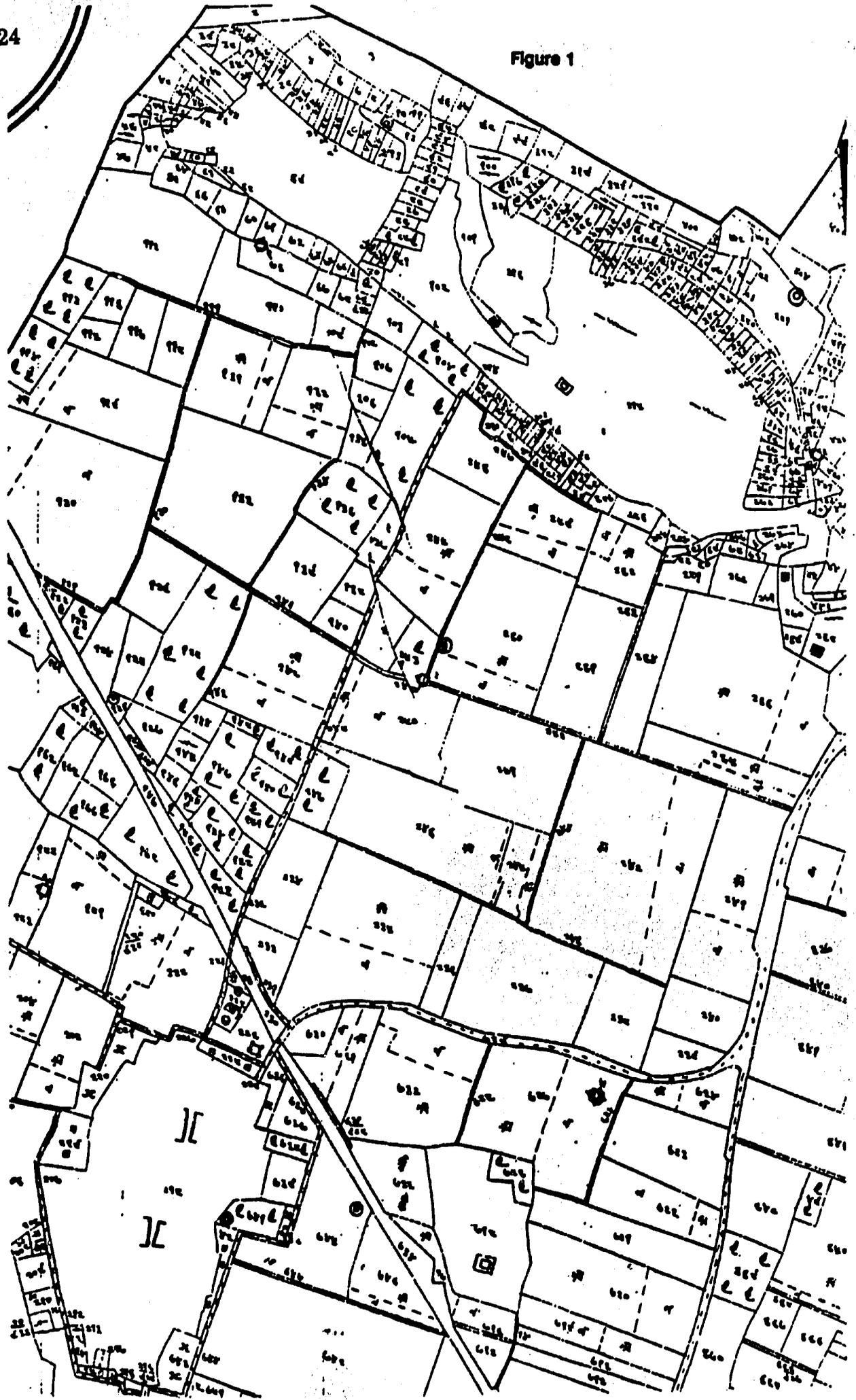
In rural areas where boundary changes are infrequent and the local Revenue Office officials use personal contact to monitor land transfers and development, the cadastral record books, but not usually the maps, may be reasonably complete and up-to-date. Once land has been released for non-agricultural use, the Revenue Office no longer collects land tax. When this occurs, the municipality or local authority becomes responsible for collecting building tax and water charges instead. This reduces the incentive for the Revenue Office to continue to record changes in boundaries and ownership.

The urban local authorities (Development Authorities and Municipal Corporations) have not been able to allocate the manpower and resources required to monitor and control the much more frequent changes of land use and development in urban areas.

In Ahmedabad, the cadastral maps have been reduced by pantograph to 1:7,962 scale to provide the base for the Master Plan.

- **Registration of Deeds.** A separate state government department, the Registrar's Office, is responsible for recording land transfers by registration of deeds. These registries certify land transactions submitted to them within about a month. In Uttar Pradesh, there is a stamp duty charge of 15 percent of the value of the property plus Rs. 22 per registration. Court fees are Rs. 3,000. There are no procedures for registering transactions which are not voluntarily notified. There is no formal exchange of information between the land registries and the land records offices. An increasing proportion of land transfers are thought to be carried out informally or by legal devices such as sale of powers of attorney that avoid these registration fees. The consequence of this is that buyers do not obtain fully legal titles but only quasi-legal rights, or no legally-enforceable property rights at all.
- **Planning Information.** Information relating to actual and permissible land use appears to be fragmented, incomplete, unreliable, and generally years out-of-date. Such information may be held by Development Authorities, Municipal Corporations

Figure 1



Handwritten initials or signature in the bottom right corner.

and other local authorities. Some academic institutions such as the School of Planning, Ahmedabad, and the Indian Institute of Remote Sensing, Dehra Dun, have been able to carry out useful case studies by assembling existing information from various sources. These institutions also undertake local data collection by interpretation of satellite imaging and aerial photography supplemented with some ground verification.

- **Socioeconomic and Demographic Information.** Census information is collected by ward (sub-District) and could be used to provide some spatially related socioeconomic and demographic information. No evidence has been found to indicate that this has been done other than experimentally.
- **Field Data Collection.** Systematic collection of data in the field is normally adopted for verification of information interpreted from satellite imaging and aerial photography. Site visits to monitor and enforce planning permits and building regulations could be used to collect systematic information in this way.
- **Infrastructure Records.** Some diagrammatic records of planned or constructed highway networks, water distribution pipes, sewers, storm drainage, electricity cables, etc., are drawn on copies of the cadastral maps where available. The actual location of buried services, details of pipe sizes, dates of construction, materials, etc., appear to depend entirely upon the recollections of long-serving members of the respective utility services.
- **Records of Planning Applications and Building Permits.** Records of authorized development and construction do not appear to be recorded in a manner that could be used to record change spatially. This makes it extremely difficult to monitor the location of new development for planning, investment programming and operation of urban services.

Much of the information that does exist is not regarded as a valuable resource to be maintained and used for a variety of purposes and shared with users other than the originators.

5.3.1 How Improved Land Information Management (LIM) Would Facilitate Efficient Functioning of Urban Land Markets

Land information not currently available and encompassing a wide range of aspects relevant to land development could be merged and analyzed to answer some of the more important questions that decisionmakers, planners and enforcement offices need in order to operate land markets effectively. Some of these questions might be:

- How much land is being developed for various types of housing each year? Where and to what extent are squatter and unauthorized colonies developing?
- What are the variations in land prices in different parts of the city and what changes in prices have occurred in recent years?
- Where are there large enough concentrations of government-owned or privately-owned land suitable for planned development schemes?
- What is the current extent of utility services and access roads and where are spare capacity and plans for extension?

- Which parts of the city are most dynamic in terms of land transactions and building activities?

An effective non-graphic information system is being used by the National Housing Bank. Using a locally manufactured PC micro-computer and spreadsheet, the status of housing schemes was summarized showing the number of houses constructed for different income groups, compliance with plot size regulations, involvement of private developers, elapsed time, etc. It is clearly being used as a management tool to monitor performance against targets, slippage in construction schedules, and investment objectives.

5.4 DEFICIENCIES OF AVAILABLE LAND INFORMATION

The NCU report has identified the lack of urban land information as a major cause of ineffective urban administration and grave distortion of land prices (Vol.II, 6.3.1).

A recent report prepared for USAID¹¹ notes that "a current, useful and working land information system does not exist" in Delhi. This report also cites discrepancies of 15 to 20 percent between information on properties registered separately in the census department and land revenue department due to lack of cross correlation.

5.4.1 Common Spatial Referencing

The Survey of India uses geographical coordinates (latitude and longitude) for all mapping at 1:25,000 scale and smaller. This is not suitable for large-scale urban mapping. Cadastral surveys are based on local plane rectangular grids for each village or sub-district. These will not interconnect properly at the edges, and unacceptable errors in scale and orientation would occur across large cities.

In order to avoid distortion, scale errors, gaps and duplication, it is necessary for all data sets to be related to a common spatial referencing system such as a local Transverse Mercator Grid, covering each city. Until such a referencing system (or a common base map) is adopted it will not be possible to superimpose different data sets referring to the same points or areas on the ground with confidence. Displacements between different types of information can result in misleading deductions.

The lack of large-scale base maps showing major national and man-made physical features and possibly some height information has not been identified as a serious deficiency except by the Survey of India, India Institute of Remote Sensing, and National Informatics Centre. In most rapidly expanding cities, this is considered essential, and the World Bank has financed the mapping of more than 100 towns and cities in Indonesia at 1:1,000 scale. Rigorous mapping may not be affordable, but a low-cost map substitute at an intermediate scale (1:2,500 or 1:5,000), possibly based on semi-controlled mosaics, might prove to be the minimum requirement.

¹¹Charles J. Billand, PADCO, "Delhi Case Study: Formal Serviced Land Development", USAID/India and RHUDO/Bangkok, April 1990.

The existing Revenue Office system of unique parcel reference numbers (UPRN) provides the essential linkage between the cadastral maps and the records of owners and land valuations, but this information needs to be brought up-to-date. Such an effort would be considerable at the level of a city, but it should be part of the fundamental reform of land information, to be carried out gradually.

5.4.2 Land Title Records

The lack of current and complete records of land title is identified repeatedly as a problem in various reports as well as in items (8), (9), and (10) of the GOP's Draft Housing Policy (May 1990):

Procedure for investigation of title to be simplified and made inexpensive and the question of installing the Torrens system may be considered. (8)

Simplification of procedure for registration of documents and expeditious release of registered documents. (9)

Instead of registration of deeds or interest in the property, alternative approaches like registration of title to property to be explored so that a certificate of registration of title protected by statute can be easily made available. (10)

The report, "Urban Land and Infrastructure: Project Opportunities for AID in India" (Urban Institute, March 1989, 2.1), notes that the title records are deteriorating because of strong disincentives to register sales. Faulty records and cumbersome processing procedures result in long delays in legally acquiring land.

Discussions with a private developer in Lucknow and senior officers in the Ahmedabad Urban Development Authority and Municipal Corporation confirmed this in part, but they considered that other causes of delay were more serious, such as obtaining approval for development, compulsory land acquisition contested in the courts, and availability of funds for development schemes.

This view could reflect another serious deficiency of information: the lack of annual targets to narrow the gap between demand and supply for low cost housing and the lack of statistics to quantify the housing demand, housing stock and new construction.

The main shortcomings of the current system may be summarized as follows:

- The fiscal cadastre (boundary surveys, parcel numbering, occupant, land valuation for taxation) and the legal cadastre (registration of deeds of land transactions) are the responsibilities of two different departments (Revenue Office and Registrar), and there is virtually no exchange of records except when disputes are referred to the courts.
- Registration of land transactions is not compulsory, and increasing numbers of buyers accept the risks of fraud to avoid the cost and delays involved in formal registration by using informal agreements of sale or transfer of land rights by power of attorney.
- There is no real responsibility or motivation in the Revenue Office or Registrar's Office to maintain up-to-date records in urban areas as the land tax is replaced by the building tax which the local authority is responsible for collecting.

5.4.3 Land Valuation

Valuation of agricultural land for tax assessment is only required to be undertaken at thirty year intervals. The resources necessary to value properties in urban areas at appropriate intervals have not yet been provided by the states to their revenue offices. The land prices recorded are known to be undervalued by the seller/purchaser to reduce tax liabilities (NCU report, Vol.II, 6.3.2).

5.4.4 Actual and Permitted Land Use

The Master Plans, which define zoning policy, provide the only spatial record of permitted land use. The plans seen (Ahmedabad and Lucknow) have not been updated by the Urban Development Authorities to reflect the dynamic evolution of these cities for many years.

The GOI Town and Country Planning Organization is attempting to map actual land use from a combination of satellite imagery, aerial photography and field data collection. TCPO recognizes that the lack of land use maps of major cities is a serious deficiency which they hope to rectify.

Without updated maps of actual and permitted land use and development, the task of enforcing planning policies and building regulations becomes very difficult.

5.5 CURRENT ACTIVITY IN LAND INFORMATION MANAGEMENT RELEVANT TO URBAN LAND MARKETS

Until very recently, awareness of the potential benefits of systematic land information management has been almost entirely limited to research and teaching institutes and technical departments of central government. This interest is now being translated into plans for operational trials.

Interested parties are to be found in almost every central government ministry but no department has been given the responsibility and authority to coordinate LIM activity.

Central Agency	Active Department
Ministry of Urban Development	Town & Country Planning Organization
Ministry of Rural Development	--
Ministry of Science & Technology	Survey of India
Ministry of Space	National Remote Sensing Agency Indian Institute of Remote Sensing
Planning Commission	National Informatics Centre

78

There are no operational land information systems as yet but the following trials, experiments and conceptual plans have some relevance to the land market:

- Trials at Gwalior, Madhya Pradesh by the Survey of India to use photomaps or photogrammetric mapping to replace plane tabling for cadastral survey plans.
- Mapping by the Survey of India of a number of towns in Punjab at 1:2,500 scale for urban planning.
- Establishment of two digital mapping systems at Dehra Dun by the Survey of India (Modern Cartography Centre, Digital Mapping Centre). MCC is now in production.
- Installation of an image analyzer for interpretation of satellite imagery, Survey of India. (Another system is installed at the National Remote Sensing Agency in Hyderabad.)
- Computerized Rural Information Systems Project (CRISP) being designed by the National Informatics Centre, Delhi. This is a non-graphic database system for District Rural Development Agencies to store land records (owner's names, parcel numbers, father's name, land quality, boundary coordinates) using a PC 386 with 300 MB disk, Xenix and FoxBase III.
- GIST: This is an ambitious project being planned by NIC for urban utility mapping which would contain the following data sets:
 - Geodetic control
 - Aerial photography
 - Photogrammetric mapping at 1:1,000 or 1:2,000 scale
 - Collection of utility records (sewers, water supply, electricity, etc.)
 - Field completion and data collection
 - Editing and quality assurance
 - Data management
 - Retrieval, queries, presentation of results
 - Continuous update

NIC is investigating user needs and methodologies and is in discussions with the National Remote Sensing Agency, the Survey of India, local authorities and utilities to assess how such a massive task could be implemented.

Delhi has already been selected for trials, and two pilot areas, one in the old city and one of planned development, have been chosen. Funding has yet to be arranged.

Similar utility mapping in the Middle East has cost up to US\$10,000 per square kilometer in densely populated cities.

- Calcutta Metropolitan Development Authority is understood to be planning large-scale urban mapping for similar purposes.
- The Town and Country Planning Organization of the Ministry of Urban Development is currently developing a methodology for land use mapping in Delhi.

TCPO is cooperating with NIC and the National Remote Sensing Agency to develop land information systems for planning purposes making use of modern technology in computer databases and remote sensing.

29'

They have already started to prepare land use maps combined with spatially related land use statistics for the Delhi area. Landsat TM imagery taken around 1988 has been interpreted by NRSA to produce rural land use mapping which includes soils, slope analysis, hydrology, and land suitability. Ground truth checking and completion is now in progress. This will be followed by urban land use mapping, probably using a combination of SPOT satellite imagery, aerial photography, field checking and completion. Purchase of an ARC/INFO GIS has been approved.

The methodology developed will then be made available to state planning departments for use in other cities. Trials are also in progress in Anand, Gujrat, and in Tamil Nadu. They have identified a priority to map about 500 towns.

There appears to be a real danger that these projects will become centralized, technology-based, and data-driven instead of local, user-driven, and functionally-based. As the need for land information is primarily at local and state levels, it will be essential to determine real user needs at these levels and provide training and resources for decentralized implementation of LIM.

5.6 PRIOR CONDITIONS AND CONSTRAINTS FOR A LOCAL LAND INFORMATION SYSTEM

The technological benefits of LIS can be realized only if the necessary institutional framework exists or can be built concurrently.

Directors, users and producers of LIS all have to be trained to exploit the benefits of improved information, otherwise there will be little return on the investment.

LIS facilitates the collection of data from many sources and the distribution of selected information to different users with different problems to solve, only if the responsibilities and requirements of each participating organization are clearly defined and there is a will to cooperate in the exchange of information.

Security restrictions currently inhibit the distribution of certain types of maps and aerial photographs. These policies must be clarified in order to design a system to produce results which can be freely circulated to all who need the information and will raise their productivity as a result.

No single authority has the overall responsibility for collecting and distributing land information in urban areas. An appropriate authority must be appointed to take this responsibility and define the role of supporting agencies. It will require considerable human resources, capital investment and operating budgets to carry out the task effectively.

5.7 OUTLINE STRATEGY FOR LOCAL LIS

Land information systems range from very large systems gathering every type of urban land data and distributing it to many users at networked terminals, to single

stand-alone PC microcomputers with standard software packages for graphics and database management.

NIC, TCPO and Survey of India seem to be adopting the large centralized systems approach for urban land use and utility mapping. Previous USAID studies ("India's Urban Challenge", February 1989 and "Urban Land and Infrastructure", March 1989) have proposed low-cost PC based systems as appropriate for local land management of small cities, and have suggested a technical assistance program.

The objective of this program should not be restricted to supplying the system hardware and software and know-how to set up an operational land information system. Rather it should seek to strengthen the institutional framework of local authorities responsible for land administration in a selected small city, by studying user needs in depth, defining each of the administrative functions which has to be performed and by which department, and using the introduction of modest computer technology as a facilitator to stimulate simplification and greater efficiency of the more important functions of land administration. Procurement and installation of the computer system would follow after several preliminary in-depth investigations:

- **Site Selection.** Careful selection of a small city (50-100,000 population) in a convenient location without security problems (to facilitate release of maps and air photos), and in a reasonably flat area where photomosaics could be used as a map substitute without introducing serious distortions.
- **User Needs Study.** An in-depth user needs study to identify the essential types of information needed for efficient operation of the land market.
- **Functional Linkages and Responsibilities.** A study of the functions performed by each of the participants in the land market (owner, developer and officials) and the functional linkages and flow of information between them.
- **Institutional Problems.** Assessment of the institutional problems to be overcome in order to introduce a simplified division of functional responsibilities which would exploit the benefits of computerized land information.
- **Data Collection.** Developing the methodology for data collection. Satellite imagery or the Survey of India 1:25,000 scale map would not provide adequate ground resolution, and photogrammetric mapping at 1:1,000 scale would not be affordable within the financial constraints of the project. The acquisition of new aerial photography at around 1:10,000 scale for production of a semi-controlled photomosaic enlarged to 1:2,000 scale is suggested as a reasonable compromise between desirable technical standards and affordable cost. Similarly, simple techniques would be selected for collecting other essential information such as actual land use and trunk utilities by a combination of photo-interpretation and field data collection. The human resources, training, equipment and program of work would be assessed and costed.
- **Fiscal and Legal Cadastres.** Investigation of ways of integrating the fiscal cadastre (cadastral maps, parcel numbers, records of owners and land valuations) with a view to simplifying procedures, reducing duplication of effort, ensuring compatibility of records, and encouraging land owners to register all land transactions.

Tentative suggestions have been made in the GOI's draft Housing Policy to consider replacing registration of deeds by registration of title. This would involve major legislation, increase costs and search times, and destroy long established procedures that can provide very similar standards of security if the existing fiscal and legal records are merged, cross referenced and brought up-to-date.

Photomosaics with a 1:2,000 scale would not be adequate for defining property boundaries in densely-developed urban areas but can identify the location and approximate size of each land parcel. If the existing cadastral maps do not exist or prove unsuitable for updating, it will be necessary to prepare a longer term strategy for photogrammetric mapping of urban parcel boundaries.

- **Partially Computerized Land Information System.** Functional design, system procurement, installation, data base design, and operation.
- **Training.** An ongoing training program will be required for directors, users, data collectors and system operators.
- **Publicity.** A publicity program including public meetings, press articles, etc., will be needed just before systematic data collection begins, area by area, to explain the purpose and benefits of the project and to solicit public cooperation.

The guidelines proposed above would constitute a much longer-term program of technical assistance and state/local government commitment than envisaged in the previous USAID studies. The project outlined above would have a direct impact on the efficiency of local land administration, as opposed to a merely technological approach to setting up a land information system.

6.0 OTHER CONSTRAINTS AND ISSUES

6.1 AVAILABILITY OF INFRASTRUCTURE

The lack of main infrastructure (e.g. roads, water supply systems, sewerage systems, stormwater drainage, and electricity distribution) is a very important constraint on urban land delivery. This is mainly a financial problem. Only the large Development Authorities and a handful of large real estate companies have the ability to mobilize resources for main infrastructure works. Since these works are normally not provided by municipalities, they are constructed on a project basis, and the costs, which can be considerable (e.g. for water supply wells, pumps, and storage tanks) are either passed on in the form of higher prices or absorbed as subsidies.

Two years ago, the GOI established a new program in HUDCO to provide loans to local bodies for urban infrastructure. This was in response to a recommendation of the NCU. The new loan program has grown rapidly. So far, its operation, impact, and potential have not been independently assessed.

Central and state funds for urban infrastructure will not be enough to meet the needs. It is necessary for municipalities to improve their revenue collection to generate additional resources for urban infrastructure. A major effort in this direction has yet to be undertaken.

The report "India's Urban Challenge: Trends and Implications prepared for USAID (Urban Institute, February 1989), lists the following constraints on urban infrastructure delivery:

- Inability of municipal agencies to provide sufficient infrastructure.
- Lack of coordination between agencies charged with capital improvements and local bodies responsible for maintenance.
- Pricing policies which do not reflect real costs and inadequate collection procedures.
- Linkage of water and sewer rates to artificially low property tax assessments.

6.2 SKILLS AND MANPOWER

There is a general deficiency of skills and trained manpower at the state and local levels in various areas related to land management and regulation. This problem hampers all governmental planning, control, and development efforts and will take a long time to resolve. While training programs can improve the situation, improving public sector performance will also depend on other measures to attract and retain qualified staff and to hold staff accountable for their performance.

6.3 NEGATIVE EXPERIENCES WITH SITES AND SERVICES

One might have expected, in accordance with the central government's recent emphasis on affordable solutions for lower-income households and the role of the public sector as "facilitator", that state housing agencies would have started implementing sites and services programs on a wide scale. This has not happened. After a few experiments in some states, the sites and services approach has been largely discredited. An analysis

of the reasons and possible remedies is beyond the scope of the present report. USAID might wish to pursue this issue further as an aspect of the land delivery system, given that government housing agencies will continue to play a major role in direct implementation of programs for lower-income people. Specific problems that seem to merit investigation include:

- The use of inappropriately located sites, often cheaper lands far from city centers. Such sites have been chosen in the belief that only "bulk" lands can be used for such projects due to cost factors.
- Difficulties of allocating plots to the intended beneficiaries, or at least to those who would settle on the plots rather than sell them.
- Failure to provide financing for house construction.
- A widespread assumption that land prices are too high for lower-income groups to afford "legitimate" sites and services.

6.4 MANAGEMENT OF GOVERNMENT-OWNED LAND

The NCU report of 1988 strongly criticizes the government for not managing its own land resources properly. The NCU gives special attention to the prevalence of large, under-utilized prime tracts of public land in central city areas. These are frequently occupied by obsolete government enterprises. There is no mechanism to bring these tracts of land to more productive use, and inertia is maintained by the "landlordism" of individual agencies that control the parcels. Our field work has not uncovered data on the extent of this problem. Many observers believe that the government is the predominant owner of vacant land in major cities.

This is partly a land information problem also. The NCU report says, and our limited discussions substantiate, that inventories of government lands in major cities do not exist.

6.5 ENVIRONMENTAL REGULATIONS

At the national level, and in the states visited by the consultants (Gujarat and Uttar Pradesh), there are no environmental standards or controls applied to urban development. Thus, environmental considerations do not at this time have an impact on the availability of urban land.

A National Environmental Protection Act was passed in 1986 with very general provisions. It gives authority to the Ministry of Environment to establish environmental standards, but this has not yet been done. Presently the only regulations being enforced are for control of industrial wastes and pollution.

Even though there are no environmental controls, there are significant environmental problems in many of India's cities. Air pollution, sewage and solid waste disposal are the most difficult. There are limited or no sewage treatment facilities in most cities, with effluent being discharged directly into rivers or streams. Facilities or sites for the disposal of solid wastes is another pressing need.

While the imposition of environmental controls on urban development may constrain the availability of urban land, this cost to society needs to be weighed against the cost of continued environmental deterioration and its negative effects on public health.

A separate study on environmental regulations as they pertain to urban land and shelter development is being commissioned by AID.

6.6 LAND TRANSFER TAXES AND FEES

These do not appear to pose a constraint on the private buying and selling of land. The main land transfer levy is the stamp duty, which is a percentage of the declared land price and varies from state to state. In some states, it is as high as 14 percent. It is widely believed (and stated in the NCU report, Vol.II, 6.3.2) that recorded transaction prices are substantially understated in order to reduced transaction taxes and fees and "for conversion of black money into white". In preparing this report, no studies were found that substantiate this. The main effect of understated land transaction prices is to cause problems with land valuation procedures (such as those used in some states for land acquisition) that depend on registered land price records.

7.0 OVERVIEW AND RANKING OF CONSTRAINTS

Based on our limited assessment, the constraints on efficient functioning of urban land markets may be ranked as follows, in order of importance:

Very Important:

1. Cumbersome land regulation procedures and rigid standards.

The relationship between government and private developers is largely adversarial. If government is to take on the role of facilitator in urban development, this relationship will need to be changed to one of cooperation and support. Despite the recognition of the shortcomings of the land regulation system, proposals to improve the situation tend to be for modifications rather than relaxation of regulations. Inefficient and arbitrary administration of development control procedures is the main problem in the system. The main constraints are delays, inconsistent application of standards, opportunities for corruption, and high risk for developers due to uncertainty of obtaining timely approvals. These problems result in a reduced supply of formally developed land and a larger amount of informal and non-conforming development with attendant financial and social costs. It is safe to assume that these types of constraints, arising mainly out of deep-seated limitations of the public administration system, will take a long time to resolve. One fruitful avenue of reform is to introduce mechanisms that are more "automatic" and less discretionary.

Planning controls retard the delivery of land for urban use through delays in the master planning process and lengthy reviews for conversion of land from agricultural to urban use.

Progress is being made in the adoption of more affordable standards for land development. A number of national organizations (HUDCO, NHB) have adopted special standards for developments for lower-income households, but these standards have not yet been adopted widely by state and local authorities. The revised standards usually apply to government shelter schemes. Private developers are still generally not permitted to use the more efficient land use standards.

2. Non-facilitation of private land developers.

Individual owner-builders and petty entrepreneurs dominate the urban land development market at present, especially for residential development. A policy environment favorable to the operation of private sector land development companies does not exist. The elements of such a policy have not been explored in this report (see the report on Public-Private Partnerships), but the basic elements would include:

- The ability to assemble parcels of land big enough for shelter schemes. This is currently prohibited by ULCRA.
- Access to financing for land purchase and construction (beyond the scope of this report).
- Simplification of permit procedures (see above).
- More flexible norms and standards (see above).

3. Lack of financial resources for main infrastructure to service land.

Two years ago, the GOI established a new program within HUDCO to loan money to local bodies for urban infrastructure. This program has grown rapidly to the point where it equals the volume of HUDCO's housing finance program. This is a significant contribution to improving the supply of urban infrastructure for the provision of serviced land. In addition to this, efforts are needed to improve municipal revenue mobilization for urban infrastructure.

Medium to High Importance:

4. Urban Land Ceiling and Regulation Act.

ULCRA is not at the top of the list of constraints because land owners and developers have found many ways, legal or not, to circumvent its provisions restricting land ownership and transfer. ULCRA will not be repealed in the foreseeable future. The amendments to ULCRA currently being considered by GOI would not make ULCRA less of a constraint on the urban land market. Two modest relaxation measures could still be considered: (1) The number of cities covered by the Act could be reduced and (2) Temporary exemptions could be granted to developers who are assembling land for shelter subdivisions. Section 21 of the Act permitted exemptions for lower-income housing schemes, but such exemptions had to be requested within 1,139 days from the commencement of the Act.

Medium Importance:

5. Land Acquisition Act and procedures.

Making public land acquisition more efficient, especially by providing adequate and timely compensation, would help reduce distortions in the land market caused by owners trying to evade expropriation and would increase the rate at which land is supplied for low-income housing through the public sector. The GOI is initiating a process of consultation which is expected to produce recommendations for amending the Land Acquisition Act. This process will probably take at least two years.

6. Inefficient management of government-owned land.

As mentioned earlier, many observers believe that the government (central, state, and local) is the main owner of vacant or underused land in urban areas. In some cities where a lot of government land is tied up in obsolete or inefficient uses, the utilization of these lands for lower-income housing might reduce demand pressure on the overall land supply. The first steps would be to prepare an inventory of government land at the city level and to organize a mechanism to monitor and update it. The field work for this report did not reveal any efforts in this area.

Low to Medium Importance:

7. Inadequate land information and registration systems.

Private developers and local-level government officials interviewed for this report did not cite land information as a major constraint on land delivery. It appears that the basic information needed by land sellers and buyers, real estate developers, and government land development agencies (i.e., prices, ownership, and regulations) is available, although not always easily. Land information in itself seems to be less of a problem for land delivery than the other major constraints reviewed in this report.

Improvements in land information are certainly needed, but they should be demand driven, otherwise they will not be productive. A prerequisite for investments in LIS is that the users of land information should feel the need for better quality data and better access to it as a means of making their operations more efficient.

Very little is known about how private land buyers, sellers, and developers in India obtain land information. An assessment of the private sector's land information needs should be done to determine, among other things, the extent to which these needs can be met through private mechanisms versus governmental sources.

Government land management can undoubtedly be improved through better land information systems. The governmental functions that are most in need of better land information are urban land taxation, infrastructure service delivery, and land use planning.

Several central government organizations are undertaking LIS initiatives. These are all large-scale, technology-oriented systems. The team that prepared this report did not find any programs to introduce local-level, user-driven systems.

With the exception of local-level land information systems, the constraints reviewed here are being actively discussed and analyzed at the central and state government levels. Solutions, as discussed in the earlier chapters of this report, are being considered, subject to political as well as organizational limitations.

Two of the most important constraints on efficient urban land delivery—the stifling regulatory system and the lack of finance for urban infrastructure—are generally recognized as such. However, the lack of an enabling environment for private sector developers is not widely seen as a constraint, as the business sector tends to be viewed—especially at the state and local levels of government—as more of a negative than a positive factor in the land market.

Incremental reforms are likely in ULCRA and land acquisition, but no major changes of policy appear to be in the offing.

48

ANNEXES

ANNEX 1 CITIES SUBJECT TO URBAN LAND CEILING AND REGULATION ACT				
State	Category A Ceiling 500 m² Periphery 8 km	Category B Ceiling 1,000 m² Periphery 5 km	Category C Ceiling 1,500 m² Periphery 5 km	Category D Ceiling 2,000 m² Periphery 1 km
Andhra Pradesh		Hyderabad	Visakhapatnam Vijaywada	Guntur Warangal
Assam				Gauhati
Bihar			Patna Dhanbad Jamshedpur	Ranchi
Gujarat		Ahmedabad	Rajkot Vadodara Surat	Jamnagar Bhavnagar
Karnataka		Bangalore	Mysore Hubli-Dharwar	Mangalore Belgaum
Madhya Pradesh			Gwalior Indore Bhopal Jabalpur	Ujjain Durg-Bhilainagar Raipur
Maharashtra	Greater Bombay	Poona	Ulhasnagar Sholapur Nagpur	Thana Nasik Sangli Kohalpur
Orissa				Cuttack
Punjab			Amritsar Ludhiana	Jullundur
Rajasthan			Jaipur Jodhpur	Bikaner Ajmer Kota
Tamil Nadu	Madras		Salem Coimbatore Madurai Tiruchirapalli	Tirunelveli
Uttar Pradesh		Kanpur	Bareilly Meerut Agra Allahabad Lucknow Varanasi	Moradabad Dehra Dun Gorakhpur Aligarh Saharanpur
West Bengal	Calcutta			Asansol Durgapur
Chandigarh U.T.				Chandigarh
Delhi U.T.	Delhi			
Pondicherry U.T.				Pondicherry
Total Cities	4	5	31	30

Source: Urban Land Ceiling and Regulation Act, Schedule I; Ministry of Urban Development.

Notes: (1) The following States/Union Territories do not have cities large enough to be covered by the Act: Haryana, Himachal Pradesh, Manipur, Meghalaya, Tripura.
(2) ULCRA was not adopted in the states of Jammu and Kashmir, Kerala, or Nagaland.

ANNEX 2**PERSONS INTERVIEWED FOR THIS REPORT****New Delhi:**

Mr. N. Bhattacharjee
Program Specialist (Housing)
USAID/India

Mr. C. Billand
Program Specialist (Housing)
USAID/India

Mr. Robert Beckman
Head, Office of
Technology Development & Enterprise
USAID/India

Dr. N. Vijayaditya
Director Technical
National Informatics Centre

Mr. Y.K. Garg
General Manager and Adviser Technology
National Housing Bank

Mr. D.S. Meshram
Chief Planner
Town and Country Planning Organization

Dr. Om Prakash Mathur
Director
National Institute of Urban Affairs

Mr. Brij Mohan Lal
Director of Survey (Air)
Survey of India

Ms. Banashree C. Mitra
Researcher and Faculty Member
Human Settlements Management Institute

Dr. Kiran Wadhva
Researcher and Faculty Member
Human Settlements Management Institute

Mr. G.R. Viswanathan
Executive Director
Urban Infrastructure Finance Wing
Housing and Urban Development Corporation (HUDCO)

Mr. Mulkh Raj
Director Finance
Housing and Urban Development Corporation (HUDCO)

Mr. Anoop Aggarwal
Executive Director (Law)
Housing and Urban Development Corporation (HUDCO)

Mr. G.R. Gogia
Executive Director
Ansal Properties and Industries Ltd.

Ms. Neelima Risbud
Assistant Professor of Housing
School of Planning and Architecture

Mr. K. Dharmarajan
Joint Secretary
Ministry of Urban Development

Dr. Abhijit Dhatta
Professor
Indian Institute of Public Administration

Ahmedabad:

Dr. Dinesh B. Mehta
Professor
School of Planning

Mr. C.S. Sharma
Deputy Municipal Commissioner
Ahmedabad Municipal Corporation

Mr. A. Prasad
Chairman
Ahmedabad Urban Development Authority

Mr. Sahu
Deputy Collector
Revenue Office

52

Mr. Jala
District Inspector of Land Records

Mr. R.J. Vyas
Commissioner
Gujarat Housing Board

Lucknow:

Mr. S.K. Garg
Chairman
ELDECO Housing & Finance Ltd.

Mr. Arun Pachauri
Chief Architect Planner
Uttar Pradesh Housing & Development Board

Mr. Lalit Kishore Mehrotra
Chief Engineer
Lucknow Development Authority

Mr. Ved Mittal
Chief Architect Planner
Agra Development Authority

Mr. A.B. Singh
Board of Revenue

Mr. Dinesh Rai
Vice Chairman, Lucknow Development Authority
Chief Executive, Lucknow Corporation

Mr. Anil Garg
Chief of Development Permissions
Lucknow Development Authority

Dehra Dun:

Lt. Gen. G.C. Charcha
Surveyor General
Survey of India

Mr. Gosvain
Cartography Unit
Survey of India

Professor P. Misra
Head, Human Settlements Analysis Branch
Indian Institute for Remote Sensing

53

REFERENCES

- Billand, Charles J., PADCO, "Delhi Case Study: Formal Serviced Land Development", prepared for USAID, April 1990.
- Government of India, "Housing Policy (Draft)", Ministry of Urban Development, May 1990.
- Government of India, "Land Acquisition Act, 1894" (together with State Amendments and Short Notes), published by Eastern Book Company, 1985.
- Government of India, "Urban Land Ceiling and Regulation Act, 1976" (along with Rules, 1976 and Notifications), published by Delhi Law House.
- Holstein, Lynn, "Land Information Management in Support of Urban Development in Developing Countries: Requirements, Issues and Options", World Bank, Policy, Planning and Research Staff, Infrastructure and Urban Development Department, Discussion Paper, June 25, 1990.
- Kapoor, R.M., "Land Management Issues in Built-Up Cities", Times Foundation, Calcutta [undated].
- McAuslan, Patrick, "Land Law, Tenure and Registration: Issues and Options", paper prepared for Urban Land Management Seminar, World Bank, Annapolis, Maryland, December 1989.
- Mehta, Meera and Dinesh Mehta, "Housing Finance Systems in Metropolitan Areas of India", School of Planning, Ahmedabad, Prepared for USAID, October 1989.
- Misra, P., "Application of Remote Sensing in Analyzing Settlement Structure: Metropolitan Regions", Journal of the India Society of Remote Sensing, 17, No.3, September 1989.
- Misra, P., "Implications of Recommendations of Commission on Urbanization--Support for Land and Urban Information by Remote Sensing Technology", Human Settlements Analysis Group, Indian Institute of Remote Sensing, Dehra Dun, 1988.
- Mitra, Banashree, "Land Supply for the Urban Poor: Rationale for Institutional Intervention (draft)", prepared for the Seminar on Land for Housing the Urban Poor, Bangkok, January 22-26, 1990.
- Mulkh Raj and Kiran Wadhva, "The Distributional Aspects of Urban Land", paper presented at the Indo-French Seminar on Urban Planning and Housing, HUDCO, New Delhi, 15-18 January 1990.

National Commission on Urbanization, "Report", Vols.I-V, August 1988.

Risbud, Neelima, "Residential Prices in Delhi: Implications for Policy", in AIDHA Journal, Vol.90/1, pp.17-28.

Shobhana V., "Review of Sites and Services Approach: A Case Study of Bhopal", Human Settlements Management Institute, Indian Human Settlements Programme, 1988.

Singh, P.P. (Maj.) and Dr. A.K. Pujari, "Land Information System: An Experimental Model for Indian Municipalities/Corporations", Survey of India, Dehra Dun, paper prepared for All India Cadastral Surveys Seminar, September 1985.

Urban Institute, "India's Urban Challenge: Trends and Implications", prepared for USAID, February 1989.

Urban Institute, "Urban Land and Infrastructure: Project Opportunities for AID in India", prepared for USAID, March 1989.

USAID New Delhi, "An Urban/Shelter Strategy for India: 1. Urban India Today", January 1989.

USAID New Delhi and RHUDO/Asia, "India Urban Strategy Statement", August 1989.

Wadhva, Kiran, "An Evaluation of Urban Land Ceiling Act (A Case Study of Ahmedabad)", in India's Urban Land Policy and Development Finance, edited by R.C. Sharma, Seema Publications, New Delhi, 1988.

Wadhva, Kiran, "Role of Private Sector in Urban Housing--Case Study of Ahmedabad", Human Settlements Management Institute, Indian Human Settlements Programme, 1989.

World Bank, "India Urban Land Management Study", Report 5984-IN, January 1986.

55+