1

Why Land Matters.

What is our basic understanding about LAND markets, land policies, land management?
Land is a capital good!

It can be bought and sold.

Value (price) of land derives from the value of its use (residential, industrial, commercial, public, agricultural).

Market value (price of land) derives from its location in relation to accessibility and availability of infrastructure & services (comparative advantages).
What is the importance of land?
What are the major Inputs to Housing?

- Labour
- Land
- Building Material
- Infrastructure
- Capital

Regulatory and Institutional Frameworks
<table>
<thead>
<tr>
<th>Housing</th>
<th>Land</th>
<th>Infrastructure</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOCATION</td>
<td>WATER, ELECTRICITY, SEWERAGE, DRAINAGE, ROADS</td>
<td>EMPLOYMENT OPPORTUNITIES, INCOME OPPORTUNITIES, COMMERCIAL INCOME GENERATION</td>
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<tr>
<td></td>
<td>VALUE</td>
<td>COMMUNITY SERVICES, TRANSPORTATION</td>
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<tr>
<td></td>
<td>ACCESSIBILITY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LEGAL STATUS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Housing involves social welfare and reflects rise in the social & economic status.
The Context of Housing Policy

Affected by availability of:
- land
- Infrastructure
- Building Materials - BM
- Organisation Building Industry
- Skilled & Productive Labour
- Self-reliance BM production

Affected by:
- Demographic conditions
- Rate of urbanisation
- New household formation
- Property rights & legal basis
- Housing Finance
- Fiscal Policies
- Subsidies
- Macro-economic conditions

SUPPLY

HOUSING AFFORDABILITY
"Prices"

DEMAND

OUTCOMES
LAND: input to housing & urban development

Increasing prices not leading to increased supply due to common market speculation for high profits resulting in vacancy.

Supply is fixed, inelastic but land-use expandable.

Land is immovable and inflexible: each parcel is unique.

Total supply is fixed then increasing demand increases prices. This may produce inflationary pressure on prices.

Essential for human activities

Rights attached to land is called “TENURE” that expresses ownership, control and use.

TENURE forms directly affect the urban economy via mortgages, tax revenue, market transactions.

Social, economic and political values affect TENURE systems.
Land:

3

What are the most important attributes attached to land?
Land has several attributes:
Different forms of Land Tenure affecting urban growth patterns!

- Exclusive rights of use and disposition of land: Roman law
- No well-defined rights: Tribal customs, Customary practices, Squatters
- Islamic Waqf: non-alienation, limited use

Legal forms: freehold __________________ leasehold

Security of Tenure
THE COMPLEXITY OF LAND TENURE

Land Tenure Systems

STATUTORY SYSTEMS

CUSTOMARY SYSTEMS:

INFORMAL SYSTEMS OF TENURE
Land Markets:

5

How is the land price formation?
Value / Rent / $  

Distance from city centre

Retail  
Distance from centre

Industry  
Distance from centre

Family housing  
Distance from centre

Bid Rent Theory, Richard M. Hurd, 1996.
Land Value

• Agriculture Case
  – Productivity
  – Access to Market (transportation savings)

• Urban Case
  – Site characteristics
  – Access to jobs (transportation savings)

Source: Jim Brown, LILP, 2005
Bid Rent Curves (2 residential uses)

$A = \text{Single family}$

$B = \text{Multiple family}$

$Source: \text{Jim Brown, LILP, 2005}$
Bid Rent Curves (Agriculture and residential uses)

Source: Jim Brown, LILP, 2005
Bid Rent Curves (residential and commercial uses)

$\text{Distance from center}$

$C = \text{Commercial}$

$R = \text{Residential}$

Source: Jim Brown, LILP, 2005
Multiple Rent gradients
The demand is for the use that can be made of the land.

Use (possible/expected) determines the price of the land.
General Pattern of land uses

- Over time bid rent curves shift because of:
  1. Improvements in infrastructure (especially transportation)
  2. Population Growth
  3. Income Growth
  4. Changes in production technology

Source: Jim Brown, LILP, 2005
Summary Points

• Land value determined by site characteristics and vocational advantages

• Land use and land price determined by highest bidder

Source: Jim Brown, LILP, 2005
Land Markets:

6

Is Land Use determinant to land prices?
Doctrine of the Highest and Best Use of Land

Source: Martim Smolka, 2005

The highest values (land prices/rents) result from the bidder (individual agents or firms) that may give the best use (extract most utility/profit) to a given land location/parcel.

Extended to the dynamic context highest refers to the maximization of the net present value derived from the property and best refers to its potential (future) uses.

For land appraisals H&B refers to the maximization of net present value derived from the property. The value of a property is based on its potential uses. (Roddewig and Papke 1991, pp. 48)
Best and Highest Use

In a reasonably competitive, free, etc. market, land will be priced at the highest maximum possible among the existing/known alternatives.

Source: Martim Smolka, 2005
Derived Demand

Source: Martim Smolka, 2005

- The demand for land is derived from the demand for housing.
- There is no demand for land – the demand is for the use that can be made of the land.
- Use (possible/expected) determines the price of the land.
- Because the price of housing is high, the price of land is high, and not the reverse!
Derived Demand – land price: reached as a result

Demand for housing = 15 = 100 – (42+17+16+10)

Value of sale of the building (homes) = 100

Construction costs = 42

Administrative, marketing, financial costs = 17

“Average” profit = 16

Taxes, levies, cost of development, etc. = 10

Price of the land = 15

Source: Martim Smolka, 2005
Land Components

- Cost of building
- Average profit from building investment
- Cost of urbanization
- Average profit from urbanization
- Land tax
- Land price increment from expectation
- Current use price

price as manifested in the market

From: Carlos Morales-Schechinger, LILP 2004
Impact on land prices

Government Policies:

- Zoning & Planning Ordinances,
- building technologies to decrease construction costs,
- lower standards,
- tax reduction,
- eviction policies,
- housing subsidies

residue becomes the land price
Land Use:

7

How does it affect city form and urban structures?
LAND MARKETS AND RESIDENTIAL LOCATION

Neoclassic Interpretation

Monocentric City

Land market: against individual choices to pay rent

Preference: accessibility
Space (quantity)
Externality

Source: Pedro Abramo, 2005.
Local Economic and Social Conditions affect City Size and Shape

Source: Jim Brown, LILP, 2005
Effects of City Density

Source: Jim Brown, LILP, 2005
Jakarta: 14,908,000 people
2,942 km²

Moscow: 8,543,000 people
470 km²

Shanghai: 7,397,000 people
244 km²

London: 6,626,000 people
1,062 km²

Paris: 7,877,000 people
893 km²

Berlin: 4,212,000 people
1,176 km²

New York: 10,752,000 people
2,674 km²
Figure 3: The built-up area of Atlanta and Barcelona at the same scale. Knaap, 2005
Atlanta versus Barcelona

• Because of the difference of density, Atlanta’s built-up area is 28 time larger than Barcelona’s.

• As a consequence, the metro of Barcelona is only 99 km long and its stations are within walking distance to 60% of the population.

• By contrast, to provide the same service to the same number of people, Atlanta would have to develop 3400 km of metro track!

Source: Knaap, 2005
Land Policy:

8

What do we need to know to be able to intervene in land markets?
The Need for Government Intervention

Variety of Objectives of LAND POLICIES

Equity

Efficiency

1. Supply of serviced plots
2. Harmonisation of urban spatial structures
3. Equity
4. Distribute population
5. Distribute activities
6. Environmental control
7. Address Market disfunction

The question is how to reconcile these objectives and the instruments of land management?
URBAN LAND POLICY: Government objectives

To safeguard urban & natural environments
To gear infrastructure investments with development
To maintain and enhance property values
To broaden access to land by low-income households & halt speculation

OBJECTIVES

Policy Tools
- Master plans
- Land use zoning ordinances
- Land parcelling regulations
- Building codes
- Land management tools: land sharing; land banking; land readjustment; TDR-transfer of development rights; land registration.

Institutions
- Land Development Agencies
- Land Registration Offices
- Land Cadastre
- Land Banking Units
- Land Management & Control Agency

Sites & Services;
Mechanisms to access land

Do we have the right understanding of the land delivery processes?
LAND DELIVERY SYSTEMS

PUBLIC
(customary allocation; government regulated systems of supply; sites and services and upgrading)

PRIVATE
(real estate development; supply of privately owned supplied)

COMMERCIAL:
(market oriented subdivisions and real estate development projects)

NON-COMMERCIAL:
(supply of land at subsidised prices; target group oriented)

LEGAL:
according to current planning norms and approval procedures

ILLEGAL:
subdivisions and squatting not according to planning norms and approval procedures
The Land Development Process

**STATES**

- Farmland
- Vacant Tract
- Serviced Tract
- Subdivided Lots
- Serviced Lots
- Dwelling Units

**TRANSITION EVENTS**

- Land Sale
- Macro infrastructure services
- Subdivision
- Micro infrastructure services
- House construction

FORMAL / PLANNED LAND DEVELOPMENT PROCESS

Based on Paul Baross

Final Price/Value paid by final occupants

Private developers profiting Land owners benefiting

Building Construction

Recapture land price increase by taxes; final sale to occupants

Supply Secondary Infrastructure Services

Planning Design

Detailed designs

Land Parcelling; selling out large parcels for development (Priv & Pub)

Government decides & publicises; values increase; speculation starts

Infrastructure investment

Government investing in Infrastructure

Land Consolidation

Land Zoning

Trunk Infrastructure Provision

Structure Plan Land acquisition Land banking

Fringe Land Rural Land Vacant Land

OCCUPANCY

OCCUPANCY

Private developers profiting Land owners benefiting

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Fringe Land Rural Land Vacant Land

Final Price/Value paid by final occupants
FORMAL / PLANNED LAND DEVELOPMENT PROCESS

Based on Paul Baross

I. Land Assembling

II. Planning

III. Infrastructure Provision

IV. Construction

V. Occupation

OCCUPANCY

Government intervention

1 2 3 4 5 6 7 8 9

Land Zoning

Fringe Land
Rural Land
Vacant Land

Trunk Infrastructure Provision

Land Consolidation

Planning Design

Supply Infrastructure Services

Building Construction

Individual & Private Benefit

OCCUPANCY

I. Land Assembling

II. Planning

III. Infrastructure Provision

IV. Construction

V. Occupation

Based on Paul Baross
INFORMAL / UNPLANNED LAND DEVELOPMENT PROCESS

Based on Paul Baross

Autonomous development

Sites without services

Informal land delivery

VACANT LAND

Commercial Land Subdivision or Land Invasion

Building Temporary Occupancy

Densification OBIP

Trunk Infrastructure Provision

On-site Infrastructure Supply

Individual connections

People starts building, pressure, mobilisation, recognition, services

Government Intervention

Regularisation Legalisation

Planning Design
INFORMAL / UNPLANNED LAND DEVELOPMENT PROCESS

I. Land Invasion/land holding
II. Building & Densification
III. Infrastructure Provision
IV. Planning
V. Legalisation

Based on Paul Baross

Autonomous development

Sites without services

VACANT LAND
Commercial Land Subdivision or Land Invasion
Building Temporary Occupancy
Trunk Infrastructure Provision
On-site Infrastructure Supply
Planning Design
Regularisation Legalisation

Government Intervention
The predominant development model is INFORMAL!

- **INFORMAL URBANIZATION**
  1. OCCUPATION
  2. CONSTRUCTION / consolidation
  3. IMPLEMENTATION OF SERVICES AND BASIC INFRASTRUCTURE
  4. PLANNING

- **FORMAL URBANIZATION**
  1. PLANNING
  2. IMPLEMENTATION OF SERVICES AND INFRASTRUCTURE
  3. CONSTRUCTION
  4. OCCUPATION
1. Land Assembling
2. Planning
3. Infrastructure Provision
4. Construction
5. Occupation

FORMAL LAND DEVELOPMENT
Legal Regime clear from start

INFORMAL LAND DEVELOPMENT

5. Legalisation & Regularisation
4. Planning
3. Infrastructure Provision
2. Building & Densification
1. Land Invasion / land holding
Parcelling

6. Legal Regime to be Defined

Formal x Informal
Access to Land:

10

How can we intervene in the land question to safeguard community & collective interests?
Moments of Transition versus Instruments for Intervention

- Transition from rural to Urban use
- Provision of Infrastructure
- Building/Construction activities
- Change in Land Use, Tenancy, Redevelopment, Improvement
Moments of Transition versus Instruments for Intervention

Transition from rural to Urban use

- Advanced land Acquisition/ Land banking
- Acquisition development rights
- Land appropriation laws

Provision of Infrastructure

- Taxation site value
- Taxation capital gain
- Infrastructure development by costrecovery: by sale of plots or by charges to owner/developer or by land readjustment schemes
- Excess acquisition especially along roads
Moments of Transition versus Instruments for Intervention

Building/ Construction activities

- Building fees
- Property taxes
- Non-development taxes
- Land appropriation laws

Change in Land Use, Tenancy, Redevelopment, Improvement

- Betterment taxes
- Property taxes
- Impact of urban renewal schemes
- Impact of land-sharing schemes
- Impact legislation of tenure
MECHANISMS TO RECAPTURE CAPITAL INCREASES

- Direct taxation of capital gain
- Site-value taxation (property tax)
- Betterment taxation (improvements)
- Value Capture
- Advanced acquisition of development rights
- Advanced acquisition of land ownership
- Land banking
- Excess acquisition via road projects

Strong Opposition by Land Owners

REVENUES
Managing Land:

11

What are the information available and how to we put in place a land administration system?
Administrative Practice

- **Discovery**
- **Coverage**
- **Land records**
  - Cadastre = Official property registry
- **Forms**
  - Legal: lists title or ownership of land and buildings
  - Fiscal: contains tax information (valuation, etc)
  - Physical: parcel boundaries and building information
  - Can be integrated into a single set of records
- **Also called assessment, appraisal, ownership, property, real estate and tax maps**
- **Maps and GIS**

Discovery

- Coverage
- Cadastre
- Land records
- Maps
- GIS
- Government inventory
- Self-declaration
- Utilities

Land Records

- **Cadastre = Official property registry**
- **Forms**
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  - Fiscal: contains tax information (valuation, etc)
  - Physical: parcel boundaries and building information
- **Can be integrated into a single set of records**
- **Also called assessment, appraisal, ownership, property, real estate and tax maps**

Urgent Change in the logic of the game!

1. Cadastre & Land Use Decision
2. PLANNING
3. INFRASTRUCTURE
4. CONSTRUCTION
5. OCCUPATION
6. Registration

FORMAL URBANIZATION

INFORMAL URBANIZATION

1. OCCUPATION
2. CONSTRUCTION
3. Formalisation
4. INFRASTRUCTURE
5. PLANNING
6. Cadastre
Managing Land

What are the tools and instruments available for local governments?
Land Use Planning Instruments

Zoning Ordinances: Municipal decrees, laws, norms.

Land Use Norms: Linked to master plans;

Planning Guidelines: Linked to City Planning Ordinances

Land Parcelling Norms: Linked to National norms

Building Permits: Applied city-wide by municipalities

Development Applications: Requests by individuals/firms/developers

Development Permits: Approvals/concessions by municipalities
**Land Management Instruments**

**ADMINISTRATION**
- Land expropriation
- Pre-emption right
- Compulsory Replotting
- Cadastre
- Land Information System-LIS

**MANAGEMENT**
- Land Bank
- Land Pooling
- Land Readjustment
- Land lease
- TRD-Transfer Develop.Rights

**TAXATION**
- Real estate property taxes
- Land transfer duties
- Development charges
- Betterment & servicing charges
Managing Land

What do we learn from experiences?
Rotterdam, 10\textsuperscript{th} May 1940

German Bombardment destroys Rotterdam’s inner city
Rotterdam, 10th May 1940
IMMEDIATE RESPONSE:

• 24 May: expropriation & compulsory land acquisition

• Starts the ‘brainstorming’ on urban planning
ROTTENBAM
STADSSENTRUM
1945-1989

1 Stadscentrum voor 1940/
Innercity before 1940

2 Stadscentrum na bombardement mei 1940/
Innercity after the may 1940 bombardement

3 Stadscentrum 1989/

1 Centrumruit/

3 Waterstad/
The Reconstruction of Rotterdam

1. Control of Land Stock
2. Vision: Plan, Land Use Ordinances & Spatial Planning
3. Inner City Redevelopment Programme
4. Social Housing and Mix Use Developments
5. Municipal Development Agency
6. Citizen Involvement & Public-Private Partnerships
7. Public Space Management & Public Transport
8. Shopkeepers, Stakeholders Participation & Real Estate Development
9. VIBRANT inner city & Economic Development

The cycle illustrates the interconnected aspects of the reconstruction, emphasizing the importance of citizen involvement, public space management, and mixed-use developments in achieving a vibrant inner city.
Rotterdam, after World War II
Transfer of Development Rights - TDR

“the sale of one parcel’s development rights to the owner of another parcel, which allows more development on the second parcel while reducing or preventing development on the original parcel”


Sending and Receiving Areas are subject to density and FAR ceilings

FAR = Floor Area Ratio
Different Ratio in land utilization

Upward Densification

RELATIONSHIPS

Floor Area Ratio - FAR
Plot Occupation Indexes

Different Indexes in Plot Occupation

Horizontal Densification
Urban Management

San Francisco 1916

Densification

San Francisco 1990's

source: Cities then and Now, Antoniou, J MacMillan 1994
LAND RE-ADJUSTMENT

Privately owned undeveloped / ‘unserviced’ land
Market price = $x$

Land Developed / serviced by Municipality

Land returned to original owner
Market price = $x$
A municipal government or other public agency declares privately owned land that is about to be developed as a land readjustment project!

1. Municipality prepares site plan (in co-operation with owner)
2. Municipality assesses market value of raw land
3. Municipality calculates the percentage of land required for physical services: roads, infrastructure, water, sewerage, etc.
4. Municipality deducts from total parcel a percentage of land with sufficient improvement value to recover costs of the services;
5. Municipality returns the remainder of land to original owner.
6. Owner’s land has increased in value because of infrastructure investments
7. Municipality sells its share of the improved land to recover costs of service provision
<table>
<thead>
<tr>
<th>City</th>
<th>Population (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokyo</td>
<td>26.5</td>
</tr>
<tr>
<td>New York</td>
<td>16.3</td>
</tr>
<tr>
<td>São Paulo</td>
<td>16.1</td>
</tr>
<tr>
<td>Mexico City</td>
<td>15.5</td>
</tr>
<tr>
<td>Shanghai</td>
<td>14.7</td>
</tr>
</tbody>
</table>

Conditions to Benefit from Incentives leading to Increase in Development Rights and Densification in the Core Area of Downtown Sao Paulo

Minimum:
3 plots and 1000 m²

Merging plots:
6 plots = gain 60% of area
INVOLVING THE PRIVATE SECTOR

Urban Development Strategies in São Paulo under the PT Administration (1989-1992)

THE URBAN OPERATIONS INSTRUMENTS

PRINCIPLE

Transfer of Development Rights-TDR

Municipality
- Land expropriation tools;
- Monitors negotiation;
- Manages the process;
- Assesses density and requirements and approves all deals; receives financial returns;
- Payments on development gains;
- Negotiations with other owners;
- Investments.

Private property

Owners
- Payments on development gains;
- Negotiations with other owners;
- Investments.
- Property valuation
Land development
Low income housing

Owner’s share = n plots
= original land price

VACANT LAND

TDR = n housing units
for low income families
Curitiba, Brazil
IMÓVEL CADASTRADO COMO UNIDADE DE INTERESSE DE PRESERVAÇÃO

POSSIBILIDADE DE UTILIZAÇÃO DO POTENCIAL CONSTRUTIVO NO MESMO LOTE

POTENCIAL CONSTRUTIVO DO IMÓVEL DE VALOR CULTURAL

TRANSFERÊNCIA DO POTENCIAL CONSTRUTIVO PARA OUTRO LOTE

COMPROMISSO DE RESTAÚRO E CONSERVAÇÃO

INCENTIVO TRANSFERIDO

POTENCIAL PERMITIDO DA ZONA
SOLO CRIADO

PARAMETROS DA ZONA

ACRESCIMO COM INCENTIVO CONSTRUTIVO

AFASTAMENTOS MAIORES DAS DIVISAS

R$ OU TERRENO AO FUNDO MUNICIPAL DA HABITAÇÃO

IMPLANTAÇÃO DE PROGRAMAS HABITACIONAIS
Changing the Urban Form of Curitiba, Brazil
From Radial to Linear Growth Pattern
Urban Development Strategy - SCHEMATIC VIEW

- Structural Sector
- High Density Development
- Compulsory LAND acquisition

Densities = 600 persons/ha
1. One way traffic towards the inner city.

2. One way traffic outwards the inner city.

3. Structural axis with exclusive bus lane and parallel local traffic roads.

A-B. Structural sector
Density = 600 inhab/ha

FAR = 6
Curitiba Integrated Transport Network
Trinary System and the Structural Axis of Curitiba
Land Sharing
PRINCIPLES OF LAND SHARING

1. Private Land squatted

2. Owner negotiates with squatters

3. Public agency takes initiative

4. Deal: Owner transfer part of his land to squatters

5. Squatters resettle out of owner's share of land

6. Land consolidation by squatters with design, standards & planning support

7. Public agency works on infrastructure provision

8. Squatters regularise land occupation and pays for land ownership

9. Owner recaptures land hold ready for redevelopment & partly reimbursed from loss
## ADVANTAGES FROM LAND SHARING

### LAND OWNER
- Invaded land couldn’t be developed & capitalised.
- After resettlement land can be capitalised;
- Full land development takes place;
- Land is free for commercialisation

### SQUATTERS:
- Land regularisation
- Recognition of rights
- Security of tenure
- Participation in housing markets
- Improvement of living conditions

### LOCAL GOVERNMENT
- Improvement of living conditions;
- Environmental improvement;
- Widening of property tax base;

### PREREQUISITES:
- Cross actor co-operation and agreement;
- Strong leadership;
- Land ownership survey - cadastre;
- Private rights to land must be recognised;
- Land for relocation must be sufficient for acceptable density otherwise subsidised multi-storey housing must be considered.
Land Sharing
Agreement between land owner and land occupiers (dwellers) involving

• Negotiation: The agreement has to be negotiated between the dwellers and land owners, both of whom are trying to maximise their own benefits.
• Densification: The occupants are housed in a smaller area, as part of the land is taken over by the owners, usually for commercial use.
• Reconstruction: Densification typically implies that new buildings will replace old structures.

Successful cases:

<table>
<thead>
<tr>
<th>City</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyderabad</td>
<td>35</td>
</tr>
<tr>
<td>Vizag</td>
<td>5</td>
</tr>
<tr>
<td>Vijayawada</td>
<td>3</td>
</tr>
<tr>
<td>Delhi</td>
<td>2</td>
</tr>
<tr>
<td>Bankok</td>
<td>7</td>
</tr>
</tbody>
</table>

Land Sharing - Hyderabad

Total area: 1200 sq. yds.
Slum dwellers: 240 households
Redevelopment area: 5530 sq. yds.
Time taken: 9 years

Land Sharing - Hyderabad

Gandhi Kuteer

What slum dwellers got

What the land owners got

Lessons: land Sharing

• It legitimises land occupation by the resident community in central city locations (full or conditional rights).
• It makes part of high value land available to the original owner in a short time, as compared with the time taken for litigation.

But….

• Sometimes the land available for settling slum dwellers is too small, forcing the building of multi-storied apartments, that are not popular among the poor.
• Complex and time consuming negotiation with the land owner
• Complex & long drawn community participation process throughout. Dissidence and groupism and lack of trust are common problems faced within the community.

INCREMENTAL LAND DEVELOPMENT

I. Land Assembling
II. Planning
III. Infrastructure Provision
IV. Construction
V. Occupation

FORMAL LAND DEVELOPMENT

I. Land Invasion/land holding
II. Building & Densification
III. Infrastructure Provision
IV. Planning
V. Legalisation

INFORMAL LAND DEVELOPMENT

1. Municipality prepares plan and subdivides land
2. Municipality selects beneficiaries and allocate plots
3. Beneficiaries sign contracts and start construction and occupation on raw land
4. Municipality installs public taps, collective services but no individual connections

Municipality gradually improves services and infrastructure: from unpaved to paved roads; from public taps to individual connections; consolidation is incrementally done.

4/26/2007  Claudio Acioly, IHS-The Netherlands