# Study - Factors affecting affordable housing, Pune, Maharashtra

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*Abstract*—This paper provides summary information on a number of factors that affect housing affordability. India has relatively strong population growth for an advanced economy. A large component of this reflects relatively high immigration from rural areas to urban areas compared to comparable other countries. Higher immigration rates have added to demand for housing, especially as immigrants tend to be disproportionately young adults. Immigrants have also tended to head for areas where housing is already short, such as Pune city (Maharashtra state, India), rather than to country regions. Increasing prices of real estate and land in urban areas that have forced the economically weaker sections and poor of the society to utilise the marginal lands typified by congestion, obsolescence and poor housing stock. Private builders and developers are largely interested in upper-mid, luxury and high end housing segment. Housing for economically weaker section and poor is expected to be provided by government without much legislative clarity. Some governments are initiating through their welfare programs. It is not sufficient mainly due to large scale of the issue. Other crucial factors like lack of clarity in building bylaws and guidelines, lack of access to home finance to poor and economically weaker sections, lack of market Information and titling Issues, Archaic laws for renting, lengthy land use conversion process and approvals, excessive control on development, lack of land banks suitable for market, etc pushing affordability of housing in urban areas to Immigrants.

It is broadly concluded that, housing for lower Income group and lower middle income group can be made affordable in India by government and private sector working to gather. Central government and state government has recently declared affirmative housing policy may results to improve affordability of housing for poor and economically weaker sections. The government needs to expedite the implementation of the IT (Information Technology) enabled 'Single Window Approval System' with linkages between the centre and state governments, urban bodies and panchayat levels. It is high time to implement reformed policy frame work and regulations for affordable housing.

**Index Terms: Keywords- factors, Affordable housing, real estate market, LIG, MIG, HIG, EWS, Pune.**

## I. INTRODUCTION

AFFORDABLEAffordable housing adequately suits the needs of low- and moderate-income households at costs below those generally found in the urban market, Pune (Maharastra State, India). It may take a number of forms that exist along a continuum – from emergency shelters, to transitional housing, to non-market rental (also known as social or subsidized housing), to formal and informal rental, and ending with affordable home ownership.

The 'Median Multiple' indicator, recommended by the 'World Bank' and the United Nations, rates affordability of housing by dividing the median house price by gross (before tax) annual median household income.

"A common measure of community-wide affordability is the number of homes that a household with a certain percentage of median income can afford. For example, in a perfectly balanced housing market, the median household (the wealthier half of households) could officially afford the median housing option, while those poorer than the median income could not afford the median home. 50% affordability for the median home indicates a balanced market."

Determining housing affordability is complex and the commonly used housing-expenditure-to-income-ratio tool has been challenged. In the United States and Canada, a commonly accepted guideline for housing affordability is a housing cost that does not exceed 30% of a household's gross income. Canada, for example, switched to a 25% rule from a 20% rule in the 1950s. In the 1980s this was replaced by a 30% rule. India uses a 40% rule.

The total geo-graphical area of the country (India) is 3,287,240 sq.km. At the International level, India accounts for only 2.4 percent of the world surface area and yet it supports and sustains 16.9 percent of the world population. In 150 China with 22 percent of population led the world followed by India with 14.2 percent. It is estimated that by 2050, India will overtake China to become the most populous country on the earth with about 17.2 percent population living here. This equation is highly impacting on affordability of housing in general.

Therefore, Immigration from rural area to urban areas consistent and increasing at the higher rate resulting deficiencies in housing supply especially beyond affordability of poor and economically weaker sections.

Affordability of housing will improve by reforms in several segments to enhance land availability & ownership clarity, government policy, statutory laws, other rules & regulations, banks & financial Institutes, Infrastructure, utilization of local resources, etc

## II. LOCATION OF THE RESEARCH:

Location of the research is Pune urban area mainly and out skirt. Pune is a sprawling city in the western Indian state of Maharashtra. Pune is the 9th most populous city in India and the second largest in the state of Maharastra after the state capital Mumbai. Pune is also the 101st largest city in the world, by population. Pune is considered the cultural capital of Maharashtra. It is situated 560 metres above sea level on the Deccan plateau, on the right bank of the Muthariver. It is spread over 700 square kilometres.

Pune has a traditional economic base and those industries continue to grow. It is great educational hub not limited for the India but also for the world. The city is known for its manufacturing and automobile industries, as well as for research institutes of information technology (IT), education, management and training, which attracts students, and professionals from India, South East Asia, the Middle East and Africa. A few college in the Europe have also actively engaged in Student-exchange programs with several colleges in Pune.

Pune is also one of the fastest growing cities in the Asia Pacific region. The 'Mercer 2017 Quality of Living rankings' evaluated local living conditions in more than 440 cities around the world where Pune ranked at 145, second in India after Hyderabad. It also highlights Pune among evolving business centres and emerging nine cities around the world with citation "Hosts IT and automotive companies".

## III. AIM & OBJECTIVE

Aim of the study is to explore factors affecting affordability of housing, which may barriers to afford housing for large mass especially economically weaker sections, lower Income groups, financially poor, etc.

Some of the broad objectives for study factors affecting affordable housing are listed below:

(1) To know availability of the land, ownership issues, land cost, surroundings / vicinity & infrastructure availability, etc

(2) To find out rate of migration from rural to urban areas

(3) To collect data of housing demand and supply especially for lower Income group (LIG) segment

(4) To evaluate government policy, regulatory and statutory compliance requirements, permissions, approvals, tax structure, duties, levies, etc for land and development of land for housing purpose

(5) To explore possibility to utilize 'Information Technology' (IT) for speed up permissions, approvals, construction, etc related processes

(6) To find out suitability of 'Public Private Partnership' (PPP)

(7) To understand employment generation linkage with affordable housing construction

## IV. LITERATURE SURVEY

Literature review of following major documents to enhance understanding about the subject:
Report 2012 – Green Building – Chapter 7
Centre for Science & Environment, New Delhi

## EXTENT OF PROBLEM

As per Government estimates, the total housing shortage in the urban areas, at the beginning of the 11th Plan period was around 24.71 million units and is likely to go up to 26.53 million units by 2012. Unofficially the deficit stands at more than 40 million, growing at 10% each year.

The urban situation is equally appalling with 99 per cent of the housing shortage pertaining to the Economically Weaker Section (EWS) and Low Income Group (LIG) categories. Often there Affordable housing and low cost housing are used as synonyms, although they differ a great deal from each other. Low-cost housing is generally meant for the Economically Weaker Sections (EWS) categories and comprises bare minimum housing facilities while affordable housing is generally meant for people from Low Income Groups (LIG) and Middle Income Groups (MIG). In fact the inadequacy of housing stock and lack of spaces for house these units in Indian cities manifest in the form of growth in slum and squatter settlements. It is the 6% growth of slums that is fast outstripping the growth in urbanization in India and its cities at 3% and 4% respectively. According to UN Habitat India is adding 4.4 million people to slums every year and 202 million Indians will be residing in slums by 2020. Generally houses in a bracket between 5-15 lakhs are considered falling in affordable housing bracket.

Shelter, HUDCO Publication, Issue April 2013, Volume – 14, No. 1
Theme – Affordable Housing
Housing & Urban Development Corporation Limited (HUDCO),
New Delhi

Housing is one of the basic human needs and each person longs to have a house in their life span. The latest estimates by the Technical Group on Urban Housing for the 12th Plan has estimated the total urban housing shortage in 2012 as 18.78 million, of which almost 96 per cent pertains to the economically weaker sections and the lower income groups. The investment requirement for addressing this shortage would be in the order of INR. 94 Trillion, assuming an average per unit cost of INR. 0.5 Million.

A Task Force on 'Affordable Housing for All' defined affordable housing in terms of
(a) Multiples of household income;
(b) Size of the tenement and
(c) Percentage of household income in case of rented accommodation.

This definition highlights the position that affordability is

a major concern for urban poor, who in the absence of access to formal housing resort to slums and informal settlements.

To overcome the present situation, three issues require our attention. First, is to understand the need for a multipronged strategy for housing delivery. Second aspect is to work out a strategy to increase the ability of households to acquire housing at market prices. Third aspect pertains to limited access of the poor to sources of institutional funding and apprehension of loan delinquency which has made institutional lenders wary of lending to the poor/weaker sections.

Affordable Housing for All : An Overview of Housing Policies in India

Census 2011 has estimated that the urban population of India is at 377 million which constitutes about 31% of the country's population. By 2031, the population of urban areas is projected to reach 600 million (GirishKarnad,2011). As per the report of the Committee on slum statistics/Census chaired by Dr. PranabSen, the slum population in the country is 93 million in 2011.

Many asian countries are demonstrating that with strong political will and improved institutional capacity, affordable housing can be provided in large scale, particularly through national programmes. India and China are showing evidence of providing affordable housing through such initiatives (UN – HABITAT, 2011). This clearly indicates that efforts in India for providing affordable houses have been noticed across the globe. Programmes like VAMBAY, JNNURM and now RAY are major initiatives of the government towards affordable housing. In one way the government has given top priority to housing sector, on the other hand the housing shortage is phenomenal in EWS and LIG groups.

Urban Land Ceiling and Regulation (ULCAR) Act, 1976

National Housing and Habitat Policy, 1998

ValmikiAmbedkarAwasYojana (VAMBAY)

National Urban Housing and Habitat Policy (NUHHP) 2007

Jawaharlal Nehru National Urban Renewal Mission (JnNURM)

Rajiv AwasYojana (RAY) – Vision of Slum Free India

Interest Subsidy Scheme for Housing the Urban Poor (ISHUP)

Affordable Housing in Partnership

Real Estate (Regulation and Development) Bill, 2011

Special Refinance Scheme for Urban Low Income Housing

Interest Subvention Scheme

## V. METHODOLOGY

Combined research method by using explanatory & diagnostic

This paper provides summary Information on a number of factors that, affect housing affordability and how they have change over recent Indian census periods that were reviewed (2001 & 2011).

This paper is researching about the root causes of the problem. It describes the factors responsible for the problematic situation. It is problem solving research design that contents mainly:

(1) Emergence of the problem
(2) Diagnosis of the problem
(3) Solution for the problem
(4) Suggestion for the problem solving

As per the 2011 census, the India had a population of 1,210.98 million, out of which 377.10 million (31.16%) live in urban areas and 833.08 million (68.84%) live in rural areas. By 2031, the population of urban areas is projected to reach 600 million (GirishKarnad,2011). As per the report of the Committee on slum statistics/Census chaired by Dr. PranabSen, the slum population in the country is 93 million in 2011. As per the Technical Committee Report on Urban Housing (MoHUPA, 2012) total housing shortage in urban India is 18.78 million units. 2011 Census shows that in India there are nearly 78.87 million households, of which 0.39 million are homeless. As compared to 3 percent in 2001, it reduced to 0.5 per cent in 2011.

For the first time since Independence, the absolute increase in population is more in urban areas than in rural areas. During 2001 – 2011, population increased by 181.4 million.

Level of urbanization increased from 27.81% in 2001 Census to 31.16% in 2011 Census. The proportion of rural population declined from 72.19% to 68.84%. This growing concentration of people in urban areas has led to problems of land shortage, housing shortfall and congested dwellings. During 2001-2011, the urban population of India grew at a CAGR of 2.8%, resulting rapid urbanisation coupled with paucity of housing stock has resulted in people increasingly living in slums, squatter settlements and unauthorized colonies.

Of the 377 million living in India's roughly over 7,900 towns, an estimated 90 million are poor. 26 percent of India's urban population lives in slums. In the metro city of Mumbai 54% of the population are slum dwellers but occupy only 6% of the land. Urbanisation has resulted in people increasingly resorting to informal housing and has deteriorated the housing conditions of the economically weaker sections of the society.

About one-half of the population of India's major metropolitan centres, like Delhi, Kolkata, Mumbai and Chennai are living in various types of illegal, squatter and slum settlements. The proportion is even higher in many other cities. On an average about one-sixth of the population is living in the slums, bastis and Jhuggi-jhompri clusters, which are mainly the settlements of the poor. The poor live in various types of housing which includes pavement dwellers/homeless (about 1 per cent of total population), traditional areas, villages and old city (about one-third), hutments (about one- sixth) and irregular colonies (about one-sixth). The contribution of the public sector housing

programmes in housing the poor (site and services and built houses) had A.K. JAIN been about 32%. The role of private sector in housing had been marginal (about 16 %) and its contribution towards EWS/LIG housing had been almost negligible.

## VI. STATICALLY INTERPRETATIONS OF RESULTS



Figure : Factors Affecting Housing Affordability
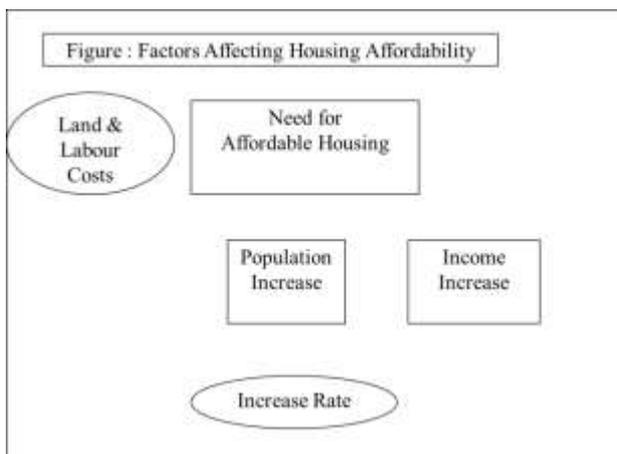
Affordable housing encompasses housing for the EWS, LIG and MIG.

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

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

## Affordable Housing Norms for Different Categories

| | Income level | Size of dwelling unit | Affordability |
|------|------|------|------|
| Economically Weaker Section (EWS) | <INR 1.5lacs per annum | Up to 300sq ft. | EMI to Monthly Income – 30-40% House price to annual income – Less than 5.1 (Deepak Parekh |
| Lower Income Group(LIG) | INR 1.5 to 3lacs per annum | 300 to 600 sq. ft. | |
| Middle Income Group (MIG) | INR 3 to 10lacs per annum | 600 to 1200 sq. ft. | Task Force) |

*Source: KPMG Analysis, Knight Frank*

## Parameters for Affordable House

| Parameters | Low Cost Housing | Affordable Housing |
|------|------|------|
| Amenities | Bare minimum to none | Basic |
| Target Income Class | EWS & LIG | LIG & MIG |
| Size of Dwelling Unit | <= 300 sq.ft. | 300-1200 sq.ft. |
| Locations | Generally within city but can also be located on city peripheries due to high cost of land | Within city |
| Project Developer | Mostly Government agencies | Private Developers and Government |
| Mostly available source of finance | Micro Finance Institutions | Traditional banking system |
| EMI to Monthly Income | Not exceeding 30 percent of gross monthly income | Not exceeding 40 percent of gross monthly income |

*Source: Suisse, Knight Frank, KPMG Analysis*

## Population of India

| | 2001 (in million) | 2011 (in million) | Difference (in million) |
|------|------|------|------|
| Rural | 743 | 833.08 | 90.4 |
| Urban | 286 | 377.10 | 91.0 |
| Total | 1,029 | 1,210.98 | 181.4 |

*Source: Census of India 2011*

## Housing Shortage

| HOUSING SHORTAGE 2012 | | | |
|------|------|------|------|
| Sl. No. | Households that require new houses | In 2007 | In 2012* |
| 1. | Living in non-serviceable kutcha houses | 2.18 | 0.99 |
| 2. | Living in obsolescent houses | 2.39 | 2.27 |
| 3. | Living in congested houses | 12.67 | 14.99 |
| 4. | Homeless | Not included | 0.53 |
| 5. | Sub- total (1+2+3+4) | 17.24 | 18.78 |
| 6. | Housing deficit (total no. of households housing stock) | 7.47 | Not included |
| 7. | Total housing shortage | 24.71 | 18.78 |

*figures estimated for 2012 by technical group in million dwelling units*

*Source: Ministry of HUPA*

**Housing Shortage According to Income Groups**

| Sl. No. | Category | 2007 | | 2012 | |
|---|---|---|---|---|---|
| | | Figures | % | Figures* | % |
| 1. | EWS | 21.78 | 88.13 | 10.55 | 56.18 |
| 2. | LIG | 2.89 | 11.69 | 7.41 | 39.44 |
| 3. | MIG/HIG | .04 | 0.18 | 0.82 | 4.38 |
| 4. | Total shortage | 24.71 | | 18.78 | |

*Source: Ministry of HUPA*

**Affordability of Various Income Groups**

| Income category (in rupees/ month) | Area of dwelling unit | Affordability to pay EMI/ Rent (% of income) | Affordability to pay cost of house (multiple of annual income) |
|---|---|---|---|
| EWS ( 539-3300) | •Minimum of 300sq.ft super built up area<br>• Minimum of 250 sq.ft (25 sq.m) carpet area | 20 | 3 |
| LIG (3301-7300) | •Minimum of 500sq.ft super built up area<br>• Maximum of 517 sq.ft (48 sq.m) carpet area | 30 | 4 |
| MIG (7301-4500) | •Minimum of 600-1200 sq.ft super built up area<br>• Maximum of 861 sq.ft (80 sq.m) carpet area | 40 | 5 |

*Source: Affordable Housing for Urban Poor, National Resource Centre, SPA New Delhi, 2009, Guidelines for Affordable Housing in Partnership (Amended), Ministry of HUPA, 2011*

| Area of application | Conventional | Appropriate / Innovative | |
|---|---|---|---|
| | | Materials | Technique/ Technology |
| Foundation | 1. RCC raft foundation<br>2. Columns and footings<br>3. Pile foundation | | 1. Brick arch foundation |
| Wall | 1. Clay bricks<br>2. Stone<br>3. Timber<br>4. Glass | 1. Fly ash bricks<br>2. Stabilised earth brick<br>3. Hollow concrete block<br>**Precast**<br>1. AAC blocks<br>2. AC wall panels<br>3. Precast solid cement concrete blocks | 1. Rat trap bond<br>2. Rapid wall |
| Roof | 1. Steel<br>2. Timber<br>3. Asbestos sheets<br>4. Terracotta tiles<br>5. RCC | 1. Precast RC channel units<br>2. Precast RC planks<br>3. Precast concrete/ ferrocement panels<br>4. AC roof panels | 1. Filler slab |

**Estimated Cost Saving on using Innovative roofing materials**

| Sl. No | Cost-Effective Technologies | In place of Conventional options | % of Saving |
|---|---|---|---|
| 1 | Ferro cement shell roofing | RCC | 40 |
| 2 | L-panel sloping roofing | RCC | 10 |
| 3 | Filler slab roofing | RCC | 22 |
| 4 | RCC channel units | RCC | 12 |
| 5 | Brick arch for lintels | RCC lintels | 30 |
| 6 | Brick on edge lintels | RCC lintels | 50 |

*Estimated Cost Saving on using Innovative / Cost Effective Building Materials*
*Source: BMTPC*

**Estimated Cost Saving on Using Filler Slab instead of Conventional Slab**

| Sl. No. | Material description | Conventional slab | Filler slab | Savings in cu.m | % Savings /cu.m | Savings (Rs./m3) |
|---|---|---|---|---|---|---|
| 1 | Cement (Kg) | 422.67 | 342.35 | 80.31 | 19% | 418 |
| 2 | Sand (cu.m) | 0.48 | 0.39 | 0.09 | 19% | 21 |
| 3 | Aggregate (cu.m) | 0.96 | 0.78 | 0.18 | 19% | 127 |
| 4 | Steel (Kg) | 20.20 | 17.48 | 10.72 | 38% | 536 |
| | | | | | **Total** | **1102** |

**Comparative analysis of conventional clay bricks and AAC blocks**

| Sl. No | Parameter | Clay Brick | AAC Blocks |
|---|---|---|---|
| 1 | Soil composition | One sq. ft of carpet area with clay brick walling will consume 25.5 kg of top soil | Uses fly ash which is a thermal power plant waste product & thus no consumption of top soil |
| 2 | Size (standard) | 230 mm x 110 mm x 75 mm | 625 mm x 240 mm x 100-300 mm |
| 3 | Variation in size | 5 mm (+/-) | 1.5 mm (+/-) |
| 4 | Fire resistance (8" wall) | Around 2 hours | Up to 7 hours |
| 5 | Cost benefit | - | Reduction in steel deadweight leading to savings in steel and concrete |
| 6 | Energy saving | - | Approximately 30% for heating and cooling |
| 7 | Rate | Rs. 5-9 (per brick) | Rs. 60 (per brick) |

*Source: Hyderabad Industries Ltd.*

**Comparative analysis of conventional clay bricks and fly ash bricks**

| Sl. No. | Parameter | Normal clay brick | Fly ash brick |
|---|---|---|---|
| 1 | Colour | Colour varies with soil | Uniform pleasing colour like cement |
| 2 | Shape | Uneven shape as it is hand made | Uniform in shape and smooth in finish |
| 3 | Size | 225 mm x 100 | 400mm x 200mm |

| | | | |
|---|---|---|---|
| | | mm x 65 mm | x 150mm |
| 4 | Composition | Lightly bonded | Dense composition |
| 5 | Finish | Plastering required due to uneven surface | No plastering required |
| 6 | Weight | Heavier in weight | Lighter in weight |
| 7 | Water absorption | 20-25% | 6-12% |
| 8 | Rate (1000nos) *DSR 2012 | Rs. 3100 | Rs. 3300 |

**Comparative analysis of conventional building construction and rapid wall construction**

| Sl. No. | Description | Rapid wall building | Conventional building |
|---|---|---|---|
| 1 | Plinth area | 1201 sq.ft | 1301 sq.f |
| 2 | Period of construction | 37 days | 165-180 days |
| 3 | Labour requirement | 150 man days | 720 man days |
| 4 | Cost of construction (Only structure) | Rs. 5,60,000 | Rs.8,60,000 |
| 5 | Rate of construction per sq.ft | Rs. 466/sq.ft | Rs. 656/sq.f |

**Cost of dwelling unit of 226 sq.ft (using rapid wall technique): 1,04,00 Cost if row dwelling units : Rs 82,000 (saving by common wall, its foundation, erection charge, painting, etc.)**

*Source: Presentation on techno-economic an construction advantages of RFC rapid wall panels, RFC limited*

**Comparison of Innovative with Conventional Constructions**

| Sl. No | *Parameter | Conventional construction | Innovative /appropriate construction |
|---|---|---|---|
| 1 | Time | 40- 50 days | 10-25 days |
| 2 | Cost (approx.) | Rs. 1.5-2.5 lakhs | Rs. 0.8-1.2 lakhs |
| 3 | Rate(approx.) | Rs.500-750/ sq.ft | Rs. 250-400/ sq.f |
| | **Savings** | | **Rs. 250-300/sq.f** |

*parameters based on construction of a 300 sq.ft dwelling unit*

**Discussion**

Affordable housing is a generic concept and corresponds to the income level of individuals. Globally, accepted definition of affordable housing is that the cost of housing should not be more than 30 percent of a household's gross income. This includes taxes and insurance for owners, and utility costs.

As per the task force on Affordable Housing for All, headed by Shri Deepak Parekh, if the cost does not exceed four times the household gross annual income or if EMI/ rent does not exceed 30 percent of the household's gross monthly income, it can be categorised as affordable housing for the Economically Weaker Section (EWS)/ Low Income Group (LIG) category. Similarly, for MIG category the cost shall be within five times the household gross annual income or EMI/ rent should not exceed 40 per cent of the household's gross monthly income to categorise it as affordable.

In India the issue of affordable housing is largely associated with EWS and LIG categories of the society. Until the announcement of the new housing mission, the prevailing income definition of an EWS category household was INR. 1,00,000 per household per annum, whereas a household with annual income between INR.1,00,001 to INR.2,00,000 was identified as an LIG household. Recognizing the demand for housing and the need to ensure its affordability, the government of India launched a Mission "Housing for All (Urban) by 2022" in June 2015 under the "PradhanMantriAwasYojana" and this mission has redefined the income levels of EWS and LIG categories. As per the mission guidelines, households having an annual income up to INR.3,00,000 come under the category of EWS and those with an annual income between INR.3,00,001 and INR.6,00,000 come under the category of LIG (MoHUPA, Revised PradhanMantriAwasYojana Guidelines, 2016) in order to give a wider coverage of beneficiaries under the programme. States/ UTs have been given the freedom and flexibility in the guidelines to redefine the annual income criteria as per local conditions, in consultation with the central government.

It is evident that various types of policies, guidelines and missions have been formulated by the central government and Maharastra participating state governments to address the housing related issues and to provide good quality houses at affordable rates. As the implementation of such policies is a long drawn process, the objectives of the policies and earlier mission could not be achieved fully. In view of this the new Mission "Housing for All by 2022" was launched by the Government of India in 2015-16 and the results of the same will be visible after 4-5 years.

Analysis of census 2011 data for housing has indicated that surplus housing is available in Pune region in the MIG and higher category. However, there is an urgent need to expedite efforts to achieve the targets as envisaged in the central and state level polices and guidelines towards the creation of good quality housing at affordable rates.

For Indians, the most important form of social security is to own a house.

- In India, there is a housing shortage, along with rising Inventory and mostly bankrupt developers.
- Land especially with basic Infrastructure in place, remains a limited commodity.
- There is now significant social stress on the economy with rising urbanization and an expanding middle class along with a housing shortage estimated at 62.5 million units in the year 2017.
- Over 65 million people live in slums in the year 2017.

- The demand for houses is expected to increase to 88.8 million affordable units, according to the PranabSen Committee on slum statistics, within the next two to four years, with the deficit in urban areas touching 18.9 million units.
- An estimated investment of $ 1.7 trillion is required to meet the housing shortage.
- Innovative financial measure like better loan facility, tax free bonds, external commercial borrowings, etc tools and techniques required to improve affordability of housing.
- The housing and construction sector remains India's second largest employment generator after agriculture. Real Estate comprises twenty to thirty percent of this, contributing to five percent of India's Gross Domestic Product (GDP).

**Conclusions**

Following conclusions emerge out of the earlier mentioned facts and analysis:

i. The implementing agencies like Development Authorities, Housing Boards, Urban Local Bodies, Slums/ Shelter Improvement Boards, etc. working in districts/ towns of the Pune should join hands and make concerted efforts in providing affordable housing in a time bound manner.

ii. Looking at the availability of surplus housing of MIG and higher category in Pune, it is recommended that the component of affordable housing should be increased to meet the demand for this category.

iii. The draft rental housing policy should be brought into effect at the earliest to fill the demand supply gap in this category because everybody may not be interested in owning a house due to various reasons and prefer rental housing.

Other conclusions to enhance housing affordability:

- Successful implementation of the national land records management program (NLRMP) by 2018 will make it easier for developers to focus on suitable land parcels with reduced litigation risk.
- Reduction of complicated statutory compliance, duplication of submissions to various authorities, etc will result adequate supply & stabilized prices.
- Floor Area Ratio (FAR), Floor Space Index (FSI), etc ratios shall be increased by regulatory authorities to change from horizontal expansion to vertical expansion.
- Government shall introduce and implement innovative financial tools & techniques like better housing loan facility, tax free bonds for construction capital, external commercial borrowings, etc.
- Government shall expedite the implementation of the IT-enabled "Single window approval system" with linkages between the centre and state governments, urban bodies and panchayat levels (SAPRET Committee 2013).

- Automated building plan approval process shall be introduce and implement by every urban development authority across the country (India).
- Automatic clearances for projects with leadership in energy and environment design, "Green Rating for Integrated Habitant Assessment" (GREHA) certification shall be appreciate by concerns.
- Green channel shall be introduced and implemented for approving low cost housing projects.
- Infrastructure status is recently granted for real estate sector. It shall be leveraged by affordable housing in terms of open up additional financing avenues like Insurance firms, tax free Infrastructure bonds, fifty percent funding through External Commercial Borrowings (ECB).
- A Public-Private Partnership (PPP) mode with government backing will also helpful to secure institutional lending at lower cost.
- Separate allocation of budget is required for affordable housing to make it priority sector.
- Rationalization of tax constituting thirty to thirty seven percent of deal value, will incentivise housing development. This can be ushered in by reviewing its various constituents including stamp duty, service tax, value added tax, land conversion charges and external development to reduce black money and useful for housing affordability.
- Unification of stamp duty and other charges across all states along with exemption of excise duty for pre-fabricated housing components is a medium term measure. It will help to move forward supply of affordable housing.
- Introducing and implementing the Benami Transactions (Prohibition) Bill, 2015 and undisclosed foreign Income & Assets (Imposition of tax) Bill, 2015 (popularly know as black money bill) will curb the flow of black money in to real estate, improving the overall affordability of the sector.
- Special provisions for affordable housing segment to accommodate maximum possible mass from below poverty level, middle and lower middle class.
- Institutionalized highly successful public housing programs for cater maximum possible affordable house seekers.
- Social housing, built through Public Private Partnership (PPP) projects shall be developed to provide subsidised rental housing and making rental Income tax free will helpful for potentially unlock millions of housing units at affordable rate.

In short, Housing affordability will be improve by large funding, transformative infrastructure development, along with supportive regulatory and policy mechanism to achieve social and economical objectives. Careful nurturing through policy action could catalyst India's affordable housing boom.

**Acknowledgement**

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