

Study - Tools and Techniques to make housing affordable, Pune, Maharashtra

Kalpesh Krushnarao Potdar

*Senior Manager, Projects, (On contract - Oman Oil Company), (Sponsor - Bin Hayl Group, Muscat, Oman) and
PhD Research Scholar, Faculty of Management, Jodhpur National University (JNU)*

kalpeshpotdar@yahoo.com

Abstract— This paper explores the study of tools and techniques to make housing affordable. Housing affordability is discussed as the relationship between household incomes and housing cost. Obstacles can be eliminated by using adequate tools and techniques like neighbourhood coordination workable designs, site challenges, etc and other complications include the risks of home rehabilitation and competing policy objectives. An overview of a successful historic use of tools and techniques in Colorado, North California, etc are presented. A case study of these gives consideration of the tools and techniques to make housing affordable in robust market. It is also study and discuss responsibility of planners to promote tools and techniques to make housing affordable. A spectrum of non-regulatory and regulatory solutions are provided to spread community consciousness for the application of tools and techniques to make housing affordable.

Driven by demographic and urbanization growth, the estimated need for affordable housing, at a global level, is approx 0.1 million units per day. This represents economic opportunity at one side and a huge challenge at other side. No doubt it is potential tool for economic development. Any tools and techniques to address this challenge will need to take into account the particular constraints linked to developing societies, including the insufficient funds, environmental challenges skills shortages and lack of resources. Innovative tools and techniques are required to use and develop to address these challenges and build sustainable housing for the poor at Pune, Maharashtra and compatible universally. Modern tools and techniques to make housing affordable is challenging. Conventional building techniques are claims that its building technology has the potential to successfully address many of the constraints currently holding back the provision of adequate shelter at the base of the socio-economic pyramid. The analysis of its model and results suggest that adequate use of modern tools and techniques to make housing affordable provided model does indeed have huge potential when it comes to providing decent and affordable housing, particularly in India.

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

I. INTRODUCTION

IT is believed that, Vishwakarma is the presiding deity of all craftsmen and architects. Son of Brahma, he is the divine draftsman of the whole universe, and the official builder of all the gods' palaces. Moreover, It is also believe that, he built houses of the whole universe, challenges conventional building techniques and claims that its building technology has the potential to successfully address many of

the constraints currently holding back the provision of adequate shelter at the base of the socio- economic pyramid. The analysis of its model and results suggest that 'Vishwakarma Model' does indeed have huge potential when it comes to providing decent and affordable housing, particularly in its home country. But, this is myth and we are living in real world. Therefore, we are looking for modern tools and techniques to make housing affordable as expected from divine power.

Emerging and innovative technology were widely using from ancient time to make housing affordable. Many standards and specifications were introduced and enforced during urbanized era mainly to monitor and control violations making by money minded construction Industry. But, creativity was eventually started diminishing and conventional approach was established to prominently dominate. Construction methods are required to be developed and put in practice especially to challenge abnormally high rated conventional items and methods. Basic construction material like cement, steel, brick/blocks, timber, fuel, etc item's rate fluctuations are directly hitting proportions to cost and affordability of housing. Local natural material will play significant role to economize housing cost and affordability for citizens.

Researchers are investing lot more time to develop affordable housing by incorporating ecological aspects. Earthen material is primary and very important ingredient for sustainable and ecological housing. Several tools and techniques are introduced and implemented. But, mainly for public works like earthen dams, road works, etc. Similar, Tools and techniques for earthen material are required to be develop and implement for making housing affordable.

Technocrats had promoted occasionally self help houses and eco villages under government or non government organizations. Tools and techniques are provided to citizens and villagers by the way of method statements, line drawings, photographs, etc. in maximum possible details in easily understandable way.

Making housing affordable is biggest problem of this era mainly due to rising building material and labour cost of construction. It is interested to notice that, housing was affordable until last century with very minor problem of universe for over a thousand years. Pune city is also not exception of that. Till that, housing was not largely controlled by construction Industry.

If, one can believe Vishwakarma myth, Universe and miniature of my research universe i.e. Pune was densely populated compare to today. Houses were built by

optimizing local available material like sand, clay, stone, timbers, etc. Inhabitants were comfortably enjoying their life in that dwellings. Somehow, today, ultra modern material and methods are facing difficulties to built dwelling with basic amenities at the affordable price. Major building materials like sand, timber, stone, clay, sticks, natural fiber, etc were technologically used by ancient builders to build very well functional, comfortable dwellings in most possible modest-sized for the Inhabitants. Present construction Industry is facing several difficulties to supply housing to the demand, In spite using so called modern materials and construction methods to the Inhabitants comparatively less than ancient era. One of the factor adversely affecting this subject is present building bye laws enforced by the authority mainly promoting manufactured material, but In fact, these manufactured materials are enhanced form of natural resources, which are far from the manufacturing units and construction sites. Processing cost of such manufactured items during extracted from natural resources may be moderate but loading, hauling, unloading, sizing, seasoning, inspection, testing, etc adding in landed cost of such manufactured material. Installation, testing and commissioning of that manufactured items is time taking and expensive. Major segment of construction Industry is running with extremely high margins compare to other commodities. These all factors all together results in the premium price of homes and it is beyond the reach of common man i.e. citizens / Inhabitants. Application of effective tools and techniques will help to make housing affordable.

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 Maharashtra 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 Mutha river. 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. This city also known for automobile and manufacturing industries, training and management Institutes, in recent development research institutes of information technology become renown. It is started growing rapidly compare to other Indian and world IT Industrial hubs. Previously this city proved its expertise and capacity to facilitate growth of automobile Industry. So, It is expected to gain success in IT Industry also.

III. AIM & OBJECTIVE:

Aims (what to research) are general statements concerning the overall goals, ends or intentions of research study. **Objectives (how to research)** are the individual stages that

researcher must achieve on the way in order to reach these goals.

Primary aim of study is application of effective tools and techniques to increase availability of affordable housing and satisfy needs of the community and Inhabitant.

Secondary aim of this study is to apply such tools and techniques that make housing sustainable and affordable.

Summarized study of tools and techniques using and can be used to make housing affordable is extracted in this paper. Construction Industry must support to improve life style features like education, work, recreation, family, etc of Inhabitant expecting to live peacefully. Accessible and stable housing is prime need of the society. Results of application of adequate tools and techniques by using emerging technologies and innovations shall be measure and evaluate to enhance housing Industry to match inhabitant expectations. Objective of application of tools and techniques is required to be study and upgrade in this context.

Some of the broad objectives of tools and techniques application to make housing affordable are listed below:

1) Other effective application of tools and techniques to make housing affordable

Make available maximum possible options for housing to various family sizes, persons with special challenges all income groups, senior citizens, etc

- Encourage housing rehabilitation resources to preserve existing housing stock and maintain affordable housing already available with community.
- Facilitate to build reasonable proportion of the housing as affordable units through extra homeownership opportunities for individuals and families of different earning segment
- Make every effort for partnership and innovation for making programs, policies and model coordinates to expand opportunities for moderate and low Income group.
- Promote affordable housing activities by applying best suitable tools and techniques of other groups including rehabilitation of existing housing, construction of affordable houses, homeownership training and assistance for marketing programs.
- Promote 'Combined use' developments, residents built on the upper floors of commercials, down town buildings, housing in the location of high density housing within walking and convenient commuting distance of employment, shopping, and other activities, or within a short walk of a bus or transit stop and other creative strategies.
- Inequitable distribution of public resources in the past or physical deterioration can be prevent by actively participating and applying adequate tools and techniques for suffering neighbourhood.
- All present and future residents regardless of their Income group shall access to public amenities and assure a quality living environment.

2) To provide housing in compliance with environmental sustainability with sustainability of community by using appropriate tools and techniques

Social and economical sustainability is most concern for the inclusive diverse community, which can be achieve by applying unique tools and techniques to make housing

affordable. Further, It will be supportive to enhance ability of community sustainability for built and maintain local services, economic opportunities, social networking. Range of services and local businesses are supported by diverse community. It also deliver these activities by provide labour force. Communities social network will grow and they stay intact by availing range of suitable housing to satisfy changing needs.

This will help to ensuring that development can meet “the needs of the present without compromising the ability of future generations to meet their own needs” ([Brundtland Report 1987](#)). Fragility of our environment is required to be recognize based on environmental sustainability concept. Urban development shall focus on their prime aim to reduce reliance on non-renewable sources and protect the natural environment by containing environmental impacts. Sometimes competing objectives like environmental sustainability and affordability are extremely difficult to mitigate during developing housing especially, when long term affordability is focused. Proper building orientation and careful site planning are some of the useful approaches to achieve environmentally sustainable design without adding into housing cost. There are few measures contributing upfront costs, which ultimately results in long term cost savings by applying adequate tools and techniques to make housing affordable.

3) To facilitate location of affordable housing provide Inhabitants proper access to social, service, support networks, transport, employment by applying adequate tools and techniques

Housing will be affordable, when it is accessible to major transport nodes or efficient and regular public transport or concentrated area close to commercial centres or employment centres. Majority Inhabitants are looking for accessibility of reliable, convenient and safe transport or employment, commercial centres and services available in nearby vicinity for affordability.

4) To provide access to Inhabitant for affordable housing to matching their needs:

In general, Habitant's primary need is location, size, physical attributes, etc. Secondary need is constructed dwelling had complied engineering standards especially for structural stability, safety and health. Tools and techniques essentially used to provide privacy and space to Inhabitant. Further to that, Affordable housing must accommodate special needs especially for physically challenge members.

5) To promote accessible and adaptable and affordable housing compatible for changing needs of Inhabitants by applying modern tools and techniques

Minimum cost is expected by Inhabitant to extend or modify house for satisfy changing needs. Affordable houses are expected to be design and built by using modern tools and techniques suitable to any Inhabitant irrespective of health conditions, level of mobility, life style preferences, age group

Affordable housing shall be suitable and accessible for the special need and physically challenge Inhabitant segment also.

The aims and objectives of our housing strategy are an important statement of our study intentions and guiding principles in relation to housing. Information collected during the housing study informs the development of our housing strategy, and the identification of the aims and objectives to guide it, but is not in itself sufficient. Input from all stakeholders like Inhabitants, government officials, builders, engineers, architects, workers, utility service providers, town planners, social workers, etc as well as broader perspectives from key stakeholders such as resident groups and local community organisations is generally needed. The need for the objectives of planning instruments to be compatible with our housing strategy objectives is effective by applying tools and techniques under urban planning.

6) To build range of housing according to financial capacity and adequate supply by using tools and techniques to make housing affordable to LIG (Lower Income Group), MIG (Moderate Income Group):

HIG (Higher Income Group) is mostly successfully negotiating to enforce application of adequate tools and techniques to construct their homes since affordability is not constrain and Inhabitant had acquired knowledge and skill to accumulating wealth. But, this is not the case for everyone. Application of adequate tools and techniques are essential to make housing affordable in relation to Income. It is challenging due to the construction Industry dominated by private players. Different Income levels were defined by the respective governments all over the world influenced on their category like developed, developing, under developed countries. But, In general 30 percent of gross Income on housing is considered heuristic approach for research fallows. That means, those Inhabitants, who are spending less than 30percent of his gross Income for housing availing affordable and others are not. It is termed as housing stress. They are struggling for funds to avail their other needs. Appropriateness and affordability shall be objectively studied before other housing related features like inclusiveness, sustainability, choice, opportunity, community wellbeing, etc.

7) To provide affordable housing by application of tools and techniques to support Inhabitants opportunity to pursue goals related to recreation, creativity, education, work, family, etc

Inhabitants living in community and housing expecting to explore available opportunities and quality of life. Suitable and affordable housing is often bearing on Inhabitant or ability to achieve their set goals. Location and accessibility of affordable housing is highly influenced to align opportunities to Inhabitant like education, service, job, etc. Further to this, capacity of privacy, space to work from home, etc come to next.

8) To satisfy Inhabitant's expectations like meet diverse community need and wellbeing:

Tools and techniques to make housing affordable shall be address Inhabitant's expectations of affordability and appropriateness. Diverse community needs can be satisfied by using adequate tools and techniques during housing provisions and enhance community wellbeing.

9) To provide choices for housing in terms of size, tenure, types, etc at suitable locations within affordability limit of Inhabitants respective Income group by using innovative and sustainable tools and techniques exploring emerging technologies:

All choices may not depends on financial proportions. But, housing category is mostly depend on Income class. Inhabitants preferences, aspirations, needs are normally according to his Income class. Tools and techniques are required to be applied for provide access to wide range of houses, which are diverse and appropriate to the expectations of different socio-economic segments of the community.

IV. REVIEW OF THE LITERATURE

Literature review of following major documents to enhance understanding about the subject:

Affordable housing and zoning techniques

Erie County Community Development Block Grant (CDBG) Consortium

Prepared for Erie County Department of Environment and Planning (Wendel)

October 2012

The intent of this handbook is to provide local officials with information regarding fair housing and zoning and other land use controls available to further fair housing. As there region experiences demographic change, promoting fair and affordable housing within their local municipalities will become increasingly important in order to maintain a diverse housing stock that meets the needs of local residents and fosters stronger communities.

Preventing, Protecting & expanding affordable housing

A Policy tool kit for public health by change lab solutions

Strategies used to create healthy places benefit all community residents – especially those with the fewest resources. Preserving, Protecting, and Expanding Affordable Housing: A Policy Toolkit for Public Health is designed to further that goal. It provides public health practitioners, along with their allies in public agencies, community organizations, and the private development community, with the tools and strategies needed to preserve and promote safe and affordable housing for low- and moderate-income renters. In the face of increased demand fueled by changing demographics, private and public investment, and other factors, housing must be on the agenda of all of us who envision a healthier future for all.

Town of Cary

Affordable Housing Tool Kit

Town of Cary Planning Department 318 North Academy Street Cary, North Carolina 27513

This “tool kit” was prepared in 1999 and is an exploration of the variety of approaches the Town of Cary can take in implementing its affordable housing initiative. Ordinances, policies, programs, and other practices are described, examples are given from around the country, and the pros and cons are presented for each tool. The recommended tools (high and medium priority only) are included in literature. The high priority tools include inclusionary zoning with density bonuses, fast-track review, development fee reimbursements, growth control exemptions, creative density increase, infrastructure support, down payment/closing cost/mortgage assistance, homeownership education, and grants for affordable housing development. Medium priority tools include partnerships with financial institutions that proactively address affordable housing needs, land purchase and transfer to affordable housing developers, and employee ownership programs. Those tools that may not be appropriate for the particular needs of the Town of Cary, that are already being addressed by other entities, or that, because of administrative complexity, may be better addressed after the Town develops more familiarity with housing programs, are also included for discussion purposes in the tool kit. Virtually all of the largest cities and counties have housing programs aimed at serving a wide spectrum of housing needs through land use regulations, public housing, rent subsidies, rehabilitation of older units, mortgage assistance, rental and single-family housing production, infrastructure development, and other public contributions and inducements. This document focuses primarily on the affordable housing approaches of moderately sized, suburban communities experiencing growth pressures in the eighties and nineties, since these types of communities are more analogous to the particular Town of Cary than large, older metropolitan cities. Several Town housing goals also are presented for consideration for use in the Housing Plan component of the comprehensive plan under development. A proposed definition of “affordable housing” is also presented. The definition follows the national standard that is used by county, state, and federal funding agencies. The purpose of the tool kit is to help the Town Council in its decision-making about the future direction the Town takes in addressing its relatively high cost of housing. By helping to increase the proportion of homes that are financially within reach of many members of the Town’s workforce, such as retail clerks, service workers, teachers, policemen, and fire fighters, the Town reduces in-commuting, enhances the ability of its public employees to respond to emergencies, and promotes economic diversity. The tool kit, as well as the Town of Cary Housing Report, will be incorporated into the Affordable Housing Plan to be considered for adoption in 2000. The affordable housing approaches that Council chooses to pursue will be assembled into the Town of Cary Affordable Housing Plan. The Town of Cary Affordable Housing Plan was adopted on May 11, 2000.

Affordable Housing

A Guide for local officials, 2007

Bill Ritter, Governor

Colorado Department of local affairs

The availability of affordable housing is paramount to maintaining healthy regional economies as well as helping families maintain financial stability. While this issue affects many individuals, it has larger impacts on the economy as a whole. Without affordable housing, businesses are not able to recruit and retain workers. Without workers, businesses are not able to function with high efficiencies. In many communities the cost of housing is becoming a source of community wide concern. New residents have raised the demand for housing units beyond the capacity of many communities to supply them. This high demand has resulted in record prices for land, homes and rental dwellings, even in the face of a softer real estate market. When housing costs are discussed, local leaders often feel that the housing market is beyond their control and there really isn't any role for local government in proposing and executing solutions to housing problems. The conclusion that local housing markets are not influenced by local actions is not borne out in history.

This guidebook is designed to provide some of that information. We will find information that should increase understanding of the following areas: "

- Provide a basic framework and rationale for local government involvement in housing markets.
- Provide basic methods to enable communities to recognize and understand markets and the market problems regarding housing.
- Provide basic information on the roles, tools and options that might be considered by a local government desiring to increase the supply of affordable housing in its community.
- Provide information sources and agencies to contact in order to gain more information or assistance on housing issues.

V. RESEARCH METHODOLOGY

Selected research method – Descriptive & diagnostic research Study

Descriptive research is used to describe characteristics of a population or phenomenon being studied. It does not answer questions about how/when/why the characteristics occurred. Whereas, **Diagnostic research** is related terms for Identification of a condition, disease, disorder, or problem by systematic analysis of the background or history, examination of the signs or symptoms, evaluation of the **research** or test results, and investigation of the assumed or probable causes.

Combined research is most suitable for study tools and technique to make housing affordable.

Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual or of a group, where diagnostic research studies determine the frequency with which sometimes occurs or its association with something else. This study is concern with specific predictions with narration of facts and characteristics concerning individual, group or situation.

The Research was based on primary data. The respondents of the study are the Inhabitants, Govt officials, banking and finance Organisation, Architectures, Construction houses in and around Pune city and the New Pune As per the development plan.

Conditions: The respondents are related to Affordable housing Development for Government (SRA - Slum Rehabilitation Authority and other) & They have ability to impact the decision on tools and techniques to make housing affordable.

The instrument was a questionnaire for Govt and Private sector respondent

Primary data collection was collected by adopting following data collection methods: By observation, through personal interview, through telephone interview, by mailing of questionnaire, Through schedules

Secondary Data was collected from Journals, magazines, reports and publications of various sources. Also Internet and reference books was used for the validation of our data.

Sample Size

Study purpose a random sampling method is suitable used

Observation

Indian population is more than 1 billion. It is estimated that by the year 2021, 350 million people will be added with further concentration of population in urban centre up to 12 percent. According to projected Census, India had total residential housing stock of 187 million out of that only 51 percent are permanent dwelling units. Moreover, out of this housing stock 54% are not availing sanitation facility, nearly 85% do not avail electricity and more than 22% do not avail drainage facility. Shortage of basic infrastructure facilities in present housing stock and the deficiencies indicates constant shortage of dwelling units with basic needs. Further to that, it is projected that by the year 2021 the population of urban poor will be nearly 180 million.

This exhibit that with present growth rate, urban areas will face messy conditions for housing provision and the shanty image of cities will create challenges over environmental sustainability of human settlements. To mitigate housing conditions in deteriorating to slums fundamental changes are required to initiate in existing land policies assuring tenure security. However, mostly government strategies on slum rehabilitation, relocation or redevelopment had failed. Moreover, it was recognized that private sector housing market not including large segment of population under poverty line in the urban areas due to low profitability. This implies that there is a need for a reorientation in the existing notions of housing provision by public intervention, which becomes an top priority need to provide housing affordable to all.

According to an estimate India had a constant shortage of 21.23 million dwelling units, out of which 36% are required in urban areas. The last Five-Year plan suggests that there is a need to build / upgrade 10 million dwelling units for urban poor or EWS (Economically Weaker Section) and 5 million for LIG (Lower Income Group) in the urban areas

particularly. Projecting present rate of supply of urban housing, the future rate of supply has to be enhanced three times to eliminate housing problem in urban areas. However, it seems to be difficult for public sector agencies to accelerate rate of housing provision looking at limited financial resources of INR 3400 Billions in comparison to required investment of INR 12137 Billion for urban areas. The present calamity in the housing sector and decaying living condition of LIG (Lower Income Group) and EWS (Economically Weaker Section) segments is largely due to unsuitable government interventions. Although, government has used various strategies to fulfil housing demand, the current state of affair indicates shocking level of backlog in affordable housing especially to LIG (Lower Income Group) and EWS (Economically Weaker Section) segments. This along with ever rising deficit leads to exponential growth in housing demand. To eliminate housing deficiency the National Housing and Habitat Policy (1998) aimed at providing shelter to all by 2010, which was not achieved due to poor application of tools and techniques to make housing affordable..

A. The Real Estate Market

In such situation, government relied upon private real estate developers to fill the gap in housing demand; however, the downturn in the last decade affected it largely. After several years of downside, housing market in India has witnessed upswing registering five to eight percent increase recently. However, according to Colliers international, the increase has been primarily in newly constructed properties due to establishment of actual users. A property investment review by Knight Frank reports that the residential market has been activated due to low interest rates and competition among housing finance companies and budgetary soaps. When interest rates have fallen significantly over the last few years, there is a possibility that borrowers would prepay their loans to take advantage of lower margins on fresh loan. According to Business Line (2003) customers would gain more by prepaying housing loans rather than investing any surplus as interest rate for loan disbursed by HDFC in last decade was much higher than what prevails now. This pattern suspects probability of a higher level of repayment in the range of 12-14 percent. As a result the housing finance industry has witnessed high portfolio growth rates of average 35 to 40 percent approx in last few years as reported by the Credit Rating and Information Services of India Ltd (CRISIL). Furthermore, the amendments in the recent Finance Bill allow large deduction of an amount equivalent to the total interest paid on housing loan from the taxable income in case of self occupied properties and for rental properties there is no ceiling. This suggests that to take advantage of government incentives under several sections of the Income Tax Act, prospective buyers will consider option of housing loan rather than self-financing. The lower interest rate offers substitution of rentals with EMI (Equal Monthly Instalments) with a possibility of increased purchasing power of buyers and has lead to active real estate market. The Knight Frank survey of property trends in Pune (Also Mumbai, Delhi, Bangalore) reveals that

after recent stabilisation in real estate market, individuals and institutions look forwards to invest in order to yield returns between 12-18 percent. For example, HDFC has invested around INR 100 Billion in commercial real estate in Pune (with Bangalore, and Hyderabad) totalling 329,000 sq.ft, while ICICI has bought 300,000 sq.ft in Bangalore and Hyderabad to lease it out. Confirming the trend a report of Knight Frank estimates that 90% of all commercial property transactions in the last few years have been leasehold. The average yield from commercial property's leave-and-license agreement with a lengthy lock-in period can yield as high as average 15 to 20 percent approx returns outstripping the return from equity or gilds. A strategy fundamental to a decision whether to own or lease involve minimum capital investment, maximum flexibility and easier exit possibility in response to unstable real estate market.

While the budget made all kinds of concessions to boost the housing sector, many urban areas face slag in market due to oversupply of unsuitable housing stock. For example, despite one million sq.ft of commercial space lying vacant in Gurgaon, there is a demand for another two million sq.ft just because the prior is designed for traditional corporate offices, whereas the later demands larger floor-plates and higher ceilings for call centers. This indicates that other than pricing criteria, customer needs and design specifications play a vital role in back clearing the housing stock in the real estate market. Another example suggests that housing prices in Mumbai would remain subdued with continuing over-supply of MIG (Medium Income Group) and HIG (Higher Income Group) housing. Moreover, it is perceived that the retail property market in four major metros will not have major positive reception over the next few years due to around five million sq.ft of housing stock expected to come out into the market. Besides MIG (Medium Income Group) and HIG (Higher Income Group), real estate developers are least attracted to housing for LIG (Lower Income Group) and EWS (Economically Weaker Section) due to lower profit margins. However, there is no doubt that the housing demand in the LIG (Lower Income Group) and EWS (Economically Weaker Section) segment also live and offers huge opportunity when government is liberalising on every aspects of housing urban poor and deprived. This demands a reorientation and reforms in present government policies for sharing responsibility with private developers to provide housing to urban poor and deprived.

VI. CONCLUSION

Key conclusions of this study to make tools and techniques effective for making housing affordable is listed below:

- Conduct a housing needs assessment;
- Provide financial assistance;
- Establish a land banking program;
- Contribute land to affordable housing;
- Set a community housing plan;
- Allow "Fast Tracking" of affordable housing projects.
- Reduce the impact of regulations on affordable housing;

- Reduce, defer, off-set or waive development fees for affordable housing that meets your criteria;
- Allow property tax/sales and use tax waivers;
- Develop criteria or definitions of affordable housing;

Subjective conclusions:

- **Employee Homeownership Programs:** some cities (and companies) provide low interest loans for helping their moderate-income employees acquire a home.
- **Homeownership Education:** provided by housing agencies, banks, nonprofits, and others, often at little or no cost, to help “de-mystify” the home buying process and explain resources available for moderate-income buyers.
- **Infrastructure Support:** city provision of water, sewer, drainage, or street improvements as a contribution to an affordable housing development.
- **Land Purchase and Resale:** city acquisition of land that is donated/sold at lower price/amortized at low interest to an affordable housing developer, who passes the savings on to the purchasers.
- **Support for Community Land Trust:** city contributes funds to a non profit land development company that retains ownership of land but sells units (less the cost of the land) to moderate-income families.
- **Housing Rehabilitation:** primarily for owner occupants, town can partner with Housing Development Corporations to provide additional resources to address substandard properties.

Other conclusions:

- Short and long run impacts are required to consider for comprehensive study of tools and techniques application to make housing affordable by accounting total cost including applicable taxes and maintenance, utilities, etc.
- Majority communities are seeking integrated strategy for application of tools and techniques to make housing affordable.
- Application of tools and techniques are also required to help some LIG (Lower Income Group) for repairing and maintenance their homes.
- Small segment of total affordable house demand are addressed by government sponsored and subsidised housing. Therefore, Special tools and techniques are required to be applied to serve special need people.
- If, Urban fringe development is located and planned to maximize transport and accessibility options. Application of adequate tools and techniques will facilitate to arrange competitive rated transportation and high level infrastructure so it will resulted housing at affordable price.
- Application of tools and techniques for inclusionary zoning may result in housing at affordable rate. It is

well application in the particular zones, where demand level is extremely high but shall be otherwise avoided to prevent market spoiling for new housing construction.

- Costs for urban infill and unjustified restrictions removal is normally the significant beneficial and highly cost efficient since its advantages are deeply dispersed. Tools and techniques shall be smartly apply to advocate for restriction removal and take up challenge to make housing affordable.
- Analysis of tools and techniques used for affordable housing including demand and supply analysis shall form the 'Requirement Statement' containing all aspects required to be commit and address by concern stakeholders. In spite large gap between actual experience and objectives, research fallow focus to facilitate to form strategy by identifying priority areas to make housing affordable.
- Additional objectives and goals may also be find or requirement to enhance existing objectives and goals. There may be missing contents also like promoting different tenure, size and type choice or options or range for affordable housing.
- It emerges from the study that to effectively apply tools and techniques for facilitate affordable housing the National Housing and Habitat Policy has to address affordability of LIG (Lower Income Group) and EWS (Economically Weaker Section). The deprived achievements of the policy indicate need for fundamental changes in the present approach to make it more facilitating, enabling and realistic policy. To summarize government's comprehensive role as catalyst should be to offer a package of land and services and finance and technology. The present form of public-private partnership (PPP) has shown some limitations and hence public-private-people's partnership (PPPP) can only turn the dreams of millions of poor and deprived to have their own house. In order to achieve 'Housing for all' the national priority should be to target low- and moderate-income households under the public-private-people's partnership (PPPP) mechanism by improvising above imperatives. The realistic approach of reforms in the National Housing and Habitat Policy can only turn dreams into realities.

Steps for implementation by using tools and techniques to make housing affordable:

1. Learn from other communities have many different approaches to affordable housing. Programs range from incentives to requirements – from monetary contributions to donations of land – from deferral of impact fees to fee waivers.
2. Create an affordable housing strategy. Opportunities to create affordable housing occur on a frequent basis in local communities. By creating affordable housing goals and strategies tied to the housing and economic needs of the community, local governments are prepared to take

- advantage of opportunities in a consistent and rational manner. [8]
3. Analyze the purpose of land use regulations and building codes. The primary purpose of these policies is the health and safety of residents living, working or travelling in the community. It is important to assess the cost and benefit of each of these policies regarding their long-term impact on housing development, including consideration of the original purpose of the existing code or standard. [9]
4. Conduct a housing needs assessment. A housing needs assessment provides an analysis of the overall condition of a community's housing and the need for specific types of housing, i.e., homeownership, rental, and special needs housing. A housing needs study also examines existing housing stock – its characteristics, physical condition, and the number of units, and may make recommendations about the type and quantity of housing needed to satisfy future needs. [10]
- [11]
- [12]
- [13]

VII. SCOPE & LIMITATION

Temporal scope for the purpose of data collection and study mainly the duration of 2010 to 2015 (i.e. five years) was considered. Wherever, necessary references were made from historical data & the pilot study.

Functional Scope: Purpose of the study is to understand the tools and techniques to make housing affordable particularly in Pune, Maharashtra. The idea is to understand the availability of such tools and techniques and further enhance those to make useful for affordable in every possible sector.

Geographical scope: This study is an in-depth study with special reference to the urban part of Maharashtra especially for PUNE.

LIMITATIONS - Sampling effect, Spectrum limitations of location, Limited parameters, Limited criteria, Effect of changing government schemes, Effect of changing private organizations schemes, Effect of changing mind set of generations

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