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Affordable Housing in India

An Inclusive Approach to Sheltering the Bottom of the Pyramid

Urbanisation and Housing Shortage in India

As per 2011 census, the country had a population of 1,210.98 million, out of which, 377.10 million (31.16%) lived in urban areas. During 2001-2011, the urban population of India grew at a CAGR of 2.8%, resulting in the increase in level of urbanisation from 27.81% to 31.16%. This growing concentration of people in urban areas has led to problems of land shortage, housing shortfall and congested transit and has also severely stressed the existing basic amenities such as water, power and open spaces of the towns and cities.

According to the 2011 census, the housing stock in urban India stood at 78.48 million for 78.86 million urban households. Though the gap between household and housing stock is narrowing, actual shortage is high due to a certain part of the current stock being dilapidated and people living in congested dwellings.

Urbanisation has resulted in people increasingly living in slums and squatter settlements and has deteriorated the housing conditions of the economically weaker sections of the society. This is primarily due to the skyrocketing prices of land and real estate in urban areas that have forced the poor and the economically weaker sections of the society to occupy the marginal lands typified by poor housing stock, congestion and obsolescence.

Considering these factors, there currently exists a wide gap between the demand and supply of housing (both in terms of quantity and quality) in urban India. According to estimates of the Technical Group constituted by the Ministry of Housing and Urban Poverty Alleviation (MHUPA), the urban housing shortage in the country at the end of the 10th Five-Year Plan was estimated to be 24.71 mil-

Figure 1 Housing Shortage in Urban India

	Monthly Per Capita Expenditure	Estimated Number of Households (2007)*	Housing Shortage in million (2007)	Percentage Shortage
EWS	0 - 3,300	21.81	21.78	99.9%
LIG	3,301 - 7,300	27.57	2.89	10.5%
MIG	7,301 - 14,500	16.92	0.04	0.2%
HIG	14,501 and above			
Total Shortage		66.30	24.71	37.3%

Source: Report of the Technical Group (11th Five Year Plan: 2007-12) on Estimation Of Urban Housing Shortage
*Distribution of 66.3 million households estimated from percentage of MPCE classes in NSS 60th Round (Jan-Jun 2004) NSS Report No. 505

[1]Making Urban Housing Work in India, RICS India

lion for 66.30 million households. The group further estimated that 88% of this shortage pertains to houses for Economically Weaker Sections (EWS) and another 11% for Lower-Income Groups (LIG). For Middle- and High-Income Groups (MIG and HIG), the estimated shortage is only 0.04 million. During the 11th Five-Year Plan, the group estimated that the total housing requirement in Indian cities (including backlog) by end-2012 will be to the tune of 26.53 million dwelling units for 75.01 million households. If the current increase in backlog of housing is maintained, a minimum of 30 million additional houses will be required by 2020[1].

In India, private developers primarily target luxury, high-end and upper-mid housing segment, since it fetches a premium over low-income housing. This leads to a sustained supply for this segment, increasing market competitiveness for developers. On the other hand, the housing for the poor and EWS is primarily provided by the government for welfare purposes. However, it is insufficient compared to the existing shortage in the segment. Thus, it is the housing requirements of the lower middle-income and lower income groups that are grossly neglected, and there exists a huge dearth in the supply of affordable houses primarily demanded by this income group in India.

In this whitepaper, we will explore major issues in the development of affordable housing in India and steps taken by the Government and private sector to address them inclusively.

Affordable Housing Defined

There is no clear-cut definition of the term 'affordable', as it is a relative concept and could have several implied meanings in different contexts.

- According to the RICS Report on Making Urban Housing Work in India, affordability in the context of urban housing means provision of 'adequate shelter' on a sustained basis, ensuring security of tenure within the means of the common urban household. RICS Practice Standard Guidance Notes (GN 59 2010) states that 'affordable housing is that provided to those whose needs are not met by the open market'.
- According to the KPMG Report on 'Affordable Housing – A Key Growth Driver in the Real Estate Sector', affordable housing is defined in terms of three main parameters, namely income level, size of dwelling unit and affordability. Whilst the first two parameters are independent of each other, the third is a

dependent parameter that can be correlated to income and property prices (Figure 2).

- As per US Department of Housing and Urban Development, the generally accepted definition of housing affordability is 'for a household to pay no more than 30% of its annual income on housing. Families who pay more than 30% of their income for housing are considered cost burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care'.
- According to the Task Force on Affordable Housing set up by the MHUPA in 2008, affordable housing for various segments is defined by size of the dwelling and housing affordability derived by the household income of the population (Figure 3).
- The JNNURM Mission Directorate of MHUPA has also defined affordable housing in its amended Guidelines for Affordable Housing in Partnership released in December 2011 (Figure 4).

Figure 2 Definition of Affordable Housing – KPMG

	Income Level	Size of Dwelling Unit	Affordability
EWS	<INR 1.5 Lakhs per annum	Upto 300 sq ft	**EMI to monthly income:** 30% to 40% **House price to annual income ratio:** Less than 5:1 (Task Force headed by Deepak Parekh)
LIG	INR 1.5 – 3 Lakhs per annum	300 – 600 sq ft	
MIG	INR 3- 10 Lakhs per annum	600 – 1,200 sq ft	

Source: KPMG

Figure 3: Definition of Affordable Housing – MHUPA (2008)

	Size	Cost	EMI or Rent
EWS	300 - 600 sq ft carpet area	not exceeding four times the household gross annual income	not exceeding 30% of gross monthly income of buyer
MIG	not exceeding 1,200 sq ft carpet area	not exceeding five times the household gross annual income	not exceeding 40% of gross monthly income of buyer

Source: Task Force on Affordable Housing, MHUPA, 2008

Figure 4: Definition of Affordable Housing – MHUPA (2011)

	Size	EMI or Rent
EWS	• minimum of 300 sq ft super built-up area • minimum of 269 sq ft (25 sq m) carpet area	not exceeding 30–40% of gross monthly income of buyer
LIG	• minimum of 500 sq ft super built-up area • maximum of 517 sq ft (48 sqm) carpet area	
MIG	• 600–1,200 sq ft super built-up area • maximum of 861 sq ft (80 sqm) carpet area	

Source: Guidelines for Affordable Housing in Partnership (Amended), MHUPA, 2011

Jones Lang LaSalle's Definition of Affordable Housing

Whilst most of the definitions for affordable housing consider area, price and affordability of the occupier, the key ideas of making affordable housing work through adequate amenities and appropriate location remain unanswered. Per our assessment, affordable housing has to be defined on the basis of four criteria (Figure 5):

Minimum volume of habitation

- As pressure on urban land increases, architecture of all forms, be it commercial or residential, are going vertical. Whilst most definitions adopt an area standard, we have an additional volume standard. This provides flexibility to architects to work on vertical planning of a dwelling unit as well.

Provision of basic amenities

- Whilst most definitions dwell on minimum area and cost considerations, provision of basic amenities such as sanitation, adequate water supply and power to the dwelling unit is crucial. Also, provision of community spaces and amenities such as parks, schools and healthcare facilities, either within the project or in the neighbourhood, are desirable depending upon the size and location of the housing project.

Cost of the house

- Whilst assessing affordability of the buyer, the cost of the house should consider not only the purchase costs but also the maintenance costs of the dwelling unit. Lower operational and maintenance costs using sustainable features is key to any

affordable housing project. While LIG and EWS are likely to get public and private subsidies at the time of buying a house, high operational costs might lead them again to squatter settlements and slums.

Location of the House

• An affordable housing project should be located within reasonable distances from workplaces and should be connected adequately through public transport. If housing is developed very far away from major workplace hubs in a city or entails expensive transport costs to the city, whilst price of the residential units might be low due to lower land costs, the Housing + Transportation (H+T) Affordability is greatly affected. In the case of affordable housing, key industrial nodes can also serve as workplace hubs.

Figure 5: Definition of Affordable Housing – Jones Lang LaSalle (2012)

|	Minimum Volume of Habitation	Provision of Basic Amenities	Cost of the House	Location of the House
EWS	• minimum of 250 sq ft carpet area • minimum of 2,250 cu ft internal volume	• sanitation, adequate water supply and power • provision of community spaces and amenities such as parks, schools and healthcare facilities, either within the project or in the neighbourhood, depending upon the size and location of the housing project	• cost of the house such that EMI does not exceed 30–40% of gross monthly income of the buyer • reasonable maintenance costs	• located within 20 km of a major workplace hub (could be suburban hubs as well) in the city • adequately connected to major public transit hubs
LIG	• 300–600 sq ft carpet area • 2,700–5,400 cu ft internal volume			
MIG	• 600–1,200 sq ft carpet area • 5,400–10,800 cu ft internal volume			

Source: Jones Lang LaSalle Research, 2012

Income Levels and Housing Affordability

The relationship between income and affordability for various income groups follows a nonlinear trend. The costs on food, non food essentials and house rent form a significant portion of income for lower-income groups. As we move towards higher-income levels, the rise in costs do not increase at the same pace. Disposable surplus income, which is often used to purchase a new house, drops significantly at lower-income levels and is higher at higher-income levels (Figure 6). Thus, people of higher-income levels can better afford to purchase new houses, owing to higher disposable surplus incomes.

Moreover, it can be seen that this disposable surplus is highly sensitive to incremental change of expenditure. For example, if house rents increase from 15% to 20%, the disposable surplus for a LIG household (person with monthly income of INR 10,000) reduces to 30% from 35%. Whereas for a person with monthly income around INR 120,000, it can be seen that when rent increases from 15% to 20%, the corresponding reduction in surplus income is from 64% to 59% (Figure 7).

Figure 6: Disposable Surplus for House Purchase in Various Income Groups
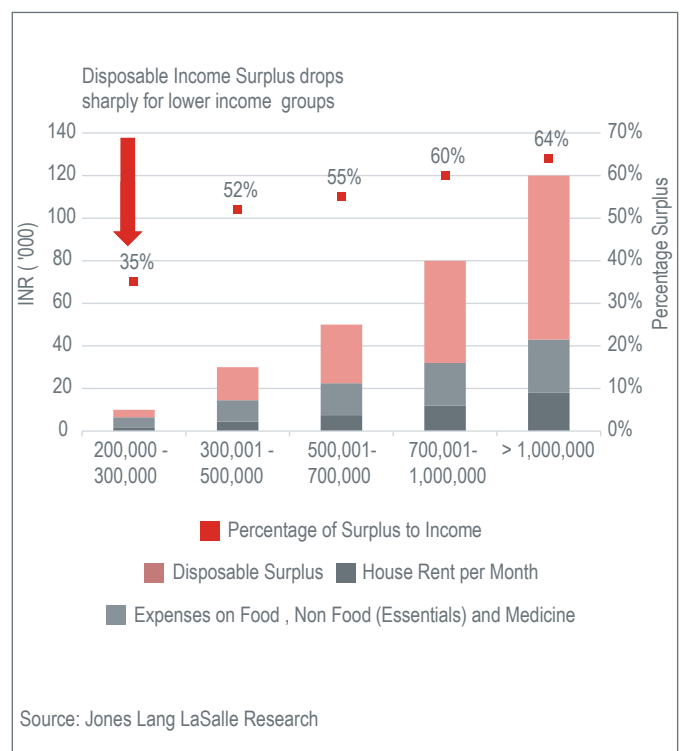
Source: Jones Lang LaSalle Research

Figure 7: Sensitivity of Rent as Percentage of Income for Persons of Various Income Groups

Source: Jones Lang LaSalle Research. Note: Trendlines are logarithmic trends of decrease in percentage of disposable income surplus upon increase in rent as percentage of income
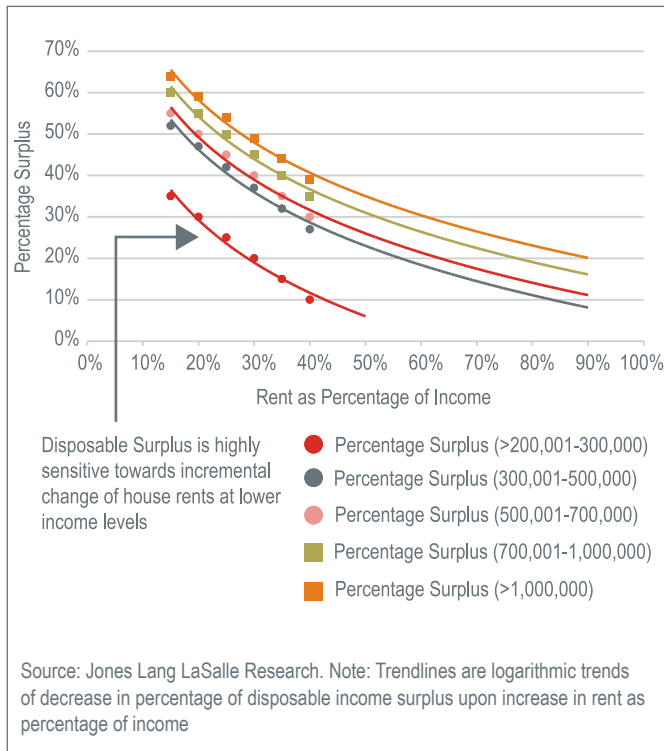
Although the purchasing capacity is lower for lower-income groups, there exists a large demand for housing amongst this segment. However, the present market is characterized by an undersupply of residential products catering to this income segment (Figure 8). There exists a tremendous potential for housing in which residential units are priced at less than INR 10 Lakhs.

Figure 8: Demand-Supply Dynamics of Housing for Various Income Groups
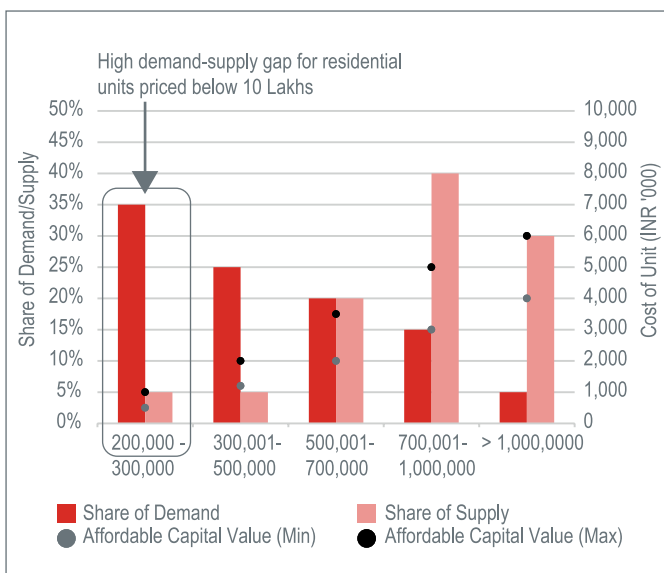
Issues in the Development of Affordable Housing

Developing affordable housing in Indian cities faces significant challenges due to several economic, regulatory and urban issues. Whilst the lack of availability or urban land, rising threshold costs of construction and regulatory issues are supply-side constraints, lack of access to home finance is a serious demand-side constraint, which impacts the ability of low-income groups to buy housing in the organised sector. Whilst some of these are gradually being mitigated, concerted efforts are required by multiple institutions to facilitate mass development in this sector.

Lack of Availability of Urban Land

With high population density, which is growing due to rapid urbanisation, there exists a huge demand for land in urban India. The real shortage has been further exacerbated artificially by poorly conceived central, state and municipal regulations. As a result, land prices in India are much higher than intrinsic levels that can support mass real estate developments.

Excessive Control on Development of Land Creates Artificial Shortage

By excessively controlling the volume of construction in centrally located areas and by making land recycling difficult, some regulations tend to centrifugally push urban development towards the periphery. This has resulted in longer commuting trips, with public transport becoming difficult to operate and unnecessary extension of urban infrastructure further than what could have been the case if land supply had been unconstrained.

Strict regulations, when not implemented correctly, lead to rampant corruption as there are multiple stakeholders having large stakes in real estate development.

Lack of Marketable Land Parcels

Government authorities or state-owned entities such as railways and ports own large tracts of urban land, which are nonmarketable, and this results in their inefficient use, which is incompatible with its real market value. Most of these land parcels are located in central areas, as they have been inherited colonially, and they have high value for compatible uses today. These areas also provide for proliferation of slums and squatter settlements, as authorities are often incapable of monitoring their own holdings regularly.

Titling Issues and Lack of Information

Strong protection to property rights is essential – formal recognition by the state through a system of titles as well as the facilitation by

Figure 9: Land Titles in India

Whilst Indian law requires compulsory registration of the sale of land, it doesn't ask the registration authority to verify history of the land or ownership from the seller, weakening the protection to the buyer. Hence, land registration is not registration of title but of deed of transaction. It is a fiscal instrument for the state, allowing it to collect a 'fee', not providing the statutory support of certainty to title.

Also, it does not demand compulsory registration of all land-related transactions. State legislation on land acquisition, court decrees, land orders, heirship partitions, mortgages and agreements to sell do not require mandatory registration.

All of these forces combine to weaken land records and security of tenure. What we have in India today is a presumed ownership to land, which is questionable and can be challenged on multiple fronts: ownership, extent of boundaries, clauses, financial encumbrances and inheritance subdivisions. The formation of modern markets has required the replacement of traditional systems of common property rights and development, with a system that provides for individual rights and the ability to trade these rights. In such a scenario, it becomes important to strengthen formal system of registration and title of individual property rights.

(From JNNURM State Level Reform – Introduction of Land Title Certification System by Swati Ramanathan)

the state of efficient trade in rights through a process of registration. Both of these elements exist in India but are in incomplete form, which creates an inefficient market with significant disadvantages to buyers. As a result, entities and individuals who own land have a huge advantage over others who are landless.

Due to lack of transparency in getting correct transactional information, there are long search times and high costs involved in acquiring land. Whilst land records can be accessed through Department of Registration, the process involved is cumbersome, and transaction prices mentioned in the registration document might not be representative of actual transaction costs. Further, mapping of land inventory has not been carried out comprehensively nor is accessible to buyers. A large segment of intermediaries that deal with prospective buyers on the behalf of landowners are not certified or professional brokers. Thus, buyers not only lack access to information on options but also have to deal with a largely unorganised sector for their land transactions.

Rising Threshold Costs of Construction

Whilst price of premium residential projects are largely guided by land costs, construction costs have a significant share in the price of affordable housing. This is due to the fact that whilst land prices fall exponentially from city centre to peripheral locations of the city, construction costs generally follow a gradual trend from premium luxury, mid-income to low-income housing.

If land is acquired at a reasonable cost of INR 150–250 per sq ft, an affordable housing project with basic amenities (construction cost of INR 800–1,000 per sq ft) would result in a minimum selling price of INR 1,400–1,700 per sq ft (Figure 10). Thus, construction costs form nearly 50–60% of the total selling price for affordable housing. On the other hand, luxury housing projects in South Mumbai have construction costs of nearly INR 4,000–5,000 per sq ft, which is nearly 18–20% of the selling price of INR 20,000–25,000 per sq ft. Affordable housing projects get more affected by rising costs of construction than

premium projects. Hence, it becomes important that costs are minimised for construction of low-income housing whilst balancing the amenities provided as well as ensuring the safety and serviceability of the built structure during its lifecycle.

During the past decade, construction costs have significantly increased by nearly 80–100% due to the appreciation in prices of construction materials such as steel, cement and sand. Shortage of labour has also resulted in a rapid increase in wages.

Lack of Access to Home Finance for Low-Income Groups

Despite having an extensive network of financial institutions, banks and apex housing cooperative societies, low-income groups lack access to home finance. National Housing Bank, a fully owned subsidiary of the Reserve Bank of India, was set up primarily to accelerate housing finance activity in India and promote the Housing Finance Companies (HFCs) by providing them with financial support. It acts as the apex institution and regulator of the housing finance industry.

Figure 10: Estimated Construction Costs for Low-Income Housing

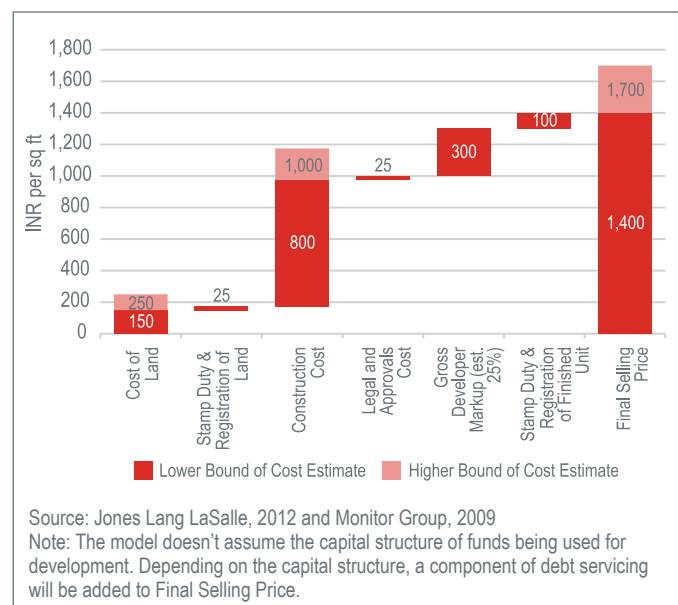Source: Jones Lang LaSalle, 2012 and Monitor Group, 2009
Note: The model doesn't assume the capital structure of funds being used for development. Depending on the capital structure, a component of debt servicing will be added to Final Selling Price.

Figure 11: Housing Finance Market in India

GROUP	SUBGROUP	CHANNEL	
Financial Institutions	Development Financial Institutions	NABARD, SIDBI →	
	Non-Banking Finance Companies	HFCs, Other NBFCs →	
Banks	Scheduled Commercial Banks	Private Banks, Public Banks →	**BENEFICIARIES**
	Cooperative Banks	Urban, District and State Cooperative Banks →	
Other Institutions	Agriculture and Rural Development Networks	Primary Land Development Banks →	
	Apex Cooperative Housing Societies	Housing Societies →	

Source: World Bank

Figure 12: Housing Finance Market Map

(in INR)

HOME LOAN SIZE

10 Lakhs

7 Lakhs

5 Lakhs

2 Lakhs

Select HFCs
Alternate means of income assessment for higher income customers such as supplier and customer checks, or MFI and chit fund savings history; guarantor typically required
• Eg. Dewan Housing
• Average Loan Size INR 650,000

Low-End Focused HFCs
• Limited geographic coverage and capacity
• Small ticket size of loans
• Eg. GRUH Finance
• Average Loan Size
• INR 445,000

Large Private Banks, HFCs
• Some low-income developer tie-ups, but strictly fomal sector
• Limited to no capability/interest in informal customer risk assessment
• Willing to give loans only on documented income amount
• Eg. HDFC, ICICI
• Average Loan Size INR 1.5 million

Largely Under-served

EASE OF ASSESSING RISK

Informal
• Earns in cash
• No formal income documents
• No formal residence or identity documents

• Salaried or self employed
• Significant proportion of undisclosed income
• Some residence/identity documents |

Formal
• Salaried with Pay-Slip
• Income Tax documentsResidence documents
• Identity documentsBank Account

Source: Micromortgages: A Macro Opportunity in Low Income Housing Finance, Monitor Inclusive Markets
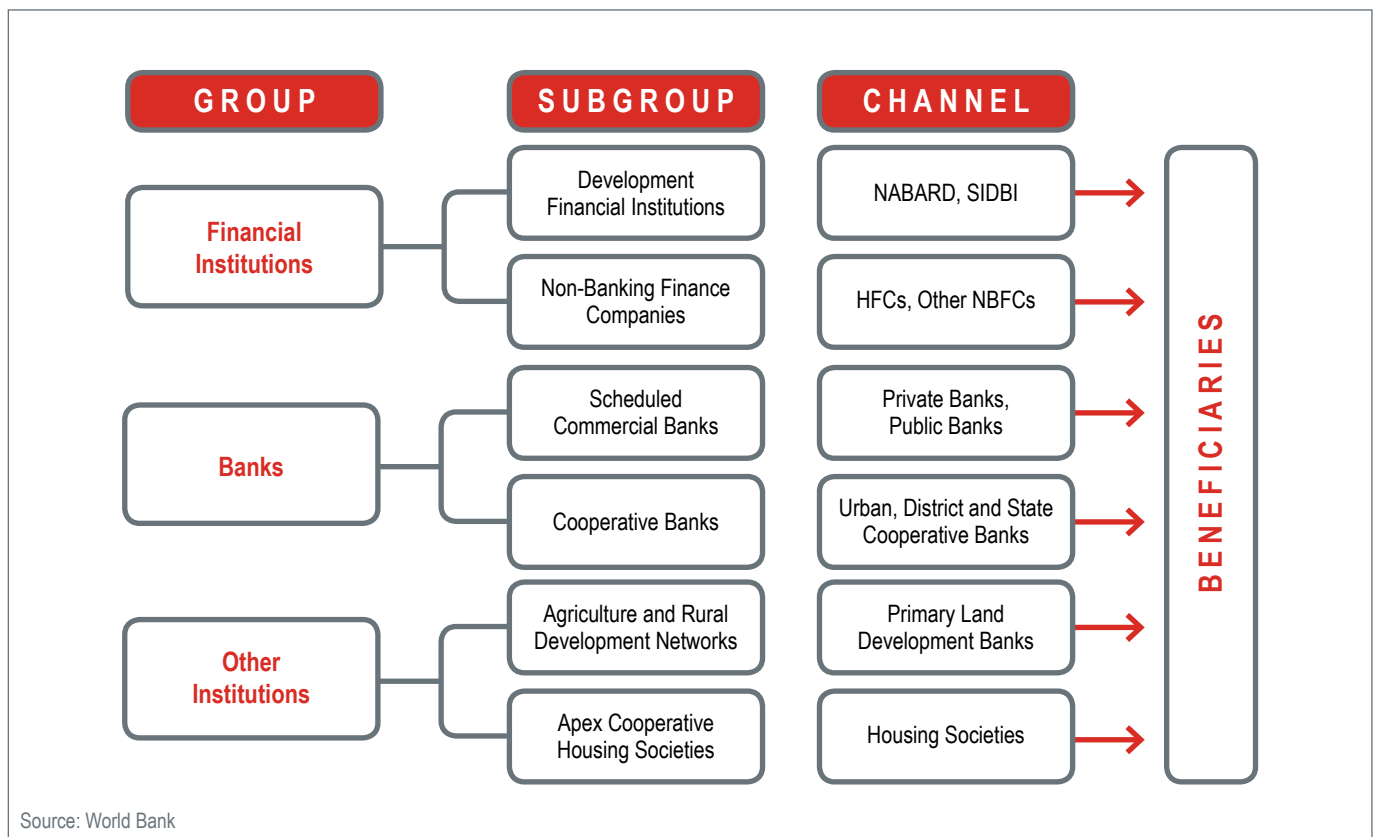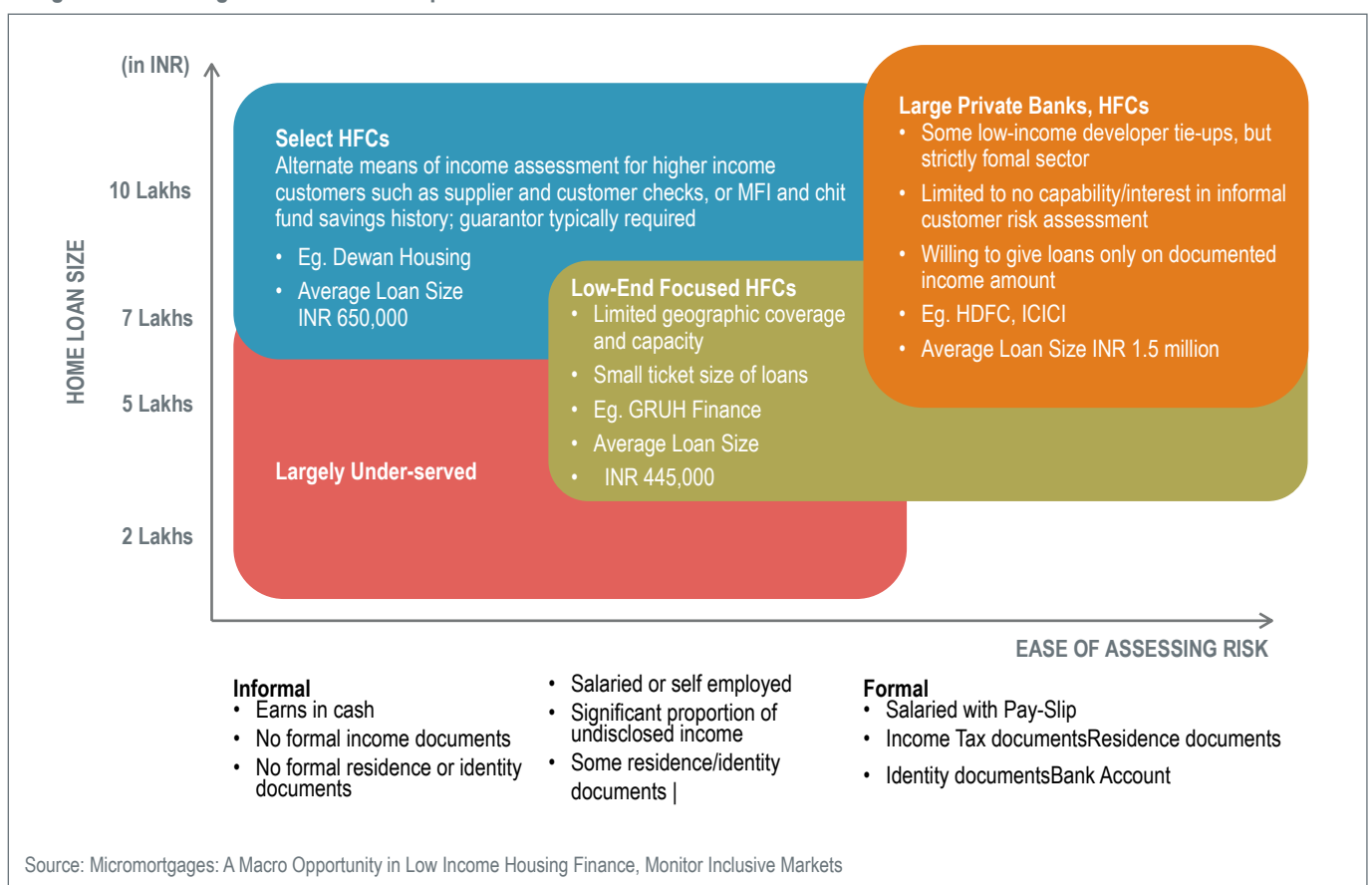
According to Monitor Inclusive Markets, the loan market of INR 3-10 lakhs is worth almost INR 1,100,000 crores (USD 220 billion). Despite this, majority of the loans disbursed by Housing Finance Companies (HFCs) are to Mid-Income and High-Income Groups in a loan bracket above INR 10 Lakhs (Figure 13). The key issue that deprives people from availing housing loan in the INR 3-10 Lakhs bracket is the perceived high risk i.e. apprehensions of loans turning into NPAs and uneven payment patterns. As per Ministry of Labour and Employment, 65%-70% of the workers in urban areas are employed in the unorganised sector. Since they are paid in cash and lack formal documents of identification, address and income, they remain underserved by HFCs.

Regulatory Constraints

There are severe regulatory constraints to real estate development in Indian cities, which range from lengthy approval processes to lack of clarity in urban planning.

Lengthy Approval and Land Use Conversion Process

The process of real estate development is particularly affected by the efficiency of urban local bodies, which undertake city planning, deliver utility services and regulate controls on development through approvals. Development projects in Indian cities have to undergo
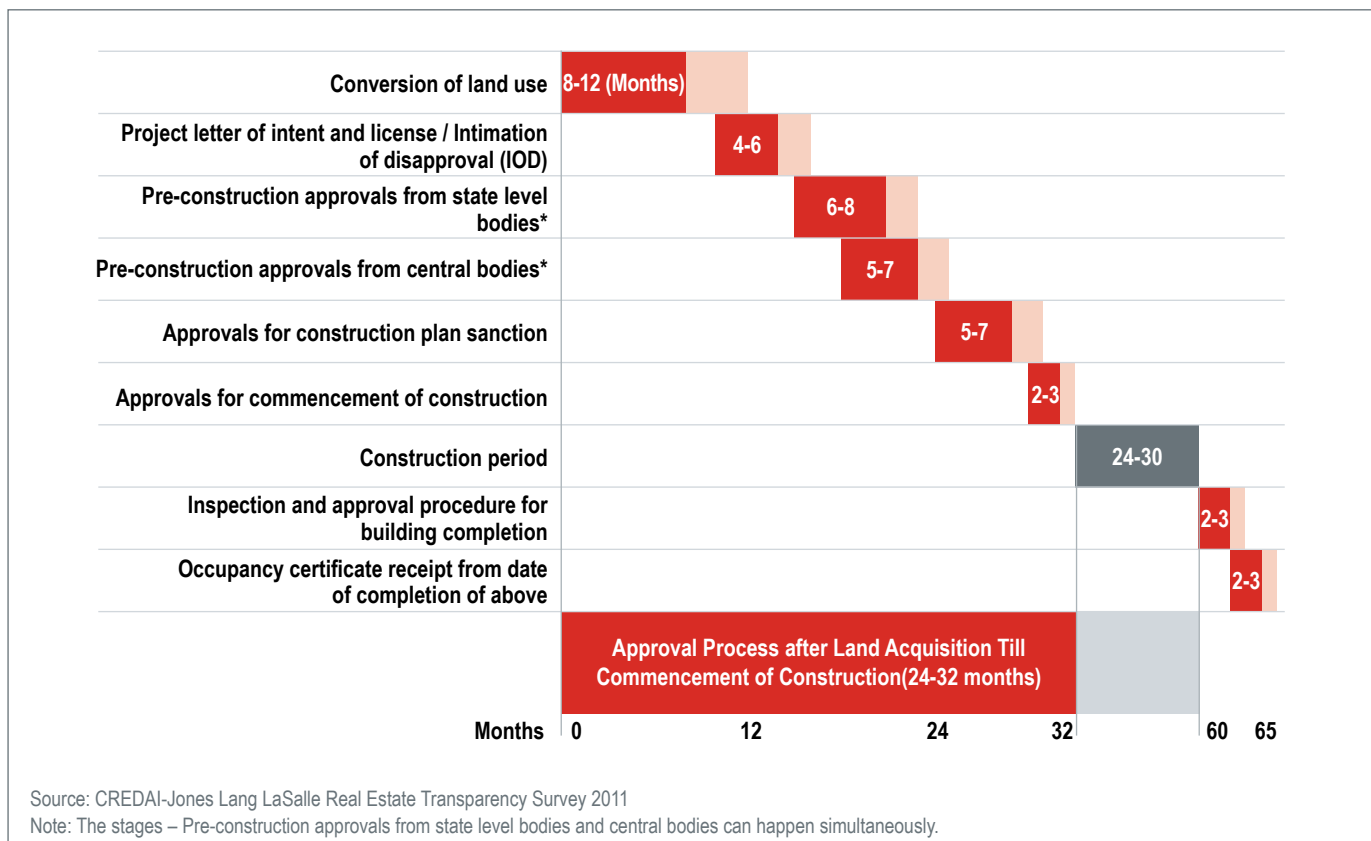
Figure 13: Home Loan Disbursals by Housing Finance Companies (HFCs)

Source: National Housing Bank
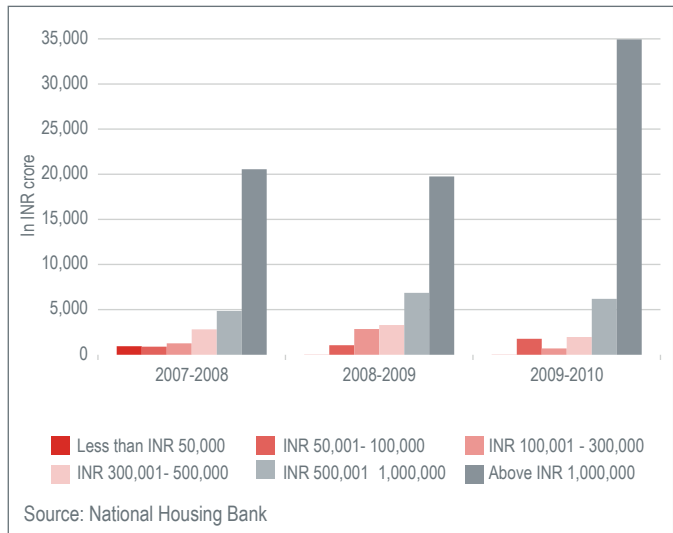
a lengthy approval process, which results in delay in projects, eventually escalating construction costs, which are borne by the user or the buyer (Figure 14). India is ranked 177 out of 183 countries with respect to dealing with construction permits[2], which indicates the challenge developers face in India in development of real estate.

To obtain a plan sanction for a project, the developer has to visit

Figure 14: Multitude of Statutory Approvals adds 2-2.5 Years to the Pre-Construction Process

Stage	Duration
Conversion of land use	8-12 (Months)
Project letter of intent and license / Intimation of disapproval (IOD)	4-6
Pre-construction approvals from state level bodies*	6-8
Pre-construction approvals from central bodies*	5-7
Approvals for construction plan sanction	5-7
Approvals for commencement of construction	2-3
Construction period	24-30
Inspection and approval procedure for building completion	2-3
Occupancy certificate receipt from date of completion of above	2-3

Approval Process after Land Acquisition Till Commencement of Construction(24-32 months)

Months   0   12   24   32   60   65

Source: CREDAI-Jones Lang LaSalle Real Estate Transparency Survey 2011
Note: The stages – Pre-construction approvals from state level bodies and central bodies can happen simultaneously.

[2] Doing Business 2011, World Bank and International Finance Corporation

nearly 40 departments starting from central (environment, airport authority etc.), state governments (revenue, fire, high rise, environment etc.) and local bodies (water, sewage, traffic etc.). From entering into an agreement for land purchase to the date of commencement of construction, it takes nearly two to three years. With banks not favouring loans against land, the developers have to depend on private borrowing at exorbitant interest rates. Direct impact due to cost of finance itself is up to 10– 25 % of sale price[3].

Lack of Clarity in Building Bylaws and Guidelines

The building bylaws and rules for Floor Space Index (FSI), zoning and development plans formulated by the Urban Local Bodies (ULBs) and Urban Development Departments (UDDs) in India lack clarity and have several overlapping guidelines for real estate development. This makes planning for construction projects difficult, as acquisition of land parcels are done with a long-term view, and regulations sometimes get modified drastically when implementation of project begins.

Continuation of Archaic Laws

Several archaic laws such as the Rent Control Act have been detrimental to the urban fabric resulting in the decay of housing stock, particularly in Mumbai. It hampers redevelopment of areas with old properties and leads to further increase in shortage due to obsolescence and congestion.

Despite these issues, both government as well as private players are increasingly exploring the development of housing for low-income groups in Indian cities. In the following sections of the whitepaper, we shall discuss the efforts of the government and private developers to improve supply in this segment.

Policy Framework and Regulations for Affordable Housing

Central Level Schemes

Several policies adopted by Central Government have assisted in the delivery of affordable housing for the EWS, LIG and lower MIG. The first National Housing Policy was formulated in 1988. It was followed by a series of public sector interventions and related developments of human settlement sector in India, with the formulation of National Housing Policy in 1994, National Housing and Habitat Policy (NHHP) in 1998 and follow-up of 74th

Constitution Amendment of 1992. These policy initiatives focused on transition of public sector role as `facilitator', increased role of the private sector, decentralization, development of fiscal incentives and concessions, accelerated flow of housing finance and promotion of environment-friendly, cost-effective and pro-poor technology. The NHHP introduced landmark initiatives such as involvement of multiple stakeholders, repeal of Urban Land Ceiling Act and permitting foreign direct investment in housing and real estate sector.

However, all these policies were generic and applicable to both rural and urban areas. Taking into account the emerging challenges of required shelter and growth of slums, the first policy specific to urban areas, the National Urban Housing and Habitat Policy was announced in December 2007.

National Urban Housing and Habitat Policy (NUHHP), 2007

NUHHP 2007 has identified 'Affordable Housing for All' as a key focus area to address concerns that could potentially impede sustainable urban development. The policy seeks to promote various types of partnerships between public, private, cooperative and the institutional sectors in order to attain some of the objectives listed below:

• facilitating accessibility to serviced land and housing with focus on economically weaker sections and low-income group categories;

• land assembly, development and disposal to be encouraged by both private and public sectors;

• forging strong partnerships between public, private and cooperative sectors for accelerated growth in the housing sector and sustainable development of habitat;

• accelerating the pace of development of housing and related infrastructure;

• creating adequate housing stock both on rental and ownership basis with special emphasis on the economically weaker sections through appropriate capital or interest subsidies; and

• using technology to modernise the housing sector and enhance energy and cost efficiency, productivity and quality.

Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

JNNURM was launched in December 2005 with an aim to encourage and expedite urban reforms in India. For the housing sector in particular, its main aim was construction of 1.5 million houses for the urban poor during the mission period (2005–2012) in 65 mission cities (Figure 15).

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[3]Mission Transparency, CREDAI

Figure 15: Financing of Projects under JNNURM

Category of Cities	Grant Central Share	State / ULB / Parastatal Share*
cities with above 4 million population as per 2001 census	50%	50%
cities with above 1 million population but less than 4 million population as per 2001 census	50%	50%
cities/towns in north-eastern states and Jammu and Kashmir	90%	10%
Other Cities	80%	20%

Source: Modified Guidelines for Submission on BSUP, Feb 2009, MHUPA
Note: The percentage figure is on total project cost.
*Including Beneficiary Contribution

- *Basic Services for the Urban Poor (BSUP)* – The scheme is managed by the Ministry of Urban Development. It seeks to provide seven entitlements or services – security of tenure, affordable housing, water, sanitation, health, education and social security to low-income segments in the 65 mission cities

- *Integrated Housing and Slum Development Programme (IHSDP)* – Integrated Housing and Slum Development Programme aims to combine the existing schemes of Valmiki Ambedkar Awas Yojana (VAMBAY) and National Slum Development Programme (NSDP) for having an integrated approach in ameliorating the conditions of the urban slum dwellers who do not possess adequate shelter and reside in dilapidated conditions. The scheme is applicable to all cities and towns as per 2001 census except cities/towns covered under BSUP.

  -The sharing of funds would be in the ratio of 80:20 between Central Government and State Government/ULB/Beneficiaries.

  - A minimum of 12% beneficiary contribution is stipulated, which in the case of SC/ST/BC/OBC/PH and other weaker sections is 10%.

- *Affordable Housing in Partnership (AHIP)* – The scheme of Affordable Housing in Partnership aims to promote various types of public-private partnerships amongst the private sector, cooperative sector, financial services sector, state parastatals and urban local bodies, for realizing the goal of affordable housing for all. This scheme is a part of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and takes into account the experience of implementing Basic Services to the Urban Poor (BSUP) and Integrated Housing and Slum Development Programme (IHSDP).

  - modification in the guidelines of JNNURM (BSUP) to facilitate and incentivize land assembly for affordable housing.

- central assistance of 25% for the cost of the provision of civic services at an approximate cost of INR 5,000 crore.

- support the construction of 1 million affordable dwelling units in Phase I, with a minimum of .25 million EWS dwelling units.

- disbursement of funds linked to the actual provision of amenities. A normative cap per EWS/LIG dwelling unit is fixed in consultation with the states for the purpose.

Interest Subsidy Scheme for Housing the Urban Poor (ISHUP)

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Rajiv Awas Yojana

Rajiv Awas Yojana (RAY) for the slum dwellers and the urban poor envisages a 'Slum-free India' by encouraging states and union territories to tackle the problem of slums in a definitive manner.

RAY will provide the support to enable states to redevelop all existing slums in a holistic and integrated way and create new affordable housing stock. The existing schemes of Affordable Housing in Partnership and Interest Subsidy for Housing the Urban Poor (ISHUP) would be dovetailed into this scheme. No new projects under the BSUP and IHSDP scheme of the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) will be sanctioned once implementation of RAY scheme is taken up except to consume existing 11th Five-Year Plan allocations that may be left uncommitted.

The scope of RAY envisaged is as follows

- integrated development of all existing slums, notified or non-notified, i.e. development of infrastructure and housing in the slums or rehabilitation colonies for the slum dwellers or urban poor, including rental housing.

- development, improvement and maintenance of basic services to the urban poor, including water supply, sewerage, drainage, solid waste management, approach and internal roads, street lighting, community facilities such as community toilets and baths, informal sector markets and livelihoods centres.

- other community facilities like preschools, child care centres, schools, health centres to be undertaken in convergence with programmes of respective ministries.

- convergence with health, education and social security schemes for the urban poor and connectivity infrastructure for duly connecting slums with city-wide infrastructure facilities and projects.

- creation of affordable housing stock, including rental housing with the provision of civic infrastructure and services, on ownership, rental or rental-purchase basis.

External Commercial Borrowing for Affordable Housing

Under the Union Budget 2012–13, External Commercial Borrowing (ECB) has been allowed for affordable and low-cost housing. This has been done to ensure a lower cost of borrowing for the segment. Under the norms, ECB may have to be routed through the National Housing Bank (NHB), which could act as a centralised mechanism to help small developers avail the facility. The government would also allow developers to raise such debt only for projects where a significant portion of units (75–90%) are reserved for the LIG and EWS.State Sponsored Initiatives

State Sponsored Initiatives

Andhra Pradesh

- The masterplan of Hyderabad requires a reservation for affordable housing projects that comprise a minimum area of 4 hectares. Of the developable area, 5% has to be developed for EWS housing with the maximum plot size of 50 sqm. Another 5% is to be allotted to LIG housing with a maximum plot size of 100 sqm.

- For group housing schemes (including apartments, row housing, cluster housing, mixed housing units, gated developments and residential enclaves) with a minimum area of 4,000 sqm, 5% of units are to be set apart for EWS housing with a maximum unit area of 25 sqm. Additionally, 5% of units are to be set apart for LIG housing with a maximum unit area of 50 sqm.

- The plan also enlists a waiver of fees and other charges for affordable housing developments to the tune of 25% for LIG housing and 100% for EWS housing.

The state has also come up with the 'Rajiv Swagruha' project for 175,000 units across Hyderabad with the Andhra Pradesh Housing Board (APHB) executing the mandate of providing housing to the urban poor at affordable rates. The project is aimed at moderate housing groups in the income range of INR 6,000–25,000 per month. As per the provisions of this project, the government is to provide housing for such income groups at a minimum of 25% less than the prevailing market rate.

Maharashtra

The Maharashtra State Housing Policy (2007) promotes LIG and EWS housing along with rental housing as a key objective.

- The state has also constituted a Slum Rehabilitation Authority (SRA) to focus on rehabilitation as well as redevelopment of slums. This scheme is being implemented in the cities of Mumbai, Pune and Nagpur.

- Additionally, the National Slum Dwellers' Federation (NSDF) works actively with Mumbai authorities to develop and implement resettlement plans and ensure that the most vulnerable sections of society are not marginalised. The NSDF is looking at mapping each member of a household electronically and issue individual identity cards to ensure transparency in rehabilitation efforts.

- For projects under JNNURM's Basic Services to Urban Poor (BSUP) and Integrated Housing and Slum Development Program (IHSDP), the Maharashtra government is willing to provide FSI of up to 2.5, the prerequisite being that projects have to be implemented by the municipal corporation or council.

- The government has also passed a resolution for all Class A municipal councils to set aside some part of the area for developments undertaken for EWS/LIG and MIG Housing.

- The Mumbai Metropolitan Regional Development Authority (MMRDA) has also come up with FSI rates going up to four in order to promote rental housing developments in the city.

- MMRDA is initiating developers like Matheran Housing and Tata Housing for PPP-led affordable housing development.

- Additionally, the City Industrial and Development Authority (CIDCO) has developed a mass housing scheme in Kharghar known as 'Gharonda Housing' and launched the 'Unnati Gruhanirman Yojna' in Ulwe, Maharashtra. Both these schemes have received interest from the target end user catchments.

Public Approach to Affordable Housing Projects Globally

Several Several countries have adopted a range of strategies and formulated a number of policies to make an effective provision for affordable housing. Suitable to the need of the market, different models of subsidisation have evolved, incentives to developers have been devised and planning provisions have been made.

Strategies and Policies

Some of the countries adopt a universal approach, wherein the target group constitutes the whole population that is provided with decent and affordable housing. Countries like Singapore, the Netherlands, Sweden and Denmark are followers of this approach.

A more common approach is targeted approach, wherein housing is provided to the weaker section of the society, which otherwise is excluded from the housing market distribution system. Followers of this approach include Canada, Malaysia, United States and most of the European Union.

Subsidies

Whilst designing housing subsidies, the government either provides supply-side subsidies or demand-side subsidies. Supply-side subsidies include development of public housing and providing subsidy to developers and encourage them to develop more units. On the other hand, the demand-side subsidies involve periodical cash allowances to the households to support housing cost (rental) or capital grants to rehabilitate or buy units.

Preference of house ownership in case of demand-side subsidies depend on sociocultural elements and traditions in countries. Whilst in the Netherlands, low-income housing assistance is provided only through subsidised rentals; in Spain, subsidised ownership is the practice. Many countries combine rental and ownership schemes depending on the target group's profile and income level.

Incentives and Administrative Streamlining

In order to attract private participation in the segment, the governments provide a range of incentives at the central and local levels. These include tax deductions, density bonuses (percentage allocation of units in residential projects by the developer, and in return, the developer is allowed extra market rate units), direct subsidies, land grants, land use changes etc. In the US, density bonuses are popular, whilst in United Kingdom, mixed-use development with retail on ground floor and affordable housing in upper floors is prevalent.

Some countries like Malaysia and Canada have streamlined the administrative requirements through fee waivers and fast-tracking procedures.

Planning Support

Some countries have adopted inclusionary zoning, stipulating a given share of new construction to be allocated for low-income group housing. In the US, California has successfully implemented a comprehensive package of legislation. California is noted as a leading US state in low-income housing provision. On the other hand, zoning has failed in countries with weak regulatory framework. In Canada, some of the municipal initiatives have failed due to lack of support from provincial legislation.

In Malaysia, the government has established Public Private Partnership, wherein the government provides land for low-income housing and streamlines administrative procedural aspects, and the private partner provides financial resources, supports implementation and delivers units.

Some countries with high-density zoning such as Hong Kong and Singapore have effectively provided high-rise buildings linked to an effective public transport system. In this case, a part of the development is allocated for commercial usage, which cross-subsidises the housing for low-income groups.

The Private Play to Affordable Housing in India

Conventionally, housing development for the EWS and LIG sections has been the responsibility of the government. However, in the past few years, private players have increasingly begun to realise the untapped opportunities at this section of the pyramid. Most of the developers, barring a few, started as 'experimenters' to explore the depth of demand and now have long-term plans in the segment.

Entry of Private Players in the Affordable Housing Segment

The Push Factors

- During the demand slowdown in 2008–2009, residential developers realised that they had **concentrated development portfolios in upper-mid and luxury segments**, where the market has become very competitive in the last decade due to the entry of new players. Affordable housing segment provides an appropriate option to diversify their risks.

- **Lack of land parcels within the city limits** has pushed developers to aggregate land at far-flung suburban locations where a mid-income or luxury segment housing project might not be successful. Since these land parcels have lower costs of acquisition, they can be developed for low-income housing.

- Several **facilitators of affordable housing** have increased activity in recent years and are pushing developers to increase their development footprint in this segment.

  - **Public authorities** such as National Housing Bank

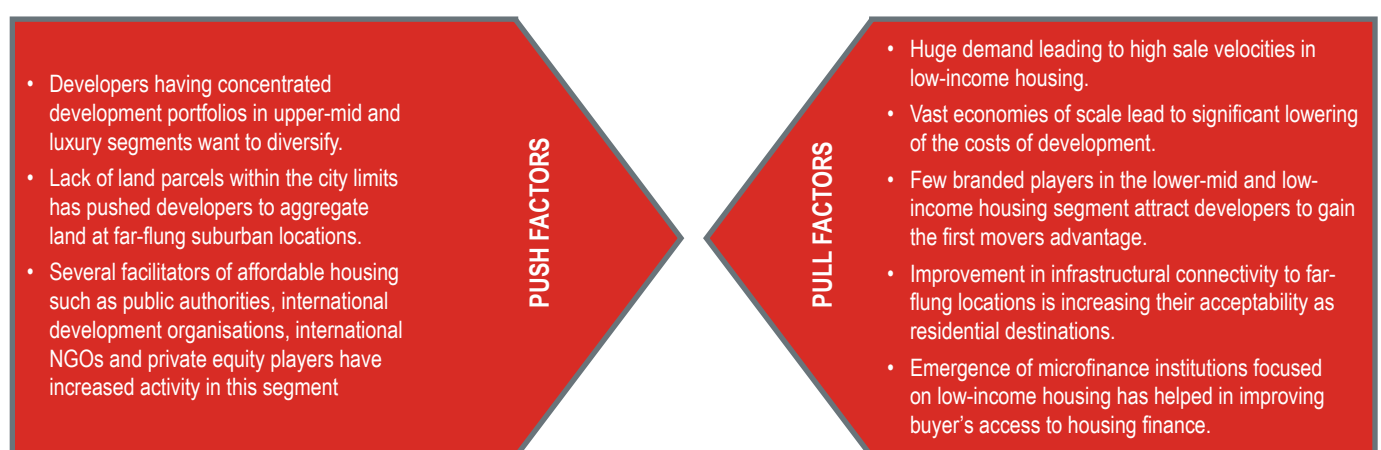 - **International developmental organisations** such as World Bank, International Finance Corporation and Asian Development Bank

  - **International nongovernmental organisations** such as Michael and Susan Dell Foundation

  - Some **private equity** players have also funded low-income housing developers, e.g. Carlyle invested USD 26 million in Value Budget and Housing Corporation (VBHC) in 2011.

The Pull Factors

- The existing shortage of urban housing for this segment (upwards of 20 million dwelling units) has created a **huge demand leading to high sale velocities and lower risk.**

- **Vast economies of scale** lead to significant lowering of the costs of development for low-income housing.

- Since there were few branded players in the lower-mid and low-income housing segment, these developers wanted to gain the **first-movers advantage.**

- **Improvement in infrastructural connectivity to far-flung locations** is increasing their acceptability as residential destinations. Developers want to tap into the changing perception before land prices appreciate such levels that do not support low-income housing.

- **Emergence of microfinance institutions** focused on low-income housing has helped in improving buyer's access to housing finance. Apart from established HFCs such as GRUH Housing Finance (subsidiary of HDFC) and Micro-Finance Housing Corporation, some of the emerging players in the segment are Muthoot Housing Finance, Adhar Housing Finance (subsidiary of Dewan Housing Finance), Aptus Value Housing Finance and Shriram Housing Finance.

Figure 16: Push and Pull Factors for Entry of Private Players in Affordable Housing

PUSH FACTORS
- Developers having concentrated development portfolios in upper-mid and luxury segments want to diversify.
- Lack of land parcels within the city limits has pushed developers to aggregate land at far-flung suburban locations.
- Several facilitators of affordable housing such as public authorities, international development organisations, international NGOs and private equity players have increased activity in this segment

PULL FACTORS
- Huge demand leading to high sale velocities in low-income housing.
- Vast economies of scale lead to significant lowering of the costs of development.
- Few branded players in the lower-mid and low-income housing segment attract developers to gain the first movers advantage.
- Improvement in infrastructural connectivity to far-flung locations is increasing their acceptability as residential destinations.
- Emergence of microfinance institutions focused on low-income housing has helped in improving buyer's access to housing finance.

Source: Jones Lang LaSalle Research

Major Hubs of Affordable Housing Development

During 2009–2012, real estate developers have launched projects in the affordable segment across Indian cities, with units priced between INR 5–10 Lakhs (USD 10,000–20,000). Several of these projects have been sold on an application model due to huge demand, with multiple takers for the same unit.

Location of Projects and Their Distance from City Centre

With high prices of land within the city, the low-income housing projects are being developed at 'leapfrogged locations', which offer land parcels at suitable price points for such developments. Leapfrogging is a real estate phenomenon, in which high prices of intermediate land parcels lead to development of far-flung areas before immediate periphery is developed. Whilst leapfrogging leads to cost-effective developments, they might lack development of adequate physical and social infrastructure.

Depending on the decay of land prices, cities offer parcels for such developments at different distances from the city centre. Mumbai and NCR have affordable housing projects located 65–75 km away from the city centre. On the other hand, Ahmedabad and Kolkata provide better proximity, with projects located at a distance of 15–20 km from the city centre. Bangalore, Pune and Chennai also have projects after a distance of 25–30 km from the city centre (Figure 17).

Most of the Indian metropolitan cities have expanded on a multiple nuclei model, in which satellite towns have been developed, which act as secondary nodes to the city. Most of these newer locations being explored by developers of housing for low-income groups are at reasonable distances from these nodes and are attractive options

for people employed in these suburban commercial nodes. Some of them are in close proximity to industrial nodes as well, which generates demand for such housing projects. Hence, although their distances from the city centres initially seem large, these projects are still suitable for several people employed in industries or offices located near these areas.

Mumbai has led the sector, with over 15 projects targeting this segment. Karjat, Palghar and Boisar in Mumbai along with Narol and Vatwa in Ahmedabad have multiple ongoing projects catering to low-income groups. Anekal Road in Bangalore, which is around 9–10 km away from Electronic City, has one project by Value and Budget Housing Corporation (VBHC) and Janaadhar each (Figure 17).

Major Developers in the Segment

Amongst the developers, Tata Housing (Shubh Griha) and VBHC are entirely focused on low-income affordable housing and have already launched multiple projects across cities, with announcements for large expansion into new cities and locations. Foliage, DBS Affordable Home and Nirman Group have multiple projects in Ahmedabad and Mumbai.

Housing Development and Infrastructure Limited (HDIL) and Usha Breco Realty have experimented the format with their projects successfully in Palghar and Boisar. Notable developers that have announced future developments targeting this segment are Mahindra Lifespaces, TVS Housing and S Raheja.
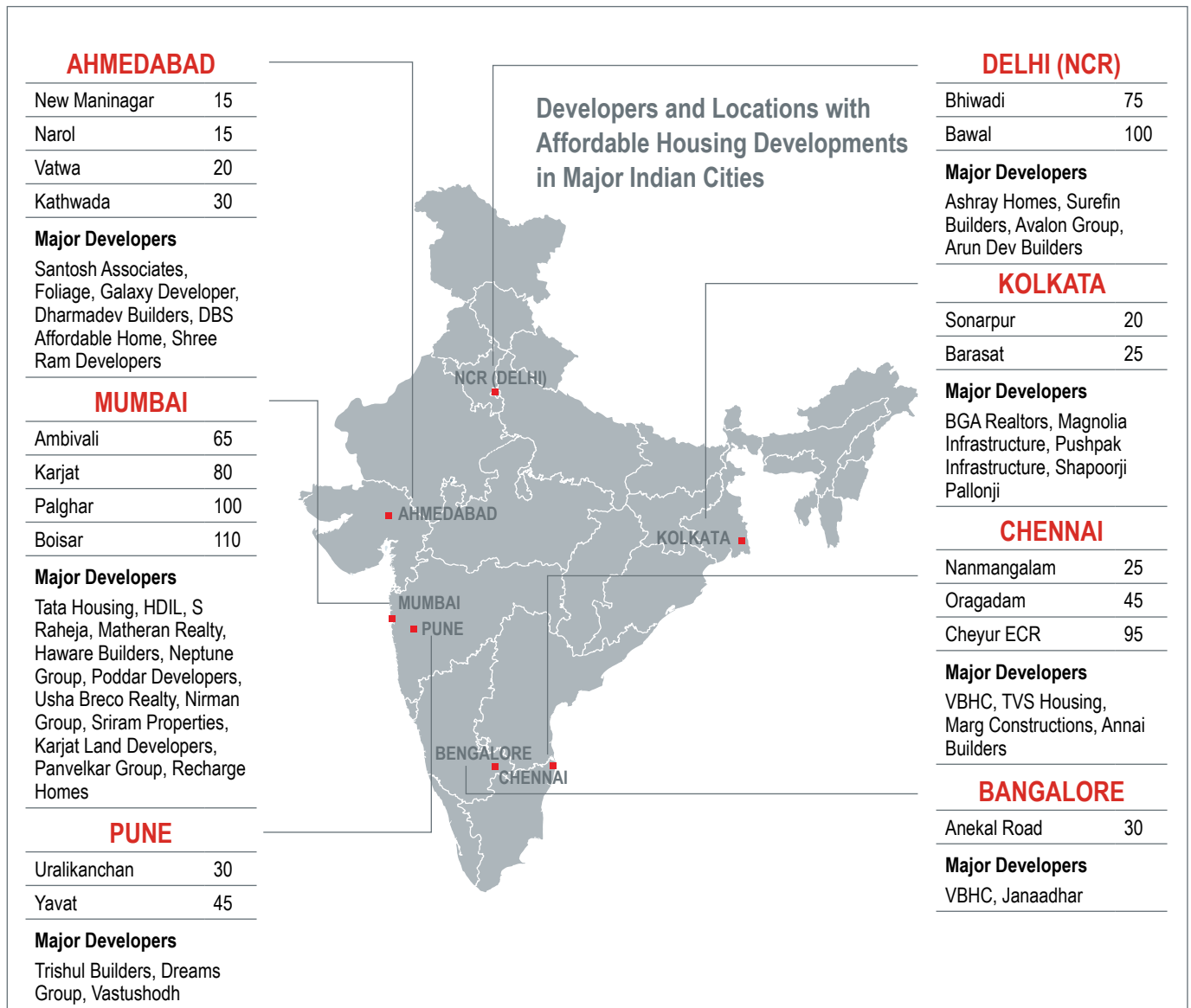
Typical Affordable Housing Project

Developers have successfully executed affordable housing projects of nearly 15–35 acres having 1,500–3,500 units at locations beyond 20–25 km from the city centre. To reduce costs and improve affordability for the buyer, developers have adopted several measures:

- Limited options – units offered are mostly 1-RK and 1-BHK, with some 2-BHK.
- Reduced areas – units have reduced saleable areas of 250–350 sq ft for 1-RK and 400–500 sq ft for 1-BHK.
- Low construction cost – structure is typically low-rise with G+3 or G+4 floors, without lift.
- Shorter period of construction – the low-rise structure and adoption of technologies such as aluminium formwork and building information modelling enables developers to complete the project within a short period of 18–24 months, thus decreasing the collection time and improve returns.
- Basic amenities – basic amenities such as landscaped gardens have been provided. Certain large projects also have social amenities such as school and shopping centre.

Figure 17: The Landscape of Affordable Housing Development (units priced < INR 10 Lakhs) in Major Indian Cities

AHMEDABAD

New Maninagar	15
Narol	15
Vatwa	20
Kathwada	30

Major Developers

Santosh Associates, Foliage, Galaxy Developer, Dharmadev Builders, DBS Affordable Home, Shree Ram Developers

MUMBAI

Ambivali	65
Karjat	80
Palghar	100
Boisar	110

Major Developers

Tata Housing, HDIL, S Raheja, Matheran Realty, Haware Builders, Neptune Group, Poddar Developers, Usha Breco Realty, Nirman Group, Sriram Properties, Karjat Land Developers, Panvelkar Group, Recharge Homes

PUNE

Uralikanchan	30
Yavat	45

Major Developers

Trishul Builders, Dreams Group, Vastushodh

Developers and Locations with Affordable Housing Developments in Major Indian Cities

DELHI (NCR)

Bhiwadi	75
Bawal	100

Major Developers

Ashray Homes, Surefin Builders, Avalon Group, Arun Dev Builders

KOLKATA

Sonarpur	20
Barasat	25

Major Developers

BGA Realtors, Magnolia Infrastructure, Pushpak Infrastructure, Shapoorji Pallonji

CHENNAI

Nanmangalam	25
Oragadam	45
Cheyur ECR	95

Major Developers

VBHC, TVS Housing, Marg Constructions, Annai Builders

BANGALORE

Anekal Road	30

Major Developers

VBHC, Janaadhar

Distance of Major Affordable Housing Locations from the City Centre

City	City Centre
Mumbai	Nariman Point
NCR	Connaught Place
Bangalore	MG Road
Chennai	Nungambakkam
Pune	Kalyani Nagar
Kolkata	Park Street
Ahmedabad	Vastrapur
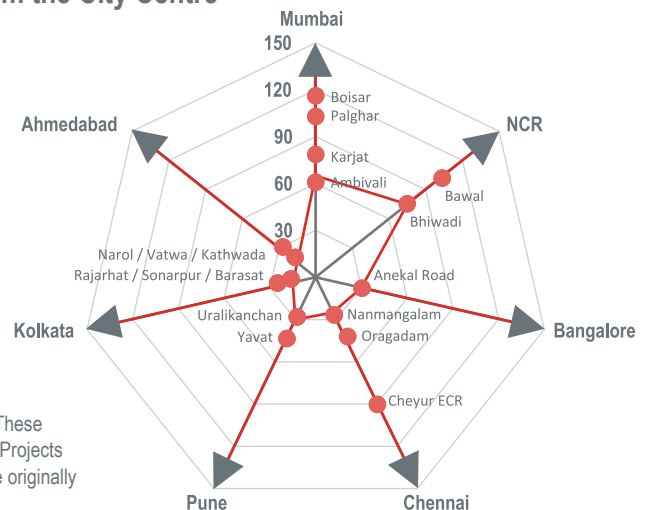
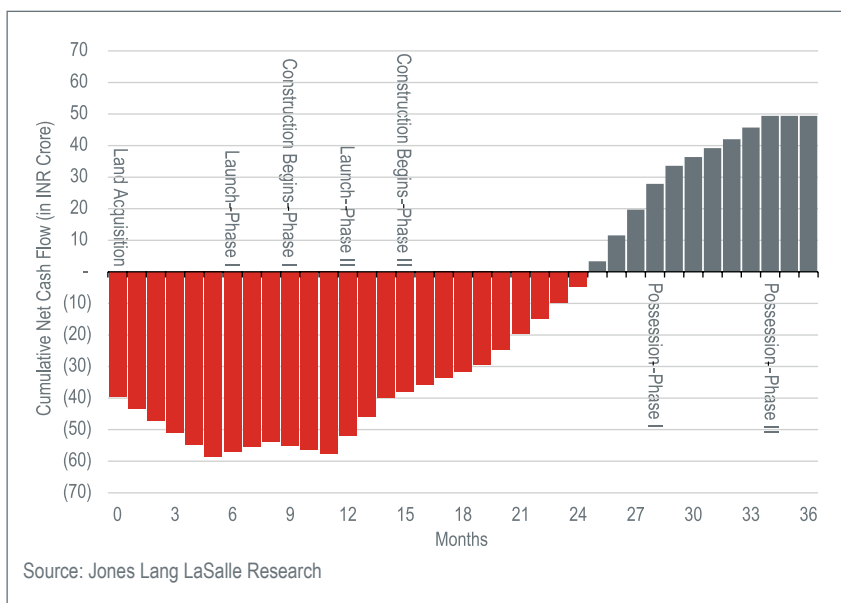Source: Jones Lang LaSalle Research, 1Q12

Note: Figures mentioned are distances of the major locations from the city centre. These are major developers and locations analysed through primary surveys in each city. Projects launched by developers might be currently at higher prices but have units that were originally launched below INR 10 Lakhs during the last 2-3 years.

Figure 18: Typical Affordable Housing Project in Indian Metropolitan Cities

Location	beyond 25–30 km from the city centre
Target Clients	industrial zones in vicinity and commercial hubs at suburban nodes of the city
Project Size	1,500–3,000 units
Dwelling Density	80–100 units per acre
Land Area	15 – 35 acres
Composition	mostly 1-RK and 1-BHK with few 2-BHK
Saleable Area of Units	1-RK: 250–350 sq ft and 1-BHK: 400–500 sq ft
Launch Price	INR 5–7 Lakhs for 1-RK and INR 7–10 Lakhs for 1-BHK
Launch Rate	INR 1,800–3,000 per sq ft
Structure	ground or stilt + 3/4 Floors (walk-up apartments without lifts)

Source: Jones Lang LaSalle Research

Figure 19: Cumulative Net Cash-Flows in an Affordable Housing Project (Where Developer has Acquired Land)

Source: Jones Lang LaSalle Research

Expected Returns in an Affordable Housing Project

Typical pre-tax IRRs achievable in an affordable housing project, where a developer has himself purchased land, can range from 40–45%, with gross profit margins of 15–20% (Figure 19). The breakeven period for a hypothetical project studied below is nearly 24 months, which is due to land acquisition costs borne by the developer. Developer could enter into a Joint Development Agreement or Joint Venture with the landlord to reduce upfront land-acquisition costs and improve breakeven period.

Assumptions		
Land Area(acres)	25	
FSI	1.0	
FSI Area (sq ft)	1,089,000	
Land Cost (INR Cr per acre)	1.5	
Construction Cost (INR per sq ft)	1,100	
Saleable Area Distribution (sq ft)		
Residential	1,100,000	
Commercial	144,571	
Total Area	1,244,571	
	1-RK	**1-BHK**
Saleable Area (sq ft)	350	500
Phase I		
Number of Units	500	750
Ticket Size (INR Lakhs)	5.25	7.50
Phase II		
Number of Units	500	750
Ticket Size (INR Lakhs)	7	10

Project Lifecycle		Marketing Lifecycle		Expected Returns	
Total Project Period	34 months (both phases)	Booking	2-3 months (each phase)	IRR	42%
Construction Period	21 months (each phase)	Payment Collection	21-22 months (each phase)	Gross Margin	18%

Net Present Value					
Discount Rate	10%	11%	12%	13%	14%
NPV (INR Cr)	32.1	30.7	29.2	27.9	26.5
Discount Rate	15%	16%	17%	18%	19%
NPV (INR Cr)	25.2	23.9	22.7	21.5	20.3

Developers tend to launch affordable housing projects in multiple phases to launch units at higher prices in subsequent phases. However, an affordable housing project can't follow a typical residential development project, where developers realise returns due to the appreciation in prices over a project lifecycle. For this segment, a working capital model has to be followed, wherein assured and faster cash inflows from sale receipts fund the construction of the project. The developer needs to de-risk himself from costs of land acquisition. Higher rate of returns and shorter breakeven period can be achieved in an affordable housing project, by adopting the following measures:

- Entering into a Joint Development Agreement (JDA), Joint Venture (JV) with landlord or Public Private Partnership (PPP) with government authorities for land where approvals are in place.
- Shortening the time period of construction (within 12 months for a particular phase).
- Lowering the cost of construction (below INR 1,000 per sq ft).
- Low ticket size to ensure 100% sales within a short time period (below INR 10 Lakhs per unit).

There have been several affordable housing projects that were sold out within days or weeks of launch. Whilst a short period of construction results in an accelerated construction-linked payment from buyers, assured sales and reduced cash-flow risks. However, despite the high rate of returns achieved by undertaking the measures mentioned above, unavailability of land at suitable prices and locations, low absolute value of returns and lack of financing to undertake large-scale mass housing projects could prevent several developers to enter the segment. For higher absolute value of returns, the scale of the project needs to be significantly higher, where large volumes can ensure a larger profit to the developer.

An Institutional Approach to Affordable Housing

The objective of creating affordable housing is to provide adequate shelter to all. Creation of affordable housing should encompass both – enabling people to buy and to rent, for which there is a need to put an institutional structure in place. The present models on which affordable housing is being created concentrate on the ability of people to buy. These models require a myriad of agencies from public and private sectors to work together for the development of affordable housing. Private sector, which comprises residential developers, develop affordable housing projects and sell them in the open market. Government agencies such as Urban Local Bodies (ULBs) and Urban Development Departments (UDDs) are responsible for laying down guidelines and bylaws for affordable housing. Certain restrictions imposed by Ministry of Environment and Forests limit the use of land in urban areas for housing purposes, resulting in the lack of supply of land and thus higher pricing. RBI regulates monetary policies that affect interest rates, which has a major impact on the ability of home buyers to purchase houses.

People who look to buy houses in urban areas are mainly those who have been in the city for a considerable amount of time and require new houses due to growing family size. Thus, this model addresses only a part of the target segment that needs affordable homes. Also, by using this model, there is no guarantee that the beneficiaries of such projects are the actual needy people or speculative investors.

Figure 20: Institutional Approach Towards Affordable Housing

Source: Jones Lang LaSalle Research
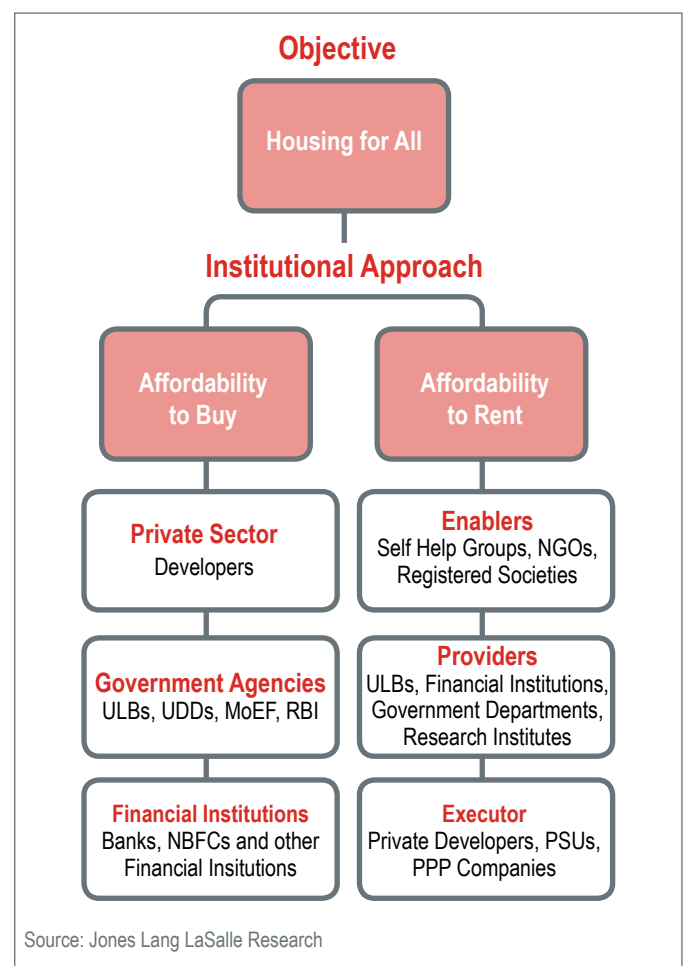
Another target segment that requires affordable homes are city migrants who cannot afford to buy houses immediately but are capable to rent housing premises. Such people require a differentiated approach towards affordable housing. The three main groups that require to work in sync with each other to make affordable rental housing are:

- Enablers – Self Help Groups, NGOs and registered societies are the first institutions to identify the genuine user groups, which help to establish common interests and channels of communication.
- Providers – such as ULBs, financial institutions, government departments and research institutes would be needed to provide the target groups with approvals, incentives and technical and financial support.
- Executors – enterprises such as private developers, Public Sector Undertakings (PSUs) and Public Private Partnership (PPP) firms would be required to hold and maintain rental accommodation with adequate support from the first two groups.

A common thread is required to bind these groups together such that they are able to work in a unified manner and reach the actual target group. Such a model would ensure that the beneficiaries would be the actual target segment, thus eliminating speculative investors.

Affordable Housing – What needs to be done?

Development of large-scale affordable housing is the greatest necessity of urban India today. Indian cities lack low-income housing, which has resulted in the proliferation of slums and unorganised real estate across the landscape. Whilst this is detrimental to the planned growth of cities, it is also restrictive to slum dwellers who are deprived of basic civic amenities and fail to be an equal citizen. Large-scale urban developments are becoming increasingly difficult due to lack of land parcels, congested transit routes, lack of finance, rising input costs and regulatory hurdles. However, it is vital that these issues are addressed urgently so that a comprehensive framework can be established in ensuring the development of affordable housing.

Demand Side
- Formulate guidelines for identifying right beneficiaries
- There is a need to formulate guidelines that would help identify right beneficiaries for affordable housing projects. This would help in ensuring the reach to right beneficiaries and avoid involvement of speculative investors into the projects. Creation of the National Population Register and issuance of unique identity through Unique Identification Authority of India will become crucial steps in identification of right beneficiaries, if they are linked with income levels.

- Innovate on micro mortgage financing mechanisms to ensure a larger reach
- Effective financing through micro mortgages by utilising the reach of Self-Help Groups (SHGs) and other innovative financing mechanisms would ensure that housing finance is available to large sections of LIG and EWS populations. Flexible payment mechanisms should be put into place, as households in low-income groups typically have variable income flows.

Supply Side
- Incentivise developers to develop affordable housing
- ULBs and UDDs can develop guidelines by giving free sale areas, extra Floor Space Index (FSI) and other policy measures so that real estate developers are incentivized to develop affordable housing. Schemes for redevelopment and slum rehabilitation should be developed with incentives that generate sufficient returns for the developers whilst controlling the development density. The cost-benefit analysis of regulations should be carried out from a development perspective to ensure that schemes to facilitate the development of affordable housing are feasible.
- Streamline land records to improve planning and utilisation of land
- Adequate availability of land should be ensured for housing and infrastructure by computerisation of land records, use of Geographical Information Systems, efficient dispute re-dressal mechanisms and implementation of masterplans.
- Include mass housing zones in city plans and develop them within a planned schedule
- Some cities have already dedicated zones in their masterplans for development of affordable housing. Whilst this needs to be replicated in other cities and towns, it should be ensured that they are developed within a planned schedule.
- Enact rental housing schemes in urban areas
- Authorities like MMRDA have experimented with rental housing schemes, but these have not been very successful as a proper framework has been missing for such schemes. Limitations in such schemes include development in
- far-flung areas, which are not suitable as affordable housing locations and lack of means to identify end users.
- Formulate policies for greater participation from private sector in the way of technological solutions, project financing and delivery
- Disruptive innovation in terms of technological solutions, project financing and delivery is required, which reduces costs of construction significantly despite rising costs of inputs. As construction costs form a significant portion of the selling price of affordable housing units, the savings in construction can immensely benefit the occupier.

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