

Options for making Affordable Housing - Reality in Urban India



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Role and importance of Housing

Housing;

- One of three basic human necessity

- Provider of a space for- Security, safety, credibility, identity

- major determinant of quality of life, liberty, dignity, productivity of human living.

- Central /valuable -- to development of -- individuals, communities, societies, states, nations & planet.

- -- Promoter of large employment-

- -- promoter of industrialization – 290 industries

- -- *Promoter of national/ Local Economy*

- -- *Significant Contribution to GDP*

- -- Tool for Monetary Policy

- -- *Builder of Wealth*

- -- *Equitable Distributor of Wealth*

- -- *Promoter of Non-Housing-Related Expenditures*



Role and importance of Housing

- Housing universally valued for its capacity to have--
- - multiplier effect of-- generating wealth, promoting economy and employment
- --promoting public good
- -- creating healthy, vibrant and productive society.
- -- shaping society, its quality, culture and economy.
- -- generating large scale employment opportunities to both skilled / unskilled
- --providing space for family to be together, for interacting, playing,
- -- major promoter of industrialization
- -- enabling enjoyment of certain additional rights
- - best option for survival in times of crisis or displacement.
- - key to restoring personal security, self-sufficiency and dignity
- -- . Adequate housing- as an index, used for assessing growth, development and welfare of a society.

Role and importance of Housing

- **Housing**

- major planning, development & management component in a city,
- occupying largest proportion of land
- having largest count among buildings in city,
- defining its personality/culture.
- remains the focus of all human activities
 - largest proportion of investment in any city
- -- Determinant of health and hygiene of people
 - Majority of intra-city travel/trips --originate from/ terminate in housing
- **Demand for housing**
 - never static-
 - ever dynamic,
 - ever evolving
 - ever devolving,
 - impacted by large number of
 - social, economic,
 - cultural, physical,
 - economic factors,

Role and importance of Housing

Housing;

- Ensures Market Efficiency, Stability/ Liquidity
- Support Economic Flexibility and Responsiveness
- Contribute to Local Government Finance*
- Helps Labor-Intensive Domestic Production
- *Creates Stimulation for Small Business*
- *Promote Home-Based Income Opportunities*
- Promote Development of Land / Real Estate Systems
- *Helps creation of Community-Led Finance for Infrastructure*
- Cumulatively -- Housing known to have:

--Physical, Social , economic & environmental connotations.

➤ **Considering multiple implications—**

➤ **Inadequate shelter**

➤ **- deprives benefits of many rights/programs**

➤ **- provided by state.**

➤ **- providing housing to all -- emerges priority**

➤ **-for communities/ society/state/ nation.**



Housing as a Right

Considering role, importance & context of housing - UN called for accepting Shelter as a basic human Right— under ;

---UN Vancouver Declaration on Human Settlements (1976),

-- The Habitat Agenda 21 (1992), Agenda 1996

---UN Global Strategy for Shelter to Year 2000 (1988)--describes;

Right to adequate housing is universally recognized by community of nations

...All nations without exception,

-- have some form of obligation in shelter sector--exemplified by

--creation of ministries

-- Creating housing agencies,

-- allocation of funds to housing sector,

---framing policies, programs and projects..

..All citizens of all States -- how poor as they may be

-- have a right to expect their Governments

-- to be concerned about their shelter needs, and

-- to accept a fundamental obligation to

-- protect and improve houses and neighborhoods,

--rather than damage or destroy them.



Housing Status

- *UNHS finds* ,
- Globally 13% world's cities(195) have affordable housing-- 2014
- *McKinsey estimated*;
- -- 330 million urban households-- living in substandard housing /financially stretched by housing costs
- -- number likely rise to 440 mhh /1.6 billion people, by 2025 – and 2.5 billion people by 2050.
- - Africa-- over 50% population live in sub-standard conditions
- India/China-- nearly a quarter of population live in informal settlements



POPULATION

&



URBANISATION

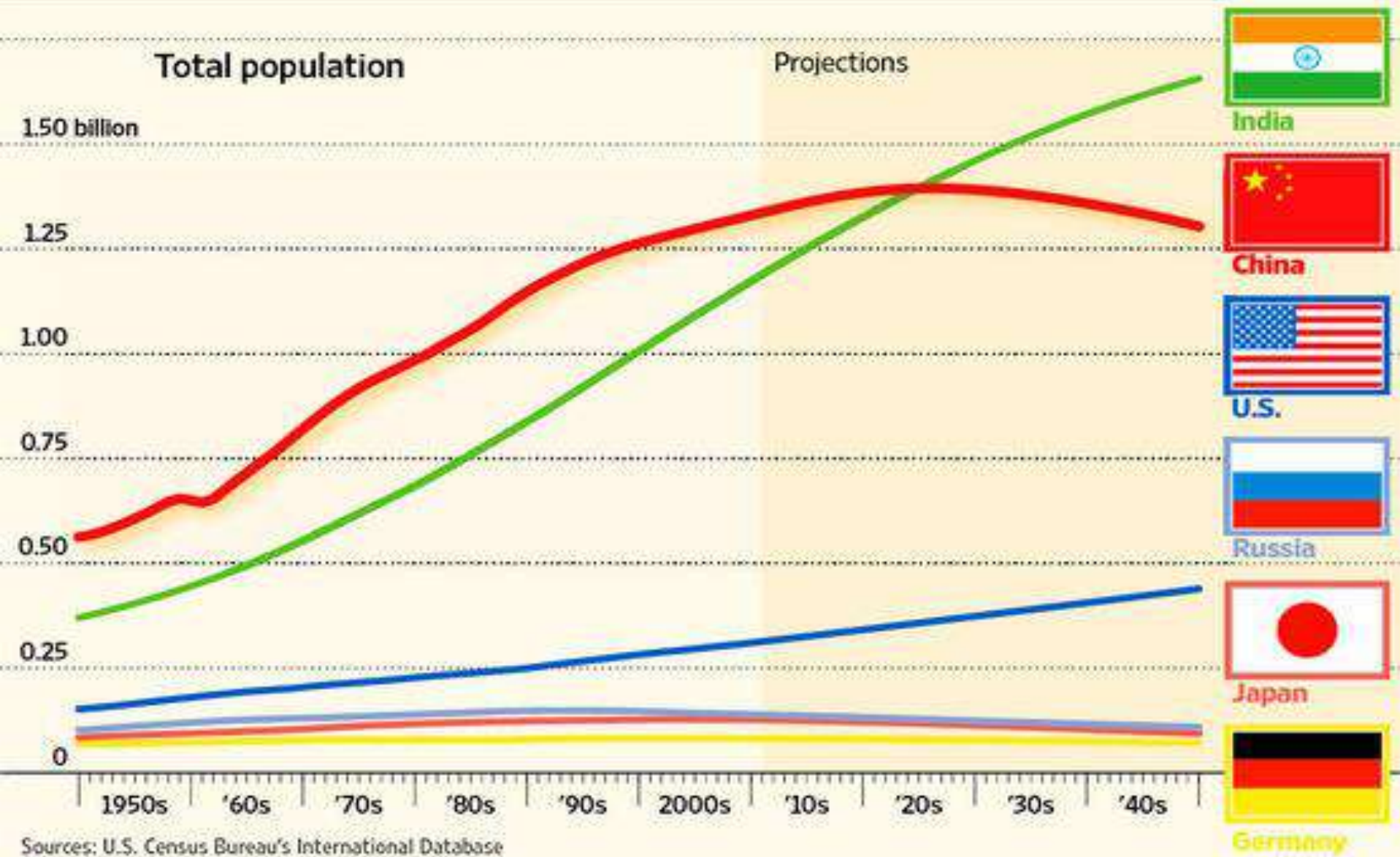
Population Scenario- India-2011

- **Housing problem-- an interplay of factors involving-- Population, Urbanization, Migration, Poverty**
- **Population of India reached**
 - **250 million in 1919**
 - **500 million in 1966 (47 yrs. Later)**
 - **1000 million in 2000 (34 yrs. Later)**
 - **1027 million in 2001 (1yr Later)**
 - **1210 million in 2011 (10 yrs. Later)**
- **2020– Indian Population -1380 M (35%)- 483 million_**
- **2050- Indian population- 1600 mil. -- 50% in Urban India.**
- **Metropolitan Centers -5 (1951)- -53 (2011)-68(2031)**
- **10 m plus- nil (1951)- 3 (2011) -7 (2031)-9 (2051)**
- **Urban India --first time added more persons(91m) than Rural India (90m) in last decade**
- **During last 100 years, India witnessed—**
 - **Urbanization level going up by 3 times**
 - **Urban settlements growing merely 4 times**
 - **Total Population multiplying 5 times**
 - **Urban population increasing 15 times and**
 - **Rural population increasing 3.5 times**



Where are we heading

Counting Down | China's one-child policy helped rein in population growth



Sources: U.S. Census Bureau's International Database



- **HOUSING-**
through Five
Year
Plans, Policies

Various Five Year Plans

Five Year Plan launched by
Government of India

- focused on launching numerous programs/policies
- for promoting housing for all
- in general &
- for poor in particular

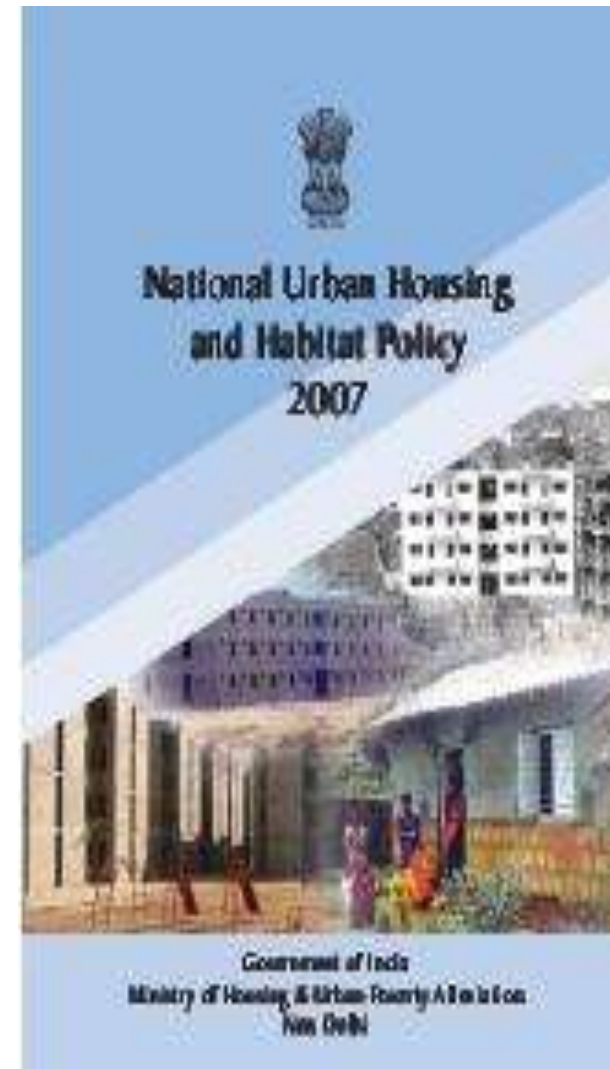


Programmes	Focus
Slum Clearance and Improvement Scheme 1959	Focus on slum clearance
Environment Improvement of Urban Slums (EIUS) 1972	Focus on environmental improvement , provision of taps, hand pumps, street lights, toilets, etc.
Minimum Needs Programme 1975	Provision of basic services for slum dwellers
Urban Community Development 1985	Focus on involving communities -- funding from ODA, UK Govt.
Urban Basic Services 1985	Focus on provision of civic services --, funding form UNICEF
National Slum Development Programme (NSDP) 1996	Additional Central Assistance to state governments for slum improvement
Valmiki Ambedkar Awas Yojana (VAMBAY) 2001	Provision of houses for slum dwellers below poverty line (BPL) , central scheme with 50:50
JNNURM Mission II – Basic Services for Urban Poor (BSUP) 2006	Built Housing Units with services for slum dwellers
Rajiv Awas Yojana (RAY) 2010	Full city approach, slum free city plan, variety of components, flexible in nature

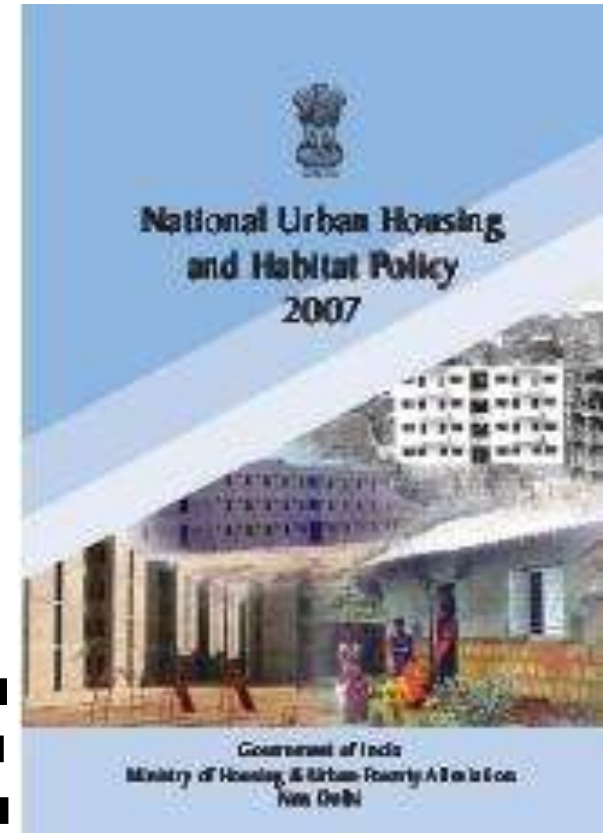
National Housing and Habitat Policy- 2007

First Urban Focussed National Housing & Habitat Policy (NUHHP) aiming at:

- `Providing Affordable Housing for All
- focus on Urban Poor.
- adopting 'Regional Approach' --for development
- Role of Government -- as 'facilitator' & 'regulator.'
- Earmarking dedicated land for
- EWS/LIG housing - in new housing projects
- retaining Governments role in social housing
- making available affordable housing for EWS / LIG categories
- on ownership
- rental basis--



• URBAN HOUSING SHORTAGE

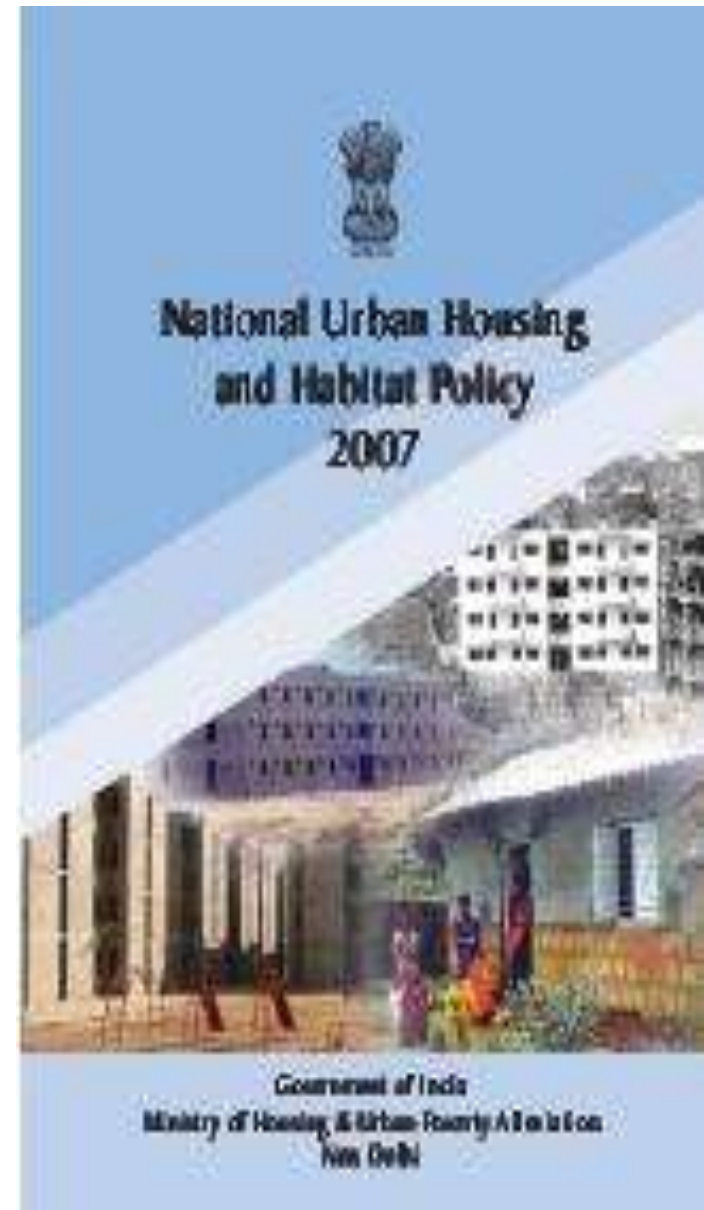


Housing Shortage- 11th FYP

- Housing perpetually in shortage with
- Demand always chasing Supply
- Housing demand always evolving/devolving/-never static/never defined

- Technical Group set up MHUPA--, estimated
- Urban housing shortage---- 24.71 mdu
- -- end of 10th Five Year Plan (2007)
- -- for 66.30 million urban HHs

- Group estimated :
- --88% shortage - EWS category
- -- 11% in LIG whereas
- -- MIG/HIG shortage -- merely 0.04 million dwelling units. ---
- Housing shortage in different categories :
- - ---99.9% of total EWS,
- --10.5% in LIG
- --0.2% in MIG/HIG categories



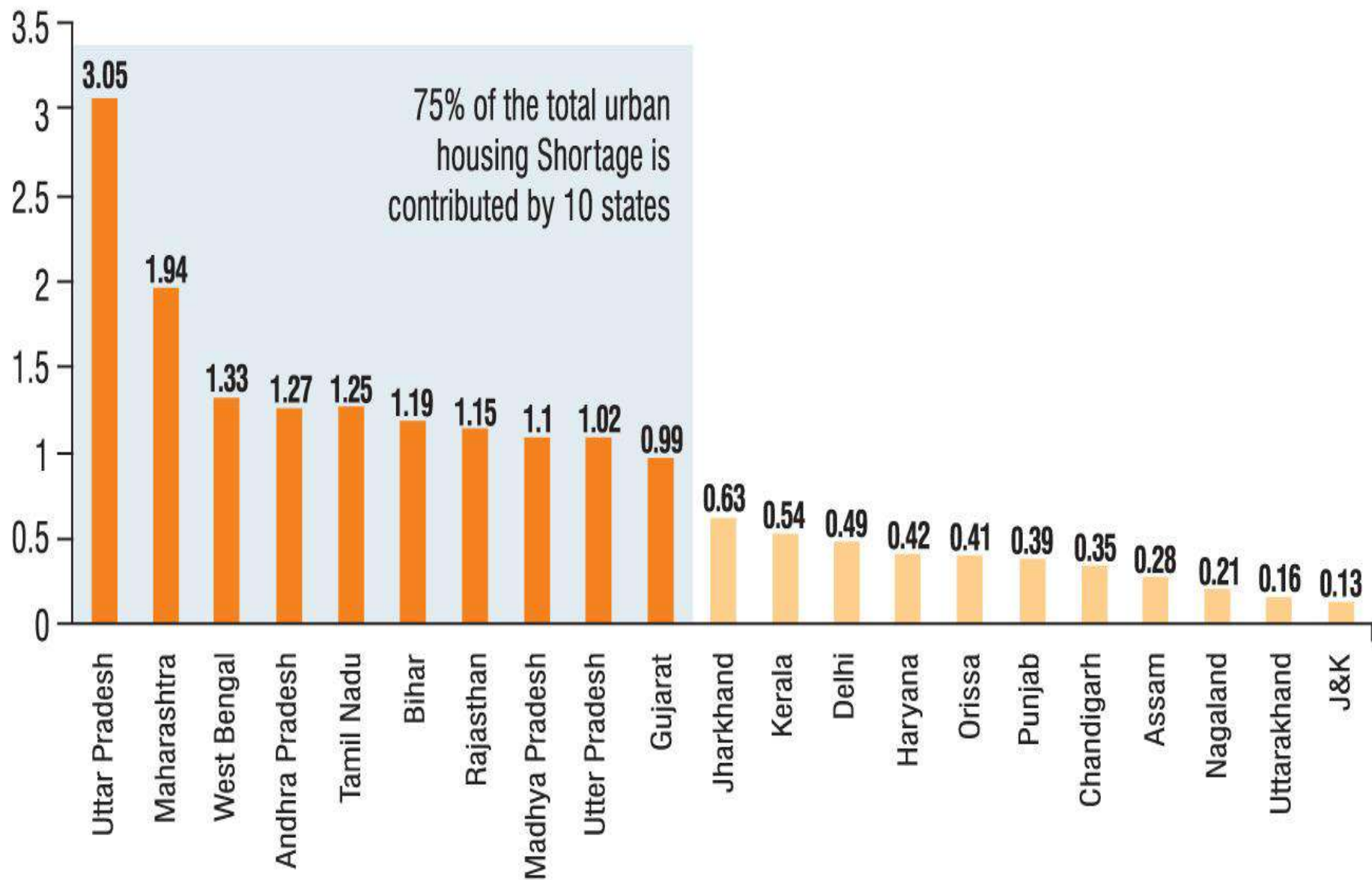
Housing Shortage-11th FYP

➤ *Technical Committee also found (MOHPA)-*

- --Housing Shortage to be at 26.53 mhh in 2012.(end of 11th FYP)
- -- with 2.56 mhh living in non-serviceable/ katcha houses
- -- additional requirement- 1.82 mdu
- -- Highest shortage in UP-3.07 mdu
- - Based on current trend of increasing backlog
- --34 million houses required by year 2022
- -- for achieving national goal
- -- affordable shelter for all.



State-wise housing shortage in 2012 (Fig in million)



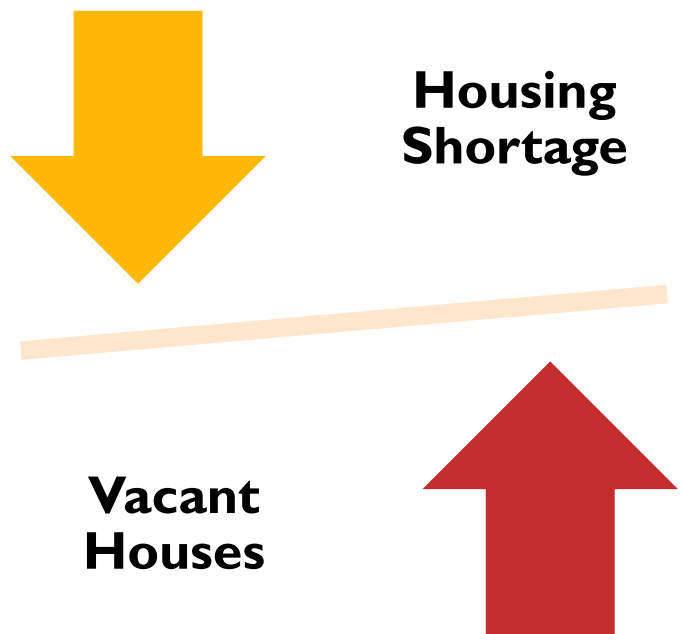
Vacant Houses- Indian Cities

• -- number of vacant houses in India --

• **24.7 million (13.6 million rural and 11.1 million urban), Every sixth urban house in India vacant or 90% of number of rented houses in country- --2011 census figures,**

- **Delhi** **9.60 percent**
- **Mumbai** **10.00 percent**
- **Kolkata** **06.60 percent**
- **Chennai** **03.32 percent**

- **Jaipur** **13.78 percent**
- **Raipur** **1.19 percent**
- **Bhopal** **13.51 percent**
- **Ahmedabad** **12.17 percent**
- **Surat** **14.60 percent**
- **Rajkot** **13.42 percent**
- **Pune** **17.87 percent**
- **Nashik** **15.14 percent**
- **Bangalore** **10.36 percent**
- **Kochi** **13.85 percent**



• SLUMS IN INDIA



INDIAN HOUSING SCENARIO

- **Supply of shelter not kept pace with demand**
- **Situation worsening due to:**
 - **increasing number of migrants.**
 - **High Cost of land, -Poverty, -Poor Affordability,**
 - **poor urban services /infrastructures**
 - **Growth of slums and squatter settlements**
- **growth of slums a sign of :**
 - **inability to afford land / shelter through market and**
 - **failure to ensure equitable access to poor.**
- **As per Census 2001:**
 - **42.6 million (23.1%) people in slums - 640 towns**
 - **24.1 % population in 27 metro cities in declared slums**
 - **Bombay (54.1%)-- Kolkata (32.5%)**
 - **-Slums suffer from –in adequate water supply human waste --40 % without access to safe drinking water and**
 - **over 90 % without access to safe sanitation.**
- **Slums --shall constitute major urban population In future**

Slum & Non-Slum HHs India 2011

A compact area of at least --300 population or about 60-70 households of-- poorly built congested tenements-- in unhygienic environment-- inadequate infrastructure -- lacking in proper sanitary & drinking water facilities.

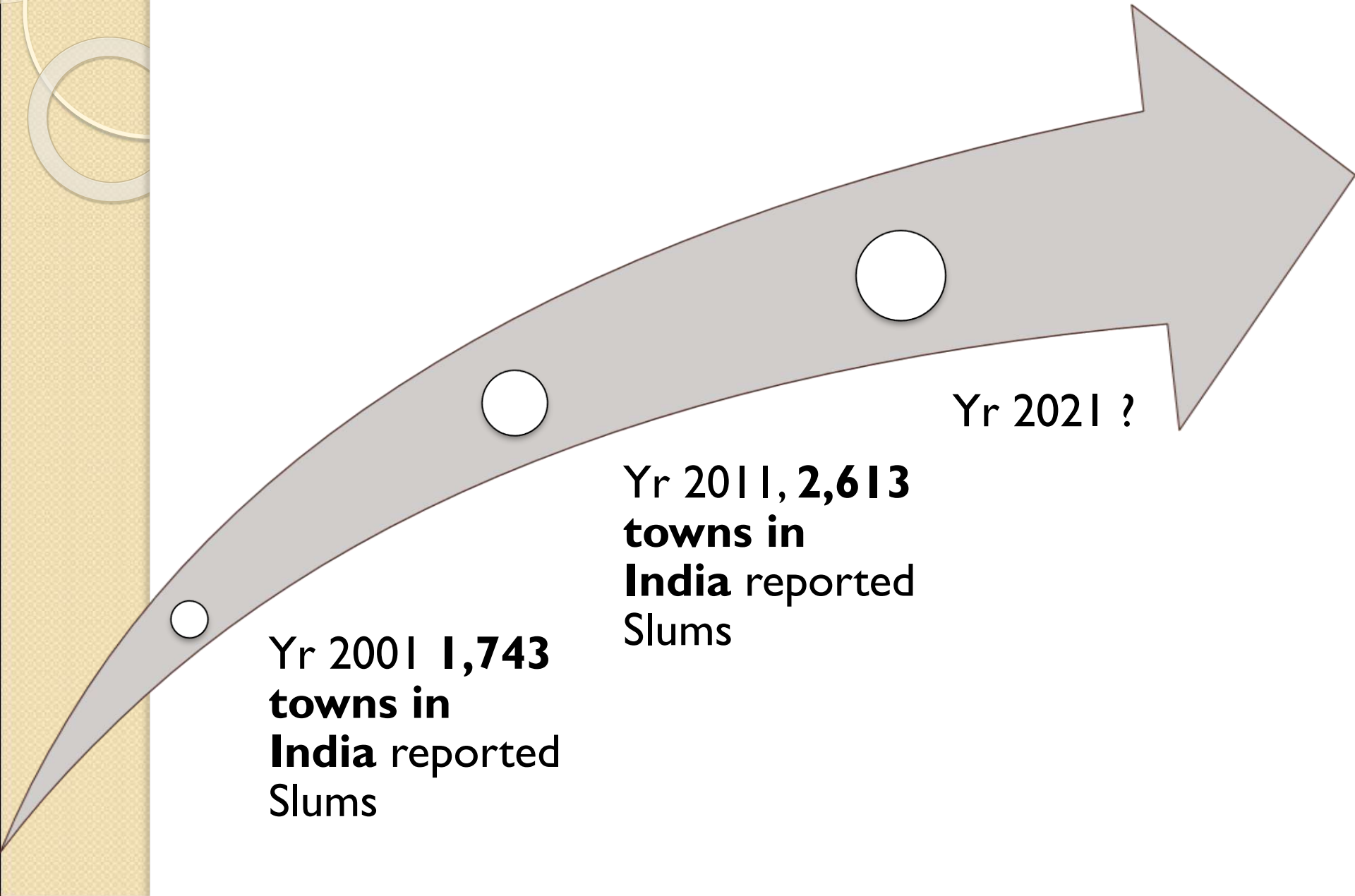
Indicator	Number of households
	(in lakh)
Total (Urban)	789
Slum	137
Non-Slum	652
Number of households (in %)	
Slum	17.4
Non-Slum	82.6

Increasing Deprivation

- In year 2001, India had **523.7** lakh slum dwellers
- In year 2011, India had **654.9** lakh slum dwellers
- 25.1 percent decadal growth rate of slum dwellers



Increasing Spatial Spread of Slums



Yr 2001 **1,743**
towns in
India reported
Slums

Yr 2011, **2,613**
towns in
India reported
Slums

Yr 2021 ?

Informal economy has space in urban economy; but poor do not have space in cities



Urban sector accounts for 60% of national GDP. The contribution of informal sector to urban GDP is 7.58% and to the country's GDP 4.5%. (PRIA 2013)

Poor people's settlements growing at 6% annually – outstripping urban growth rate of 3.4%.

According to UN Habitat India is adding 4.4 million people to informal settlements or *every year*. 202 million Indians will be in informal settlements in 2020.

Discourse is about quality of life..

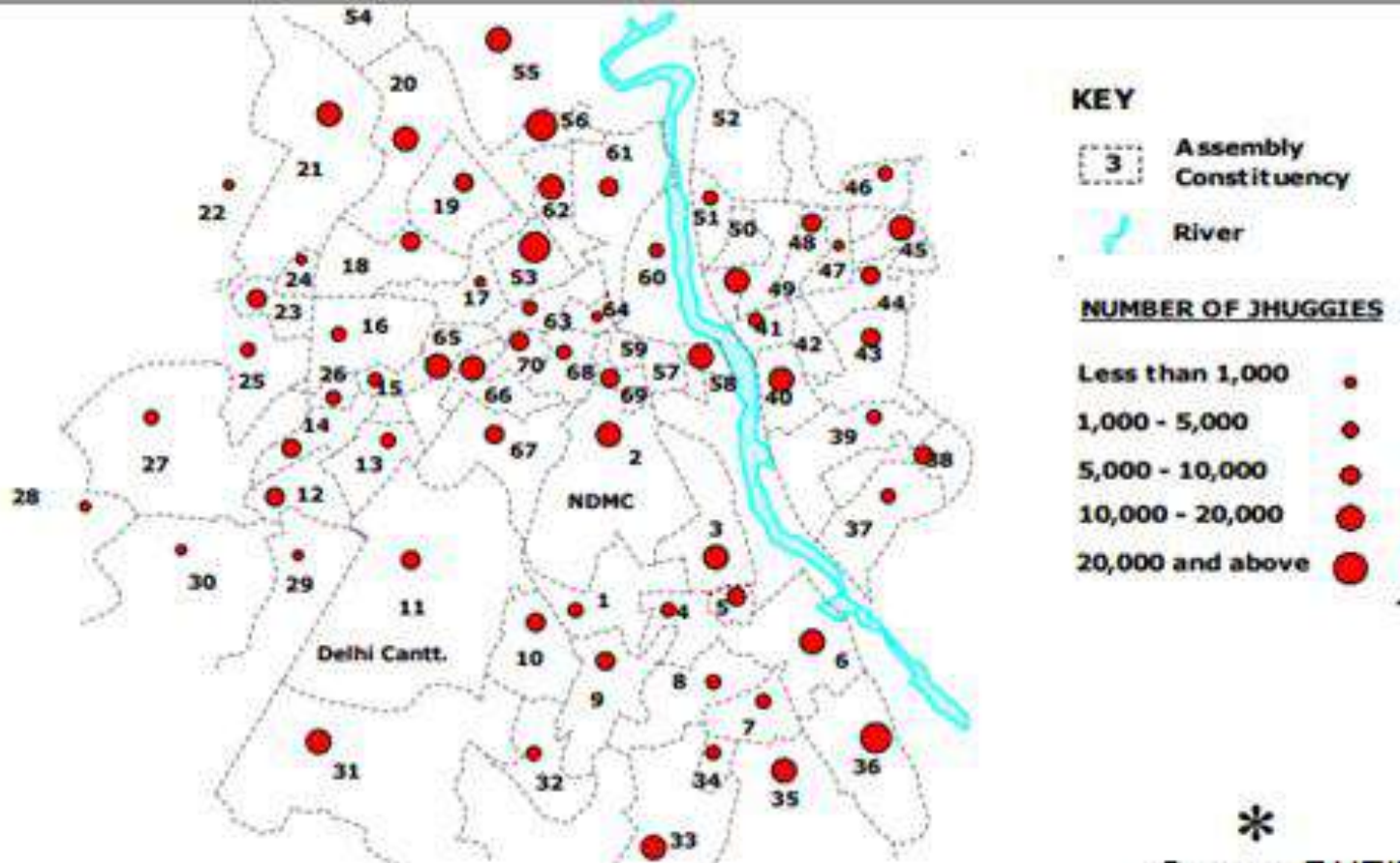




Slums are 3% of Delhi's area but has 30% of Delhi's people
Lutyen's Delhi 3% of Delhi's area with 1% of Delhi's people
Car parking 10% of Delhi's area



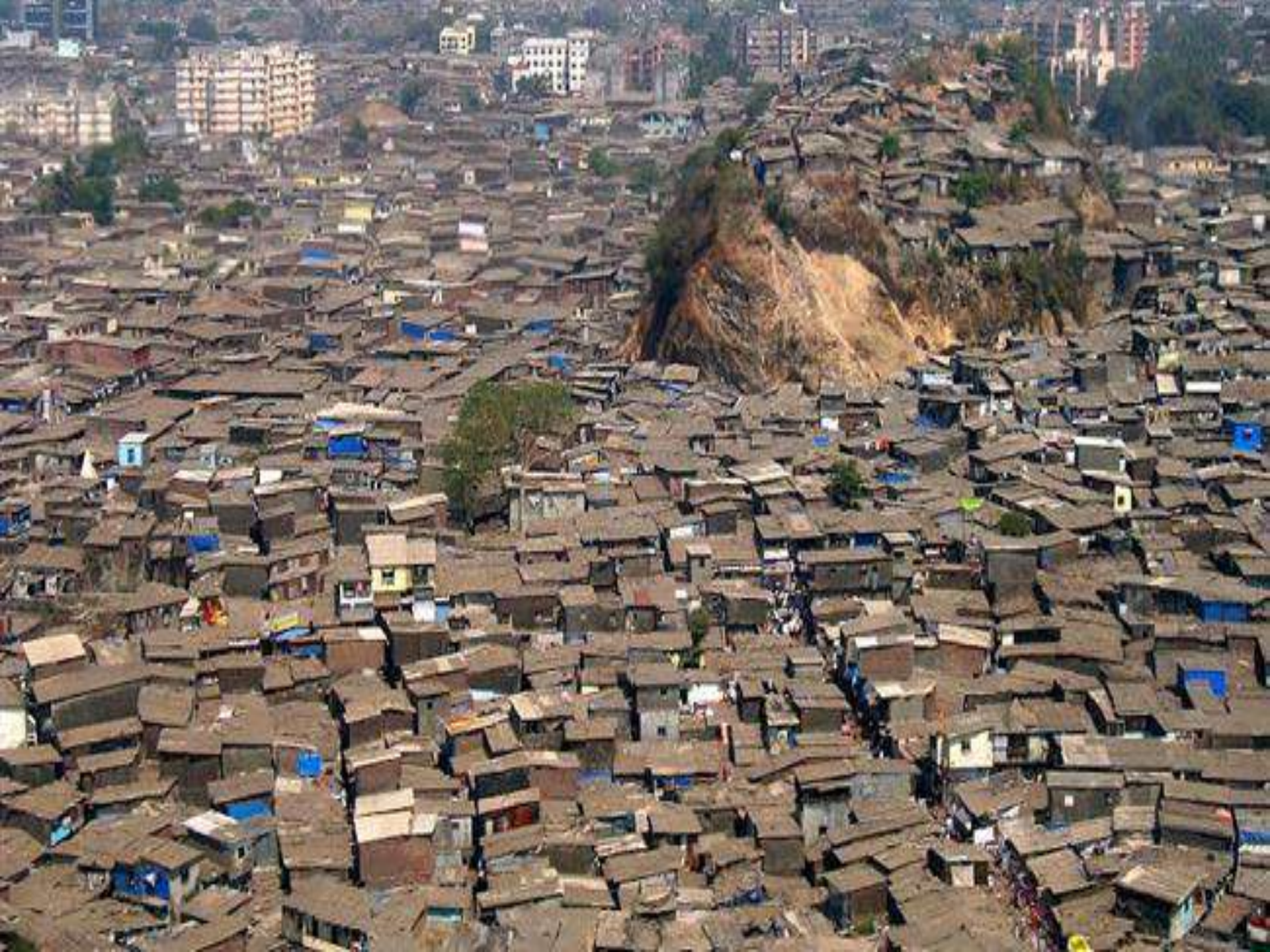
Jhuggies-Jhopris Clusters in Delhi



Source: DUEIIF



•Slums to constitute major chunk of urban population In future



**At the margin
Extreme weather events make slums more
vulnerable**



Chennai floods

Poor people's
home in low lying
areas and wetlands



- **DEFINING
AFFORDABLE
HOUSING**

Defining Affordability- Components

- **Housing— Remains cost/time-intensive**
- **Affordable Housing -- offers enormous opportunity**
- **But Affordability difficult to define precisely**
- **- vested with large variables involving--**
- **- *Cost of House***
- **- *Quality of House***
- **-- *Size of dwelling unit - Area***
- **-- *Cost of living***
- **-- *Family income,***
- **-- *Savings,***
- **-- *EMI***
- ***Location-Time/Cost of travel to workplace,***
- ***Support services,***
- ***security***
- ***Infrastructure,***
- ***O&M expenditure ,***

Defining Affordability

➤ 1. UNHABITAT

- Affordable housing as “housing
- --- *which is adequate in quality and location and*
- -- *does not cost so much that*
- -- *it prohibits its occupants from meeting other basic living costs*
- - *or threatens their enjoyment of basic human rights”*

➤ 2. ‘RICS Report on Making Urban Housing Work in India’ , defines **affordability as:**

- **-provision of ‘adequate shelter’**
- **--on sustainable basis,**
- **--ensuring security of tenure**
- **-- within means of common urban households.**
- Affordable Housing – Housing which is provided to those - whose needs are not met by open market

Affordable Housing

➤ 3. **KPMG Report on Affordable Housing-** A key Growth Driver in the Real Estate Sector'

➤ *income*

➤ *size of dwelling unit*

➤ *affordability*

4. US Department of Housing and Urban Development;

-**expenditure of household on housing**

-- **as proportion of annual income**

- ***should not exceed 30% of total income.***

Affordable Housing

5. *Task Force on Affordable Housing* -- Ministry of Housing and Poverty Alleviation, 2008, ;

6. *size of dwelling and*

➤ *household income*

6 JN NURM Mission

-- *size of dwelling units –*

super built up area/carpet area

-- *EMI/Rent-- not exceeding 30-40% of gross monthly income of buyer.*

7. PMAY

-- *An all weather single unit / unit in a multi-storeyed super structure*

-- *having carpet area of up to 30 sq. m*

-- *adequate basic civic services/ infrastructure services - toilet, water, electricity*

States -- to determine area of EWS with ceiling of 30/60 sq.m of carpet area as the limit for EWS/LIG category housing under PMAY

- *Annual Income not to exceed 3lakh for EWS and 6 lakh for LIG*

Affordable Housing

8. Jones Lang LaSalle defined *affordable housing* in terms of

- **volume of habitation instead of area**
- **provision of basic amenities**
- **cost of the house (including purchase cost and maintenance cost) and**
- **location of shelter**

➤ This definition enlarges scope / dimensions of affordable housing by ::

i. **Adopting volume based approach instead of area-- to providing more flexibility in designing .**

ii. **Adopting minimum physical/ social infrastructure -- ensure quality of life**

iii **Making cost of shelter broad based by including**
-- operational /maintenance cost for a reasonable period to actual cost of house.

iv **Making project attractive/affordable by limiting**
-- cost and travel time --between place of work and place of living



- **Challenges/Issues
in AFFORDABLE
HOUSING**

Challenges in Affordable Housing

- ***Rising Housing Cost***-- costs rising disproportionately to incomes,- adversely impacting lower income households
- ***Increasing Housing Shortage--Gap between Demand/supply***--Ever widening gap between demand/supply
- ***Sourcing Land***-- Scarcity/high value of land
- ***Demographic changes-- due to***
 - -- Reduced Household size
 - -- Rapid Population growth
 - -- Aging population/Longer life span,
- ***Rapid Urbanisation***
- ***Rural-- Urban Migration***
- ***Poverty***

Issues- Affordable Housing-20

- Low availability of **developed land**
- Rising Threshold **Cost of Construction**
- High degree of **Government charges**
- Rigid **Land Use Planning**
- Irrational **Building Bye-Laws**
- Delayed **Project approvals**
- Inadequate **Access to Cheaper Housing Finance**
- **Multiplicity of Agencies** involved
- **Outdated Legal Framework**
- **Marginalised Private Sector**
- **Outdated Construction Technologies**
- **Poor project Management**
- **One Solution Fit All Approach – Focus on Creating ownership**
- **Lack of Research and Development**
- **Absence of Reliable data about Housing stock- Qualitative/quantitative**
- **Absence of Reliable data about Beneficiaries**
- **Large Stock of Vacant Houses**
- **Ignoring Rental Market**
- **Unskilled Manpower in Construction sector**
- **Uncontrolled Urban Sprawl**

Issues- Land

a) Lack of availability of Urban Land

- 2.4% of global land and 17.6% of world population,
- India under perpetual shortage of land

Cost of urban land rising rapidly due to—

- urbanization /industrialization,
- speculation
- Irrational legal framework, planning tools and
- --building bye-laws--

➤ Major issues leading to shortage of urban land :

- i) Excessive parastatal controls on development of land.
- ii) Lack of marketable land parcels
- iii) High degree of encroachments on public land
- iv) Poor land information system
- v) Cumbersome legal / procedure-- for sourcing land
- vi) Restrictions imposed by planning /development framework
- vii) High cost of land /cost of land transactions

Issues – Cost, Government Charges

b) **Rising Threshold Cost of Construction –**

Major contributors include:

- cost of building materials,
- cost of labour,
- cost of transportation
- Cost of Machinery
- Government Taxes, levies, fees

c) **High degree of Government charges – increase house cost**

Charges levied on housing include charges/ fee for:

- licensing of colonies
- ,-- change of land use,
- layout approval
- building plan approvals
- internal development charges
- external development charges,
- registration of land
- registration of finished house
- .—Labour Cess

Issues- Planning, Bye-laws

d) Rigid land use planning –

- Master Plans, Development Plans,
- Controlled Area Plans and Zoning Regulations control
- mechanism of planning / development
- Excluding --informal sector / affordable housing
- - from --planning strategies / development options.

e) Irrational Building Bye-Laws and Subdivision Regulations-

- Low Floor Area Ratio
- Low densities
- Large Floor Area of dwelling units -----leading to;
- high degree of operational inefficiencies
- underutilization of land
- restricting number of dwelling units
- restricting cost-effective/state of art
- building materials
- construction technologies.

Issues- Approvals, Finance

f) **Considerable time taken** for approval of projects/ /building plans (16-24months) due to:

- complicated procedures/ cumbersome processes
- large documentation
- large number of agencies involved
- large number of personnel involved
- Lack of Co-ordination among offices/ personnels
- Ambiguous Rules/ Regulations,
- narrow interpretation
- duplications of processes/procedures
- lack of decentralization of powers
- High degree of corrupt practices
- leading to time over- run/ cost over- run of projects.

g) **Lack of access to housing finance**

- non- availability of large number of documents involved
- providing securities
- -proof of assured sources of income
- permanent residential address

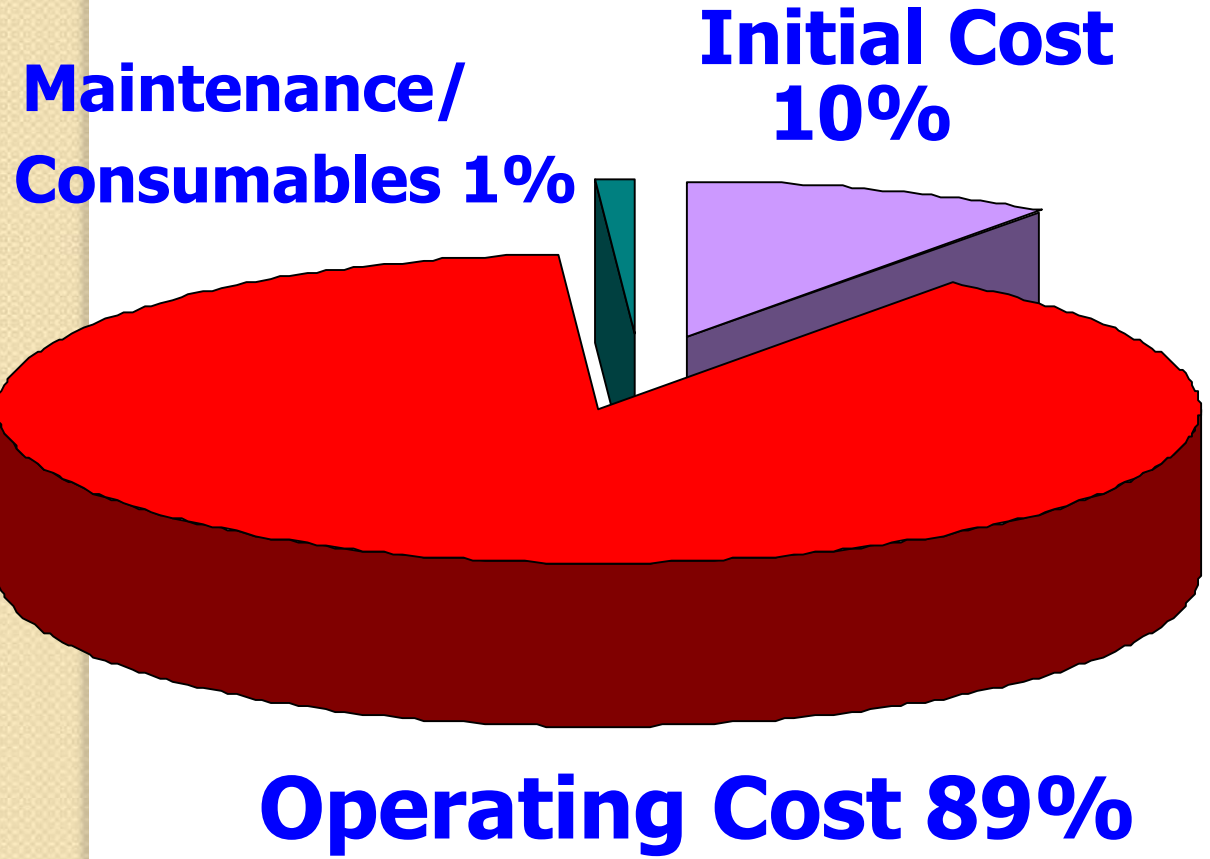
Issues- Agencies/Laws, Legal framework, private sector, technologies

- h) **Multiplicity of agencies and laws involved** in the approval
 - working at cross purposes --leading to delay/ cost escalations-- KPMG /NAREDCO revealed that
 - Study real estate projects --required to pass through
 - 150 tables in 40 departments --Of central/ state/ urban local bodies before approval
- i) **Outdated and irrational legal frame work :-**
 - Rent Control Act.**
- j) **Low key involvement of Private Sector due to lower order of profitability**
- k) **Outdated technologies / conventional methods of construction & poor project management:- Onsite/offsite construction**
 - leading to wastage
 - delay in construction
 - raising cost of dwelling units.



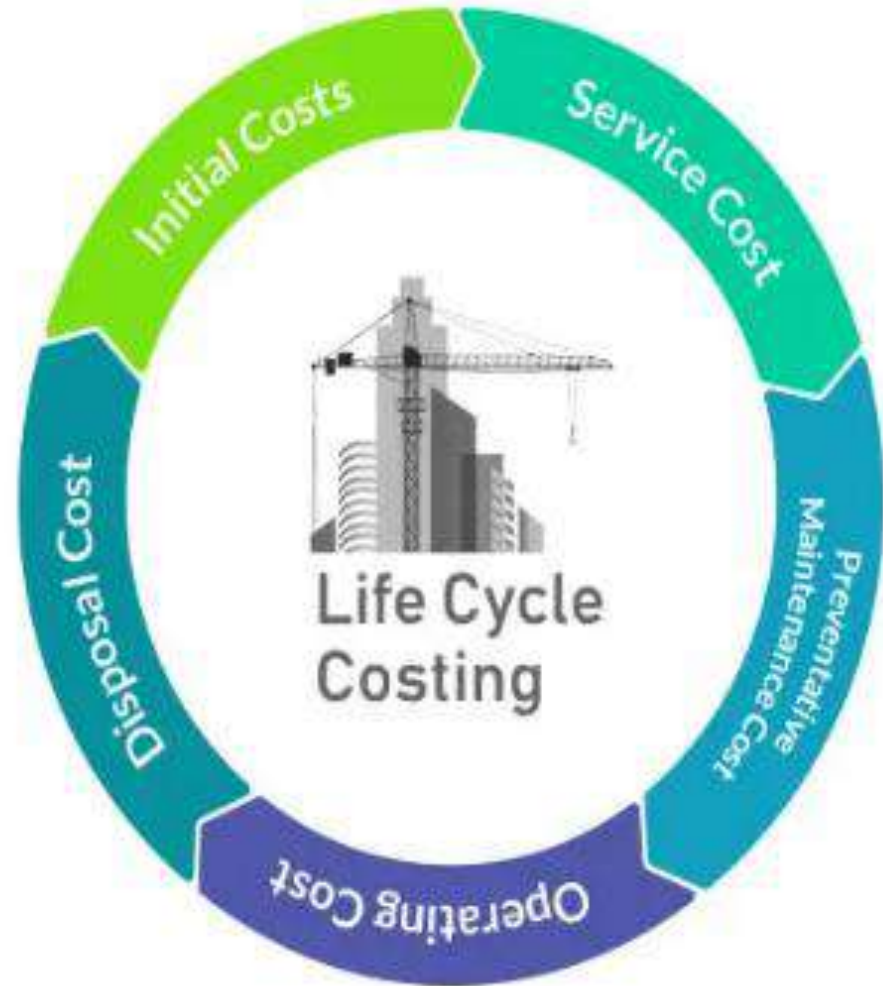
COST OF BUILDING

Buildings- life cycle costs



What constitutes Cost of Building

- Cost of building includes:
 - i Cost of land
 - ii Cost of construction
 - iii Cost of maintenance
 - iv Cost of operations
- Building cost viewed in both
 - --- long term and short term
- Building cost also evaluated
 - -- Initial Cost and Life Time Cost
- Short Time cost- Initial Cost
- Long Term cost component –
 - - whole life cost.
- Whole life cost of building includes:
 - the initial design cost
 - construction cost,
 - on-going operations and maintenance cost ,
 - parts replacement cost
 - disposal cost or salvage value, and
 - useful life of the system or building
- To promote economy in building– Life cycle cost of building will be critical



Saving Cost of Housing



How to save on Cost of Housing

- **Housing can be made cost-effective by:**
- **Sourcing land at most competitive price**
- **Adopting optimum Design solutions-** architecturally, structurally, Services etc
- **Using cost-effective local materials,,** re-cycled materials , materials requiring minimum maintenance, having longer life
- **Optimising resources /minimising waste- materials**
- **Using state of art technology in construction --** cost- effective , labour-efficient, saving materials and money pre-cast, pre- fabrication
- **Managing construction** in most professional manner- Project management
- **Using minimum Time for construction /** completion of building/project-Time efficient
- **Designing Green Buildings** –to reduce cost of electricity/water and generating its own energy
- **Keeping cost of money minimum-** based on rates and time
- **Rationalizing Builders, Contractor margins**
- **Reducing Government levies and fees**

Promoting Cost- effectiveness- Designing



Cost Reduction in Housing-designing

- **Architectural design and Planning– Best option to reduce cost—**
- **Site planning focusing optimum utilization of land/ resources**
- **Optimum design solutions-architecturally, structurally, Services etc.**
- **Evolving Functional design,**
- **Optimum utilization of spaces- both within/outside**
- **Multiple uses of spaces,**
- **Minimizing area under walls, circulation etc,**
- **High building efficiency (high carpet area/covered area ratio),**
- **Low rise-High density- avoiding lifts**
- **Promoting Flatted development against plotted development**

Cost Reduction in Housing-Designing

- Promoting Standardization
- Reducing Building Load- self/ occupied--Designing thin and lean structures
- Minimizing PH fixtures/toilets
- Clubbing/planning all public health services
- Adopting efficient structural system--Avoiding large spans
- Avoiding large projections
- --Avoiding large area under balconies and projections.
- Making optimum use of day- lighting
- Making optimum use of wind -- for cross –ventilation, where required
- Designing with nature
- Using - Panchbhutas while designing- Prithvi, Agni, Vaayu, Jal and Aakash
- Making best use of orientation
- Making best use of sun for heat and light
- Adopt integrated approach to design
- Minimize single loaded corridors,
- promote doubly loaded corridors- to minimize area under circulation
- Minimizing building foot- prints
- Designing compact buildings



- **Sourcing
Land for
Housing**

Sourcing Land for Housing

- **Land Pooling**
- **Negotiated Settlement**
- **Formal Acquisition**
- **Leveraging Zoning**
- **Densification and Intensification**
- **Transit Oriented Development**
- **Inclusionary Zoning**
- **Mixed Use Development**
- **Green Field Development**
- **Brown Field Development**



WAY

FORWARD

Way Forward

➤ **For making affordable housing a reality/ ensuring adequate supply of land -- following approach is suggested:**

i) **Making land market more efficient,** -for making land available at lower cost

ii) **Permitting construction of houses on**

-- **periphery** /peri-urban area

-with provision of services, infrastructures / transport..

iv) **Granting additional FAR**

-rationalizing building bye-laws

-zoning regulations to ensure - optimum utilization of land /construction of more affordable houses.

v) **Creating Land Bank**

-for constructing affordable housing and

-making available land at competitive price

vi) **Promoting strong Project/ Cost Management**

-to increase speed of construction and

-Reduced cost of construction /Eliminate cost over-runs.

Way Forward

vii) **Promoting Standardization** of building components --based on effective design to promote prefabrication /mass production of components.

viii) **Bringing new state of art construction technologies**

-using cost effective locally produced building materials

--based on industrial waste

--to lower down cost of construction and

- make buildings green and sustainable.

ix) **Long term tie for supply of conventional building materials** --including steel, cement ,tiles etc-- to minimize variations in price/ to ensure assured supply of materials

x) **Promoting large scale projects** -Taking up large housing projects with number of units ranging from 1000-1500 for **promoting and achieving economy of scale.**

xii) **Rationalising/Reducing Government levies/ charges** --to minimize their impact on housing cost.

-- In all cases involving affordable housing ,

-- no land use conversion and licensing charges should be levied,

-- building scrutiny fee should be charged @25% of prescribed rates

--whereas EDC should be charged @50% for EWS and@ 75% for other categories.

Way Forward

xiii. Adopting project based approach

- For cross-subsidy /cost – reduction--project based approach adopted for creating mass housing.
- Housing project to be invariably mix of all categories -HIG, MIG besides EWS and LIG-- to make project viable /self-sustaining.
- Addition of commercial component to help in making project profitable/ attractive /viable

xiv. Single Window Clearance

- For early completion of project
- avoiding cost escalation
- to approve projects on time bound basis/ prescribed time frame--
- not exceeding three months

Xv Green Buildings

Designing affordable housing as Green Buildings

- reduces operational cost of house over entire life cycle
- due to reduced energy / water consumption
- lower generation of waste – making dwellings really cost-effective / Affordable.

Cost Reduction in Housing-Green Buildings

- "A green building is one which uses less water, optimises energy efficiency, conserves natural resources, generates less waste and provides healthier spaces for occupants, as compared to a conventional building."



Cost Reduction in Housing-Green Buildings

- A green building is one which

***Conserves
natural
resources***



***Uses less
Water***



***Optimizes
Energy
Efficiency***



***Generates
less
waste***



***Provides
healthier
spaces***

Cost Reduction in Housing-Green Buildings

ENERGY
USE

24%^{*} - 50%^{**}

CO₂
EMISSIONS

33%^{***} - 39%^{**}

WATER
USE

40%^{**}

SOLID
WASTE

70%^{**}

Green Buildings Can Reduce...

Way Forward

xvi. Innovative and state of art architectural designs involving :

- i. providing high building efficiency,
- ii. optimum utilization of land resource,
- iii. optimum structural design,
- iv cost-effective building technologies/services,
- v use of large prefabricated components
- vi minimum maintenance and upkeep.

xvii. Adopting co-operative based approach

Creating co-operative societies of beneficiaries --- for involving stakeholders

-- sourcing support /resources for-- creating adequate housing stock

,-- minimising transfer of units /procuring easy loans from financial institutions. **xvii.**

Xviii Using locally available building materials

--for promoting cost-effectiveness / utilizing waste.

--Encouraging research / promoting industries producing materials from industrial/ agricultural waste

-- to increase supply of cost-effective materials/

-- reduce depletion of non-renewable resources

Way Forward

- **xix Treating Affordable Housing a volume Game**
- Affordable housing treated not a profit game but a volume game
- Creating large housing stock
- with minimum cost,
- within a short span of 18-24 months
- disposing off entire stock within the time span of project.
- Taking large housing projects with units ranging from 1000-1500 for promoting economy of scale-- have proved highly successful
- **xx. Separating 'Right to Shelter from Right to Ownership of Shelter'**
- Concept to help in:
 - -- promoting optimum utilization of available housing stock
 - -- minimising speculation
 - -- eliminating transfer of affordable housing to non-beneficiaries/
higher strata

Way Forward

xxi Creating Multiple Options for Shelter-----Night shelters, mobile housing, bachelor/single accommodation , rental housing, transit accommodation, hostels etc -- for augmenting shelter/ minimizing quantum of formal and expensive housing-- based on

- -- affordability,
- -- family size,
- -- shelter requirements,
- -- marital status,
- -- type of avocation,
- -- skill, tenure etc.
- **xxii. Creating Built up Houses for EWS in Private Colonies/Townships**
- Reservation made in private colonies -- transferred to Housing Board/ Development Authority,
- -- mandated constructing affordable houses for identified beneficiaries.
- Proportion of affordable housing-- to be increased
- .Reservation made irrespective of size of colony / group housing.
- Under PMAY, EWS housing placed at 35% -- minimum project size under PPP model -- 250 house, carpet area limited to 30 sqm,-- adopted / made integral part of state / local legal framework.

Way Forward

xxiii. Siting of the affordable housing projects

- ***Siting with care / caution to ensure project success / viability***
- ***Projects constructed not far away from place of work for minimising travel / expenditure on travel.***
- ***Making available cost- effective, efficient /reliable public transport --- critical for acceptability/success of project.***
- **xxiv Providing Essential/ Basic Amenities as Integral Part of Project**
- **Basic amenities involving :**
- ***--education,***
- ***--healthcare ,***
- ***-- recreation ,***
- ***-- child care,***
- ***-- shopping,***
- ***--community centre,***
- ***--open spaces etc to make project self- contained and self-sustainable.***

Way Forward

- **xxv Formulating well defined, transparent and objective guidelines**
- **Creating a networked system of sharing information, critical / essential for:**
 - **-- identifying right beneficiaries -- eliminating speculators,**
 - **-- minimising multiple ownership and**
 - **-- illegal transfer/ sale of units at local /state / national level**
- **xxvi. Using PPP Model**
- **Housing, largely a private sector activity,**
- **leveraging land by PPP models, would improve supply of affordable housing.**
- **xxvii. Creating Revolving Fund**
- **--Promoting easy access to institutional finance at affordable cost**
- **--Creating a dedicated Revolving Fund at national /state level**
- **-- contributions by central / state governments/ urban local bodies/ development authorities / assistance provided under sponsored schemes,.**
- **xxviii. Involving Beneficiaries**
- **Involving beneficiaries-- ,in cash, kind or both**
- **-- critical for success of project**
- **-involving slum up-gradation /provision of shelter.**

Way Forward

➤ xxix **Creating JV or PPP** with government agencies

➤ -- for land where approvals already in place.

-Shortening period of construction

- limited to 12-18 months --phasing project.

➤ Lowering cost of construction below Rs.1000/- per sq. ft.

➤ Lowering ticket size; ensure 100% sale within a short span

➤ High sale/ volume of project.

xxx **Involving enablers, providers** and executor to work in a united /single platform

xxxi **Eliminating speculator**

xxxii including **mass housing / affordable housing zone** in city plans - develop them on a time bound basis.

xxxvi **Promoting rental housing schemes** in urban areas.

Promoting Cost- Reduction-Building Material

- **Using local materials -- in natural form**
- **Using recycled materials from demolished structures- bricks etc.**
- **Using building recycled components - doors, windows, fixtures furniture**
- **Using materials-- made from waste- fly ash bricks etc.**
- **Using materials-- requiring minimum maintenance and upkeep/replacement**
- **Using materials-- which are light weight-- Using materials which are easy to handle/ not occupying large space**
- **Using materials-- which can be handled by locally available labour and manpower**
- **Using materials --which do not requiring specialized cutting and shaping**
- **Using materials- not requiring special machinery and manpower for handling**
- **Using materials- available in standard shape and size, having little variations**
- **Using materials- requiring minimum fixing/ bonding materials.**
- **Using limited -- materials for flooring, roofing construction- to avoid**

Materials to be used in Building



Project Management


- **Promoting Effective/efficient/ professional management**
- **Minimising time for construction / completion**
- **Minimizing overhead expenses to optimize housing cost**
- **Minimising cost of materials--Entering into long term contracts for essential materials- cement/ steel/sand/ tiles etc**
- **Outsourcing part of work - to trained petty contractors**
- **Promoting effective-- checks & balances**
- **Promoting security --of site /materials**
- **Promoting effective planning of work schedule**
- **-- Ensuring quality**
- **Procuring materials directly from reputed manufacturers**
- **Avoiding hasty /unscheduled purchases**
- **Completing project within given time span**
- **Eliminating time over-run/ cost over-run**

Financing- Achieving Economy

- Reducing cost of money
- Sourcing funds from reputed institutions offering lowest rates of interest
- Completing project in minimum time span
- Ensuring shorter working capital cycle
- Making beneficiaries part of the project in financing
- Sourcing land at most competitive price
- Keeping Builders, Contractor margins low
- Rationalizing Government charges, taxes, levies and fees
- Minimizing transportation
- Minimizing specialized/hired machinery
-

Construction Technology

- **Making use of state of art construction technologies to promote cost-effectiveness**
- **Promoting technologies - for time reduction besides ensuring appropriate quality**
- **Using technologies for saving on -- labour, space, materials and money**
- **Using innovative walling and roofing system**
- **Using Pre-cast and ferro- cement components**
- **Using pre-cast Aerated Cement Concrete Blocks**
- **Using technologies involving minimum wastage of materials**
- **Promoting technologies for repetitive work**
- **Using technologies for creating materials locally**
- **Using technologies for brick laying and plastering**
- **Using innovative technologies for sewage water treatment-phytoremediation system**
- **Using technologies which need low operational and maintenance cost**
- **Using state of art locally available refined technologies**



CONCLUSIONS

Approach to Affordable Housing

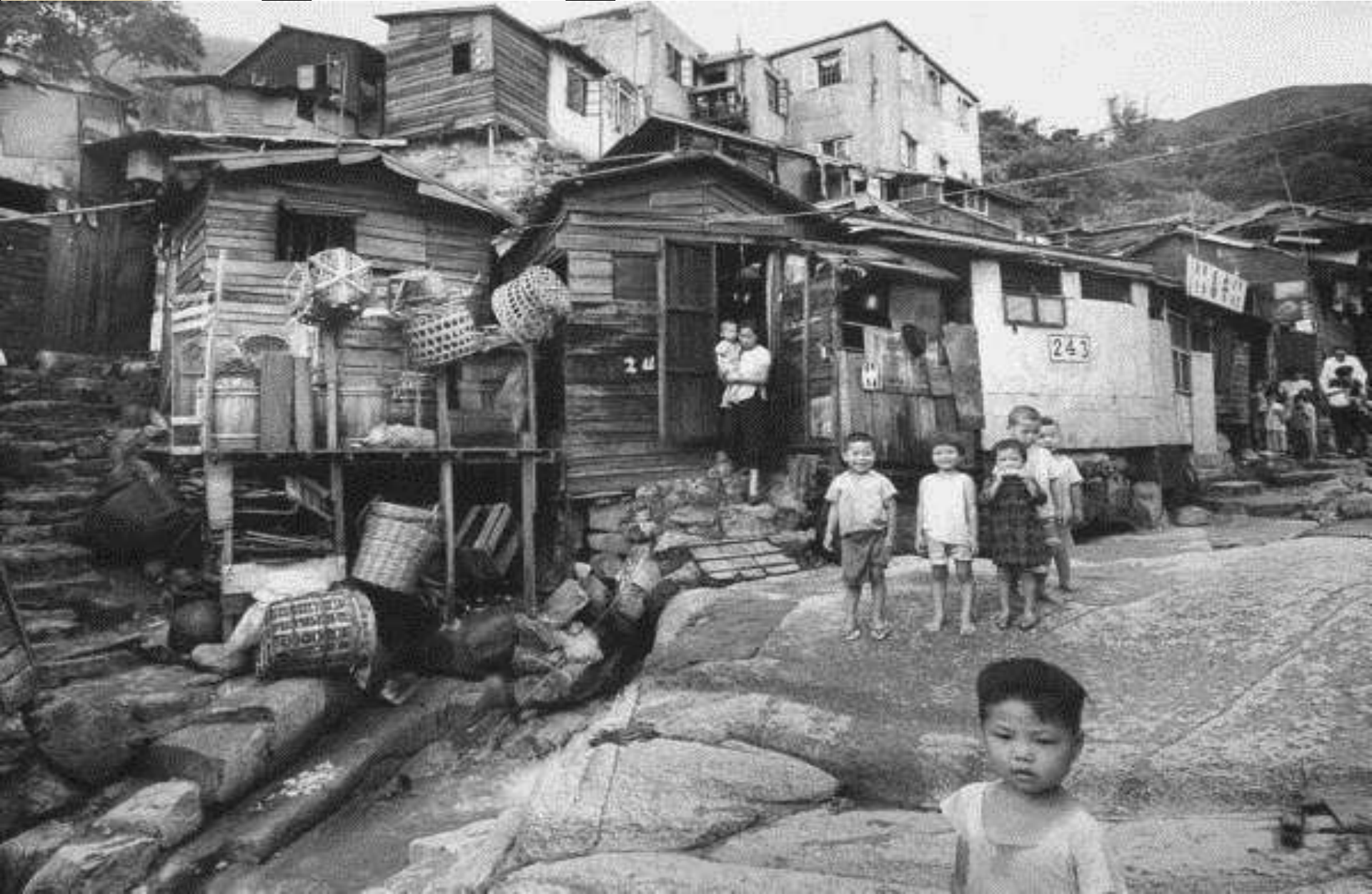
- **Separating 'Right to Shelter from Right to Ownership of Shelter**
- **- with focus on providing shelter and not creating ownership**
- **Graduating to affordable living from affordable housing**
- **Looking at life-cycle cost of housing instead of initial cost**
- **Treating Affordable Housing-- a volume Game & not profit game-**
- **Identifying Right beneficiaries**
- **Registrating Migrants**
- **Moving from construction to manufacturing of shelter- Technologies**
- **Creating Multiple Options for Shelter**
- **Promoting principle of limited land- unlimited space**
- **Promoting Multiple use of land- 24x7**
- **Adopting volume instead area- to define dwelling size**
- **Providing more flexibility in designing**
- **Adopting project based approach**
- **Empowering Rural India**

Conclusion

Affordable Housing can be effectively leveraged to

- create/ expand large job market for unskilled/ semi-skilled rural migrants;
- revitalize Indian industry
- promote economy;
- achieve higher growth rate and
- marginalize poverty in urban India.
- **Affordable Housing –**
- --has enormous capacity to make—
- -- urban / rural centers
- --Smart, healthier,
- -- more productive,
- more effective, efficient, livable ,
- sustainable, inclusive, Resilient safe
- better planned,
- slum free,
- with assured quality of life.

Hong Kong in the 60s



HONGKONG - TODAY



Slums in London in 1800s



London Today



Singapore in 60's



SINGAPORE-TODAY



***If they can do it
Surely we all can also
do it***

Thank You!

