Urbanization in "Chindia" -- India Struggles with the Next 500 Million

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Asian Experience with Compact Growth

Structure of the Paper & Presentation

1. Intro to Urbanization

2. Development Patterns

3. Housing

4. Essential Services

Urbanization

- 1950: India is 15% urbanized
  - Delhi is 1.5 million
- 1991: India liberalizes its quasi-socialist economy
- 2007: India is maybe 30% urbanized
  - Delhi is 14 million
- U.S. and Europe are around 70%, and it is not clear why India will not reach that figure
  - "Keep them on the land" has not worked
- Estimates:
  - 140 million additional city residents by 2020
  - 700 million more by 2050

Compact?

Middle class now estimated at 250 million

– Auto ownership increasing rapidly
  ▪ 963 new registrations per day in Delhi
– Desire for more living space increasing
– Indian extended family living structure is still very common, but
  ▪ Those extended families are looking for larger units with more per capita space
  ▪ Small but growing percentage of young move out and get their own housing

Compact?
Density Varies Widely

Compact?
Some of the Highest Densities are in Slums

Compact?

Average Population Density

Denver = 5,500 / sq. mi (8.6 / acre)

Delhi = 24,000 / sq. mi. (38 / acre)

New York = 26,500 / sq. mi. (41 / acre)

Mumbai = 57,000 / sq. mi. (89 / acre)

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Compact?

Low Edge Population Density

Denver = 1,500 / sq. mi (2.5 / acre)

Delhi = 10,000 / sq. mi. (15 / acre)

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Compact?

Highest Population Density

Denver = 17,000 / sq. mi. (27 / acre)

Delhi = 66,000 / mile (103 / acre)

New York = 70,000 / sq. mi. (109 / acre)

Mumbai = 111,000 / sq. mi. (173 / acre)

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Compact?

And then there is Dharavi

1,150,000
people in
less than
1 square mile

1,800 / acre

Compact?

Trends

Central Areas

- Minimum redevelopment densities of about 200 du / acre
- Redevelopment very slow due to dense populations and title problems

Edges

- Controlled (Legal) expansion at high densities served by rail lines and freeways
- But also low density conversion of illegal lands to "farmhouses" for the wealthy

Compact?

Slum Upgrading

- 30 to 50% live in slums
  - In Mumbai, 54% live on 13-20% of the land
  - Usually land with contested title or government land
- 1950 thru 1970s policy – relocate slums to new housing at the city edge
  - Causes 75-80% job losses
- 1980-1995 policy – minimize relocations and build new housing on site
  - Keep current densities but provide better housing
  - Funds always very inadequate

Compact?

Slum Upgrading

1995: Mumbai ADR/TDR program

- Landowners must re-house all current residents on site in new highrise housing at the owner's expense
- City gives owner bonus density of 1 to 1.33 sq. ft. of buildable area for each sq. ft. of highrise slum replacement and increases FAR by about 80%
- Owner can use bonus density for residential or commercial development.
- Owner must ensure site has at least 200 du / ac of housing, but can transfer anything left over off site – "to the North"

Compact?

Slum Upgrading

Result:

- About the same pace of building

- But at private expense

- With higher densities both on and off-site

Compact?

Slum Upgrading

Once Mumbai's top tourist spot, Dharavi is slowly being refashioned into an industrial-cum-residential complex. In the meantime, Asia's biggest slum loses some its essential characteristics, chiefly, the illegal small-scale industries that flourished here. Sherwin Crasto's photographs chronicle that change

Compact?

- Well, they're certainly more dense than most U.S. cities
  - Somewhat more dense at the edge
  - Consistently higher on average across the city
  - Much, much higher in the most dense areas
- They are also less auto dependent
- But they are not compact
  - Larger Indian cities combine both density with sprawl at the edges

Legal Framework

- A Top-Down Regulatory Structure
  - Inherited from pre-1947 Britain
  - Careers go up – Mandates come down
- 1992: 74th Constitutional Amendment
  - Calls for decentralization/devolution of powers
  - "State List" and "Local List" of powers
  - Urban planning is on the "Local List"
- Poor Implementation of 74th Amendment
  - Reluctance of state and central officials to give up power
  - Shortage of trained and competent local staff

Legal Framework

A Different Kind of "Separation of Powers"

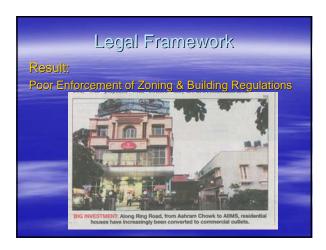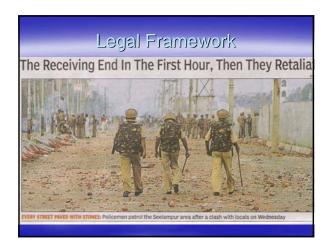- Planning norms and policies are often made at the federal level

⬇

- Master Plans are made at either state or local level, but need state or federal approval

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- Enforcement of land and building regulations is a local responsibility

Legal Framework

Indian National Government

Planning
Development

Delhi Development Authority

Delhi State Government
Other municipal services

Delhi Municipal Government
Building Code Enforcement

Legal Framework

Result:
Poor Enforcement of Zoning & Building Regulations

BIG INVESTMENT: Along Ring Road, from Ashram Chowk to AIIMS, residential houses have increasingly been converted to commercial outlets.

Legal Framework

The Receiving End In The First Hour, Then They Retalia

EVERY STREET PAVED WITH STONES: Policemen patrol the Seelampur area after a clash with locals on Wednesday

Legal Framework

2005: India announces JN-NURM

- $27B initiative to fund urban infrastructure and "basic services for the urban poor" in the 63 largest cities
- Cities file City Development Plans and Detailed Project Reports of how they will use the money
- City governments have to implement six reforms
- State governments have to implement seven reforms
  - Including implementation of 74th Amendment -- devolving urban planning powers to cities

Housing

Post-Independence

- **Quasi-socialist model -- 1991**
  - **Housing policy focuses on government workers**
- **Liberalization – 1991-2005**
  - **Private market builds large volume of housing for middle- and upper-class**
- **JN-NURM – 2005-2012**
  - **Subsidized (90%) housing for Economically Weaker Sections**
- **Long-term**
  - **Both private sector and public sector efforts needed**

Essential Services

Are Essential Services Available

- Generally – "No"

- Land use patterns more dense and public transit oriented than U.S. cities

- But those advantages are undercut by poor infrastructure, poor municipal finance, and poor enforcement

Essential Services?

Water

- Estimated 50% of water that enters the system is not paid for

- Most cities have only 2 hours of water per day

- "24/7" water plans are opposed by advocates for poor and current employees

- Again, poor buy water through middlemen at higher-than-metered prices

Essential Services?

Sanitation

- Delhi has 2851 MLD treatment capacity

- 681 MLD (23%) shortfall
  - 3 billion liters per year of untreated waste enters the river

- 55% of city connected to sewer system
  - Most of remainder is in slums
  - 62,000 slum clusters located in drains leading to the Yamuna

- "The river is dead – it has just not yet been cremated"

Essential Services?

Electricity

- Estimated 50% of electricity that enters the system is not paid for
  - Many illegal connections
  - Higher rates for legal connectors
  - Raises incentive to avoid legal connections
  - Many illegal connections are by middlemen who re-sell electricity to the poor at higher cost than they would pay if connected directly

Essential Services?

Transportation

- An enviable mode split

- Estimated 60% of trips are by bus, train, or auto rickshaw

- Price controls on fuel insulate public and remove further incentives

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Essential Services?

Solid Waste

- Mostly old-style dumps, but moving towards sanitary landfills

- Much lower waste generation per capita

- 8 different types of workers recycle almost all usable content

- What's left is generally "dust"

Conclusion

India's Cities are Generally:

- Dense – compared to U.S. cities
- A mixed picture of very compact pockets within sprawling-but-dense regional areas
- Not poised to provide or enable housing or essential services for the large volume of new city residents over the next 20-50 years
- Not able to enforce compliance with plans or regulations designed to encourage densification and manage sprawl

THE END